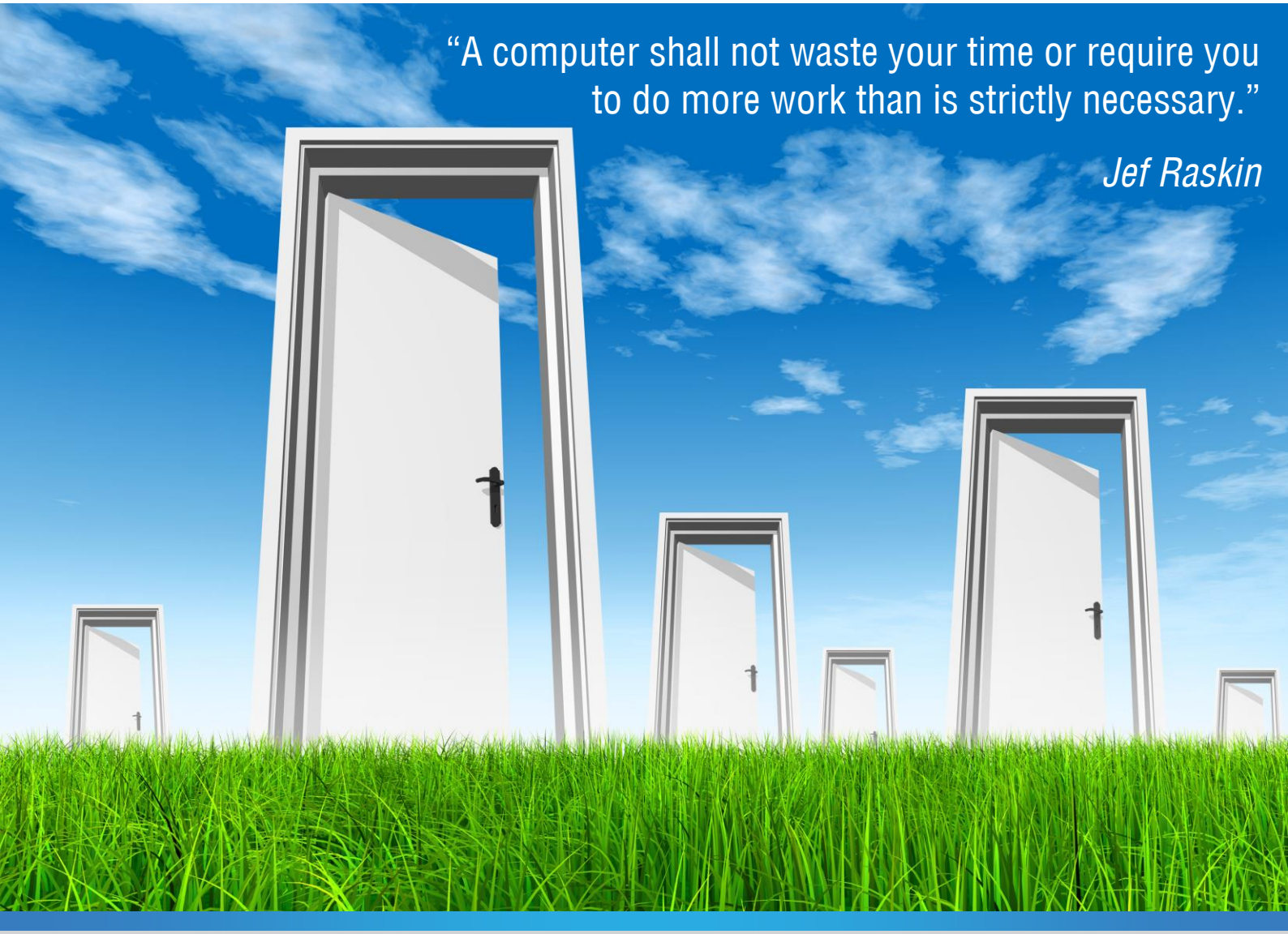
www.sharpersoftware.com

SharperSkills® TFS Training

Visual Studio

Team Foundation Server 2013

HANDS-ON TRAINING



Prepared by:
Hovsep Karaguezian
Co-Founder & Chief Software Architect
Sharper software

SharperSoftware

Third Edition

TABLE OF CONTENTS

Training at a Glance **4**

Module 1 – *Introduction* 4

Module 2 – *Understanding the Virtual Server Environment* 4

Module 3 – *Building the Right Software* 4

Module 4 – *Improving Developer Productivity* 4

Module 5 – *Testing with TFS and Visual Studio* 5

Module 6 – *Branching, Merging and Other Advanced Topics* 5

Module 7 – *Software Project Management with TFS* 5

Module 1 – Introduction **6**

Course Audience 6

Who is this course for? 6

Who is this course NOT for? 6

Housekeeping rules 6

Your instructor 6

Our Case Study Company: Fabrikam Fiber 7

Document Conventions 7

Module 2 – Our Training Virtual Environment **8**

System Requirements 8

Installing the Virtual Environment using the collateral DVD 8

Using Hyper-V on Windows 8 or later 8

Running the Virtual Environment 9

What's on the Hyper-V Image? 9

Installed Software 9

Expiration 10

Rollback 10

Date and Time 10

How to Log In **Error! Bookmark not defined.**

Module 2 – Check your knowledge **Error! Bookmark not defined.**

Module 3 – Building the Right Software **11**

Effective Requirement Gathering 11

Use Case Diagrams 11

Class Diagrams 14

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Activity Diagrams 15
Sequence Diagrams 16
Storyboarding 17
Collecting user feedback 19
Module 3 – Check Your Knowledge **Error! Bookmark not defined.**
Module 4 – Improving Developer Productivity 21
Team Explorer Overview 21
Local Workspaces 22
Pending Changes 25
Suspend and Resume 26
Merging Basics 29
Module 4 – Check Your Knowledge **Error! Bookmark not defined.**
Module 5 – Testing with TFS and Visual Studio 32
Manual Testing using the Test Manager 32
Introduction to Platform Testing 34
Introduction to Exploratory Testing (XT) 38
Unit Testing, Code Coverage and Code Clone Analysis 41
Web Performance and Load Testing 43
Coded-UI Testing 46
Introduction to Lab Management 48
Module 5 – Check your knowledge **Error! Bookmark not defined.**
Module 6 – Branching, Merging and Other Advanced Topics 48
Branching and Merging Visualization 49
Code Analysis 51
Using the Architecture Tools 52
Creating and Customizing TFS Reports 57
Module 6 – Check your knowledge **Error! Bookmark not defined.**
Module 7 – Software Project Management with TFS 59
Product Backlog and Sprints 60
Managing the Portfolio of Projects 63
Work Breakdown Structure using Office Project 66
Module 7 – Check your knowledge **Error! Bookmark not defined.**
Appendix A – Preparing the Virtual Environment for Lab Management 70

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

TRAINING AT A GLANCE

Module 1 – *Introduction*

This module is the introductory module to the course. Here is what we will discuss during this module:

- Course audience
- Housekeeping rules
- Your instructor
- Our Case Study Company: Fabrikam Fiber
- Document Conventions

Module 2 – *Understanding the Virtual Server Environment*

In this module, you will learn about:

- System requirements to run the Virtual Environment
- How to install the Virtual Environment
- How to run the Virtual Environment
- What's included in the Virtual Environment
- The Managed Service Accounts needed to install and configure SQL Server 2012.
- Check your knowledge

Module 3 – *Building the Right Software*

In this module, you will learn:

- Effective Requirement Gathering
- Use Case Diagrams
- Class Diagrams
- Activity Diagrams
- Sequence Diagrams
- Storyboarding
- Collecting feedback
- Check your knowledge

Module 4 – *Improving Developer Productivity*

In this module, you will learn:

- Team Explorer Overview
- Local Workspaces
- Pending Changes

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

- Suspend and Resume
- Merging Basics
- Check your knowledge

Module 5 – *Testing with TFS and Visual Studio*

In this module, you will learn:

- Manual Testing using the Test Manager
- Introduction to Platform Testing
- Introduction to Exploratory Testing (XT)
- Unit Testing, Code Coverage and Code Clone Analysis
- Web Performance and Load Testing
- Coded-UI Testing
- Introduction to Lab Management
- Check your knowledge

Module 6 – *Branching, Merging and Other Advanced Topics*

In this module, you will learn:

- Branching and Merging Visualization
- Code Analysis
- Using the Architecture Tools
- Creating and Customizing TFS Reports
- Check your knowledge

Module 7 – *Software Project Management with TFS*

In this module, you will learn:

- Product Backlog and Sprints
- Project Portfolio Management
- Tasks Board
- Work Breakdown Structure using Office Project
- Check your knowledge

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

MODULE 1 – INTRODUCTION

Welcome to this SharperSkills® Course. This course was prepared by Sharper Software for training professionals like yourself on how to make the most out of your investment in Visual Studio Team Foundation Server.

Course Audience

Who is this course for?
This course is for improving the skills of the following IT Professionals:

- Software Project Managers
- Developers
- Testers
- Architects

Who is this course NOT for?
This course is not aimed to serve the following audiences, as most of the content is rather technical:

- Business Decision Makers
- Information Workers
- IT Decision Makers – as the course is about how to make the most of TFS, not its features and capabilities.

Housekeeping rules

- Please put all mobiles on silent. If you have an important call, please take it outside the training lab.
- Follow the instructor step-by-step. **Do not** fall behind or you'll lose important knowledge. The instructor will go as slow as possible, so please make sure you keep up.

Your instructor

Hovsep Karaguezian is currently the Co-Founder and Chief Software Architect at Sharper Software. Hovsep has 20+ years of experience in IT in general and in development platforms in particular. Hovsep worked for large organizations in Kuwait including Al-Ghanim Industries, Zain Telecommunications and Microsoft. He's bringing his expertise to your team so you can make the most out of your investment in Team Foundation Server.

For a detailed profile about Hovsep's career, please visit his Linked-In profile at: http://kw.linkedin.com/pub/hovsep-karaguezian/3/1a3/b90.

You can also follow Hovsep on twitter **@HovsepK** and/or Sharper Software **@SharperSoft**.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Our Case Study Company: Fabrikam Fiber

Fabrikam Fiber provides cable television and related services to the United States. They are growing rapidly and have embraced Windows Azure to scale their customer-facing web site directly to end-users to allow them to self-service tickets and track technicians. They also use an on-premises ASP.NET MVC application for their customer service representatives to administer customer orders.

In this training, you will assume several roles (e.g. Analyst, Developer, Tester, Project Manager, etc.). The Fabrikam Fiber team, which consists of 8-10 people, has decided to use Visual Studio application lifecycle management tools to manage their source code, run their builds, test their web sites, and plan and track the project.

Document Conventions

This document uses the following text formatting conventions:

- *Italic* – For labels and other text items that appear on the screen.
- **Bold** – For actions that you need to perform, like clicking on a button or link.
- Underline – For things that you need to beware of.
- | (Vertical bar) – For sub-item selections, such as sub-menu or sub-folders.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

MODULE 2 – OUR TRAINING VIRTUAL ENVIRONMENT

This SharperSkills® Training includes a Hyper-V image that students will use to learn the material during the hands-on labs. Please refer to the Student Welcome Kit for instructions about where to find this image. Microsoft Corporation holds the copyright of this Virtual Machine, which is provided free with this training.

System Requirements

In order to run this Hyper-V image you need the following minimal specifications:

- CPU: At least 2x 2.1 GHz processor cores dedicated for this Hyper-V image. Host system should be capable of handling virtual loads (i.e. SLAT-enabled processor).
- RAM: Host system should have at least 8 GB RAM, at least 4GB of the RAM is dedicated for this Hyper-V image.
- Hard Drive Space: At least 110GB of free hard disk space (more if snapshots will be used) is necessary for running this Hyper-V image.
- Windows 8 or newer. Or Windows Server 2008 R2 or newer. 64-bit Operating System.

Installing the Virtual Environment using the collateral DVD

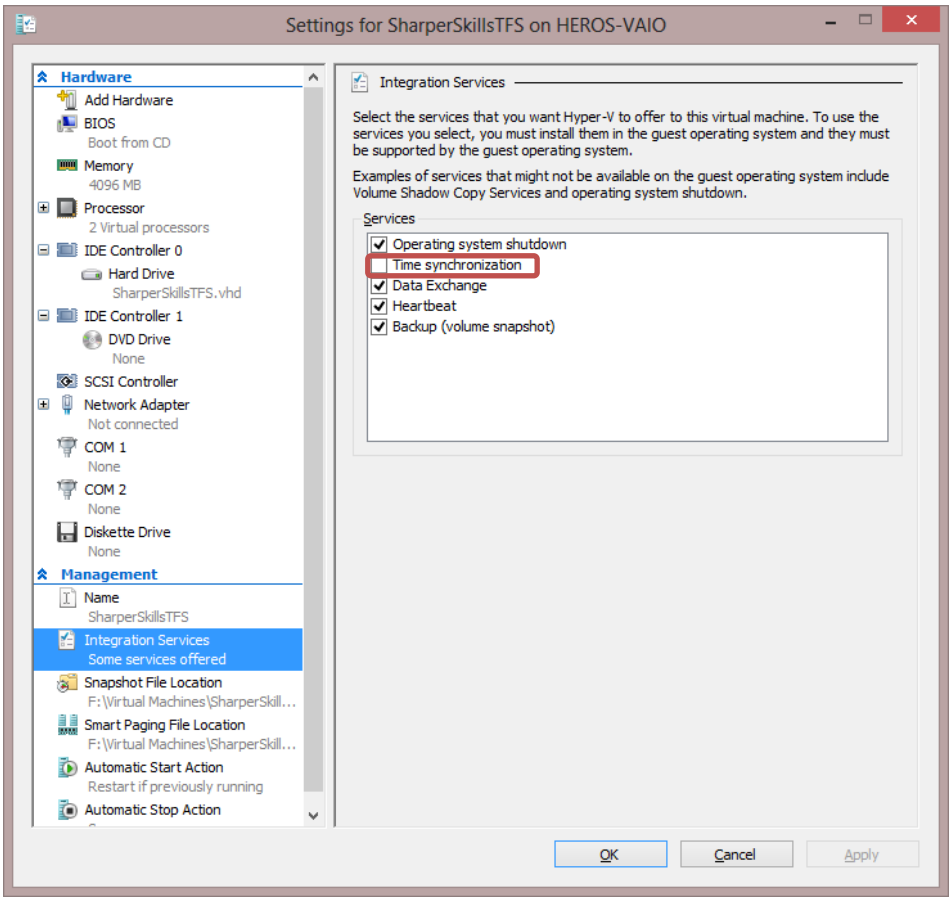
Using Hyper-V on Windows 8 or later

Follow these steps to install the contents of the collateral DVD onto a server.

NOTE: We have already configured student machines to use this image.

1. Insert the accompanying USB flash drive into your computer. Wait for the window to open.
2. Double-Click on **SharperSkillsTFS.part001.exe** to run it. If prompted to elevate privileges, click **Yes** to continue.
3. Select a location on your hard drive where you want to extract the files. Then click **Extract**.
4. Wait until all files are extracted.
5. Click **Start** | **Administrative Tools** | **Hyper-V Manager**.
6. Select **Import Virtual Machine…**
7. **Browse** to the location where you extracted the files and click **Select Folder**. Click **Next**.
8. **Select** the virtual machine and click **Next**.
9. Select the **Register the virtual machine in-place** option. Click **Next**. Click **Finish**.
10. Open the **Settings** of the virtual machine and under *Integration Services*, **uncheck** *Time Synchronization*.
11. The virtual machine is automatically assigned 6GB RAM. We recommend assigning 8GB RAM.
12. At first, use an Internal-only network connection from the available virtual network cards. Later, we will change this setting.
13. Click **OK** to save the settings.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.



Running the Virtual Environment

Follow these easy steps to run the virtual environment using Hyper-V on Windows Server:

1. Click **Start** | **Administrative Tools** | **Hyper-V Manager**.
2. Under *Virtual Machines*, select the image you created in the previous step. **Right-click** then select **Connect**.
3. Wait until the server starts. The logon screen will show.

What's on the Hyper-V Image?

Installed Software

Here's a list of the software installed on this Hyper-V image:

- Microsoft Windows Server 2012 Standard Edition
- Microsoft SQL Server 2012 Standard Edition
- Microsoft Visual Studio Ultimate 2013
- Microsoft Visual Studio Team Foundation Server 2013
- Microsoft Release Management for Visual Studio 2013
- Microsoft Office Professional Plus 2013 (Word, PowerPoint, Excel, Outlook)
- Microsoft Visio Professional 2013
- Microsoft Project Professional 2013

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Expiration

If you choose to activate your virtual machine, it will begin a 180-day trial of Windows Server 2012 Standard Edition. After the **180** days is over you will need to stop using this virtual machine.

Rollback

We strongly recommend that you implement a rollback strategy for restoring this virtual machine to a previous point in time just in case you make a mistake, or if you want to reset the state of the original sample data contained within this virtual machine. Hyper-V uses a concept called snapshotting. Take a snapshot of the Virtual Machine once you activate it for future use.

Date and Time

This virtual machine has been hard-coded to boot up with a system date of July 9, 2013. This is required in order to support the accompanying hands-on-labs and demo scripts. Synchronization with the host operating system is disabled, as is synchronization with Internet time servers. If you reboot this virtual machine after you begin working with data in Team Foundation Server, it may have unintended consequences. Therefore, we recommend that you only reboot during the initial configuration steps as detailed below.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

MODULE 3 – BUILDING THE RIGHT SOFTWARE

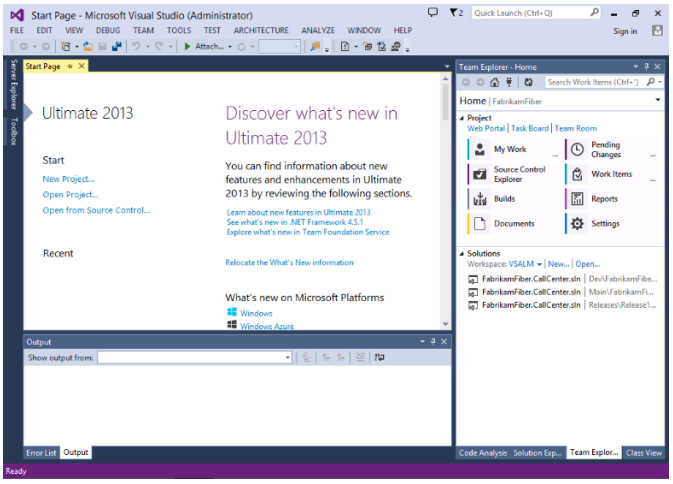
Effective Requirement Gathering

In this section, we will learn how to use Visual Studio and TFS to manage business requirements.

Use Case Diagrams

Explanation

Let's start Visual Studio and create a new modeling project.

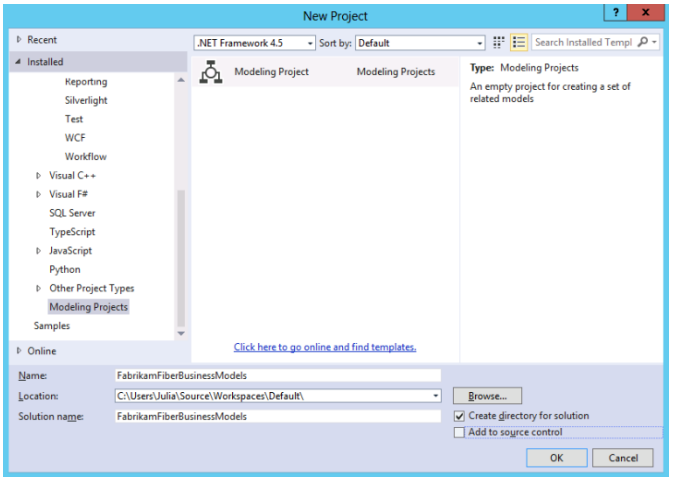


Steps to follow

1. Login as **Julia**, password **P2ssw0rd**
2. Start Visual Studio by clicking on its shortcut on the taskbar, or click **Start** | **All Programs** | **Microsoft Visual Studio 2013** | **Visual Studio 2013**.
3. Click **File** | **New** | **Project** (Keyboard shortcut Ctrl-Shift-N).

Explanation

We will create a Modeling Project to model business requirements.



Steps to follow

4. In the *New Project* dialog box, expand the *Installed* section, scroll down to select **Modeling Projects**.
5. Enter **FabrikamFiberBusinessModels** for the *Name*.
6. **Check** the Create directory for solution checkbox.
7. Make sure the *Add to source control* is **not checked**.
8. Click **OK.**
9. Wait for the blank modeling project to be created.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

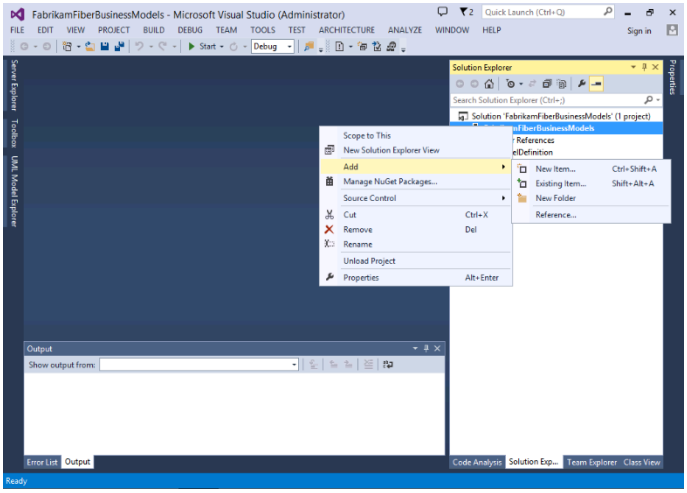
SharperSkills® TFS Training

Explanation

Let's now create a new Use Case Diagram to document user requirements.

Steps to follow

10. In *Solution Explorer*, **Right-click** on *FabrikamFiberBusinessModels* and select **Add | New Item**.
11. Select UML Use Case Diagram.
12. Type **FabrikamServiceRep** for the *Name*.
13. Click **Add**.

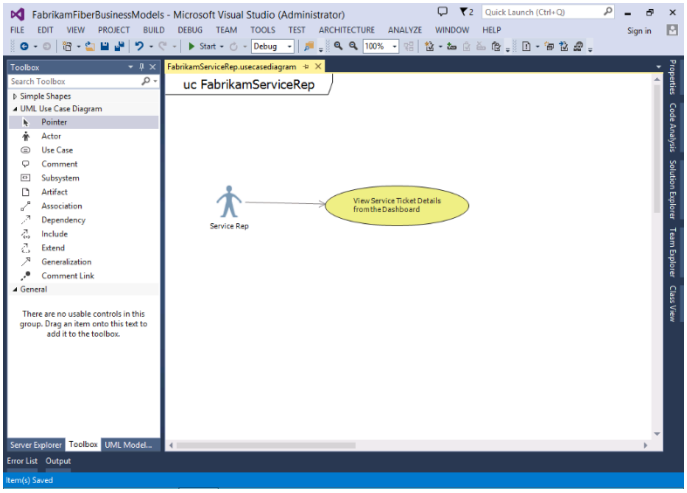


Explanation

Let's add the contents to this Use Case. We'll add a Customer Representative and a use case.

Steps to follow

14. From the *Toolbox*, drag-and-drop an **Actor** to the drawing surface.
15. Type **Service Rep** for the name of the *Actor*.
16. Drag a **Use Case** from the *Toolbox* next to the Actor.
17. Type View Service Ticket Details from the Dashboard inside the Use Case.
18. Resize the use case and align it to the Customer Rep.
19. From the *Toolbox*, click on **Association**.
20. **Draw** the Association between *Customer Rep* and the *Use Case*. Try to match the illustration.
21. **Save** the file.

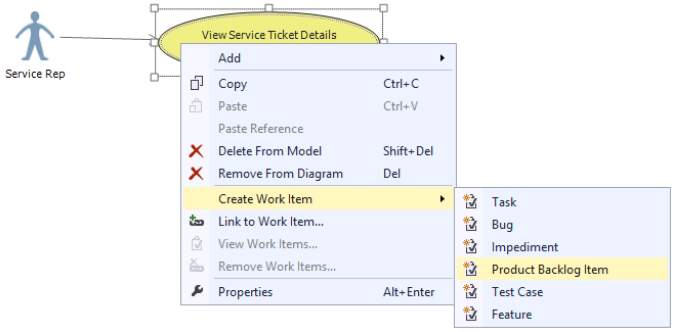


Explanation

Now that the use case diagram is ready, let's create a Work Item to connect it.

Steps to follow

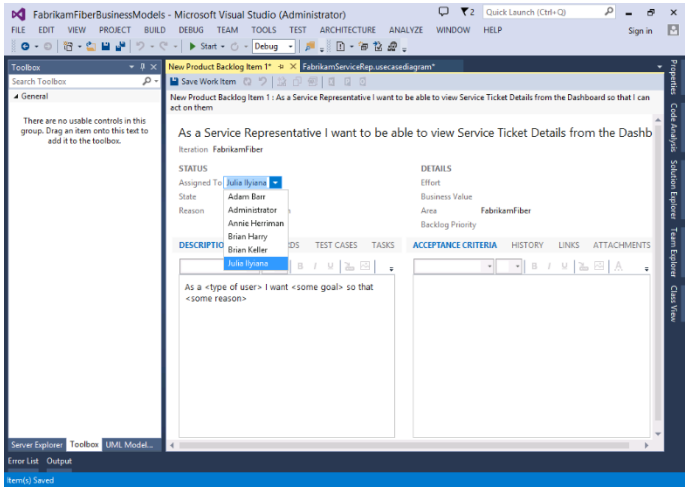
22. **Right-click** on the use case and select **Create Work Item | Product Backlog Item**.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Note that the Title of the Work Item was populated from the Work Item. Let's enter the remaining details and assign this Work Item to Julia.

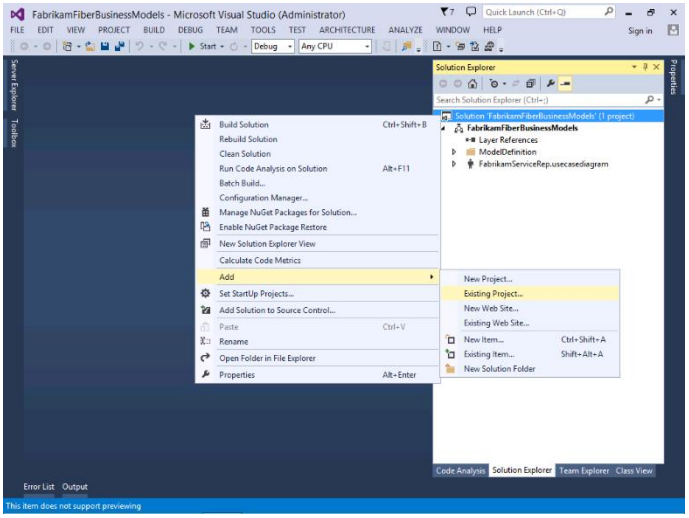


Steps to follow

23. In the *Description* box, change the contents to read: **As a Service Representative I want to be able to view service ticket details from the dashboard so that I can act on them.**
24. **Assign** the Work Item to **Julia**.
25. **Save** and close the Work Item.
26. **Save** the Use Case diagram. Note the associated Work Item.

Explanation

The Use Case we used was a very simple one. Let's open other use cases that are more sophisticated.

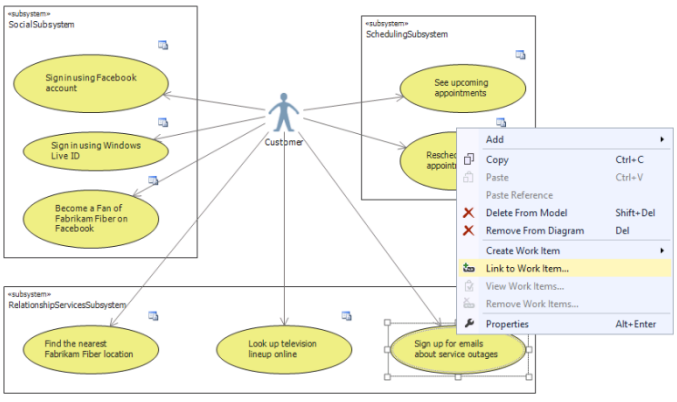


Steps to follow

27. In *Solution Explorer*, **right-click** on the solution name and select **Add | Existing Project…**
28. Navigate to **FabrikamFiberSampleModels | FabrikamFiberSampleModels** and open the **FabrikamFiberSampleModels** Modelling Project.

Explanation

Let's view the Customer Use Case diagram and add more details.



Steps to follow

29. In *Solution Explorer*, **double-click** on **FFCustomerUseCases** to open it. Note that the use case on the bottom-right is not associated with any Work Items.
30. **Right-click** this use case and select **Link to Work Item…**

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

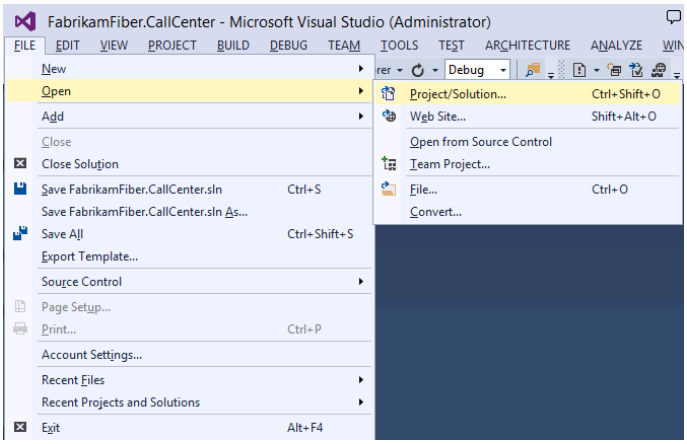
Class Diagrams

Explanation

Now let's try to reverse engineer existing code to see ways to document business rules and relationships.

Steps to follow

31. **Close** all windows and close the solution.
32. Click **File | Open | Project/Solution…**
33. Open the **FabrikamFiber.CallCenter** Solution under the **Dev** branch.

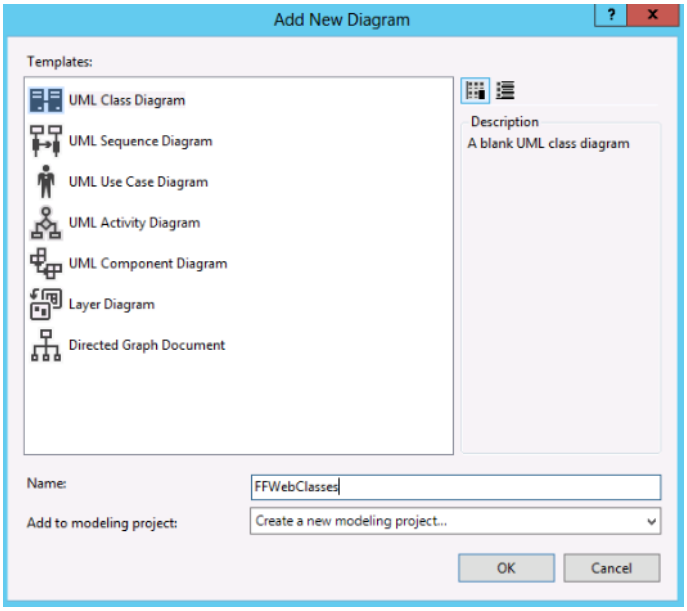


Explanation

Let's now add a Class Diagram to this solution. This class diagram will hold the entities, relationships and rules that govern the business needs.

Steps to follow

34. Click **Architecture | New Diagram**.
35. Select **UML Class Diagram**.
36. Type **FFWebClasses** for the *Name*.
37. Make sure **Create a new modelling project…** is selected.
38. Click **OK**.
39. Type **FFWebModels** for the *Project Name*.
40. Click **OK**.



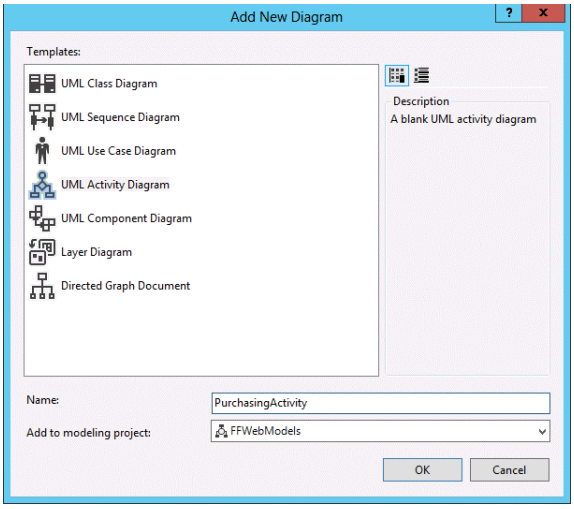
<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Activity Diagrams

Explanation

Activity Diagrams explain the interaction between users and your system. Let's create an Activity Diagram to describe the Purchasing Process.

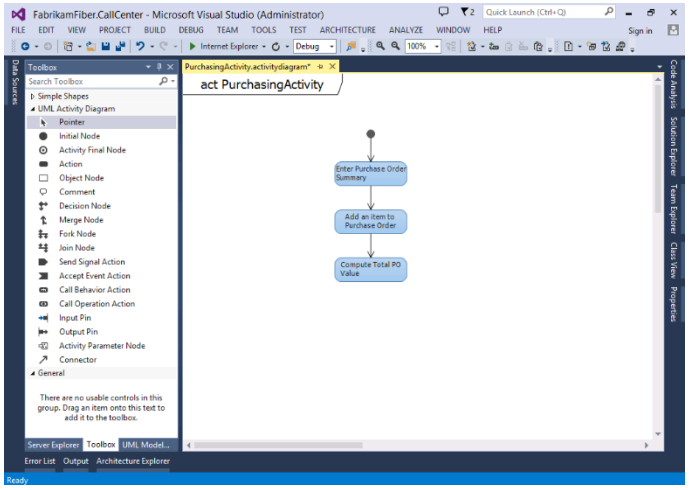


Steps to follow

41. Click **Architecture | New Diagram…**
42. Select **UML Activity Diagram**.
43. Name the diagram **PurchasingActivity**.
44. Click **OK**.

Explanation

Let's add a few elements to our diagram.



Steps to follow

45. From the *Toolbox*, drag an **Initial Node** to the top of the diagram.
46. Add an **Action** item below the *Initial Node* and type **Enter Purchase Order summary** in the box.
47. Add another **Action** and type **Add an item to Purchase Order** in the box.
48. Add another **Action** and type **Compute Total PO Value**.
49. Use **Connectors** to connect all items as illustrated.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

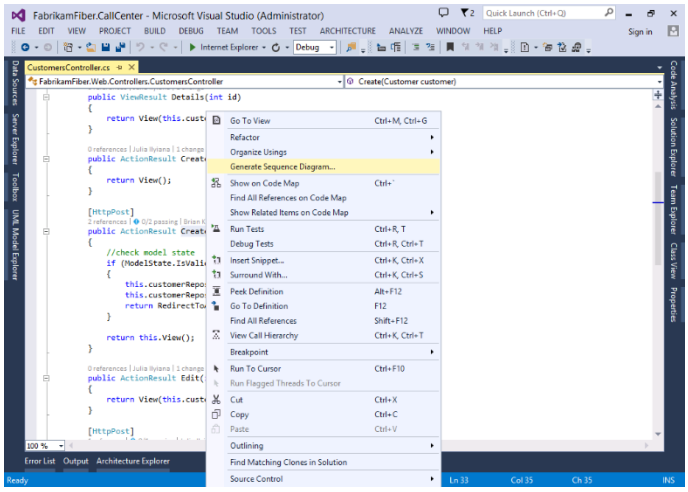
SharperSkills® TFS Training

Sequence Diagrams

A sequence diagram shows the interchange of messages between your system and external actors, or between parts of your system. Instead of creating one from scratch, let's reverse-engineer code.

Explanation

In this part of the training, we will reverse-engineer code to create a sequence diagram.

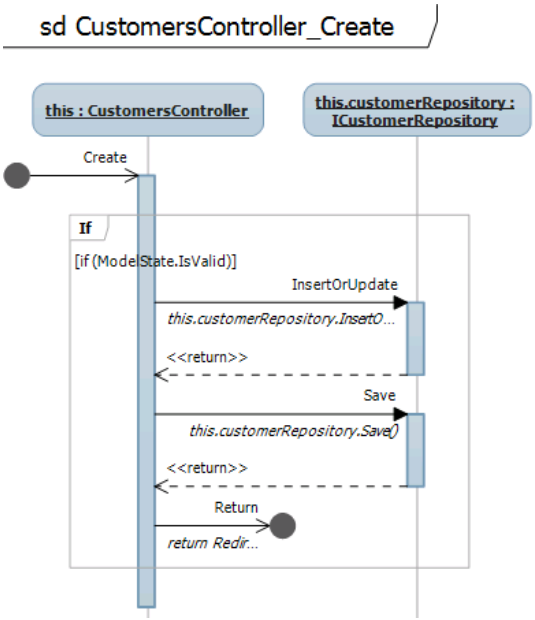


Steps to follow

50. In *Solution Explorer*, open **FabrikamFiber.Web | Controllers | CustomerController.cs**.
51. Scroll down to find the *Create* method.
52. **Right-click** on the *Create* method and select **Generate Sequence Diagram…**
53. Keep the default values and click **OK**.

Explanation

Although this diagram is too simple, it illustrates the need for such a diagram.



Steps to follow

54. Note the actors on the top of the diagram.
55. Note the name of the method on the top-left.
56. Follow your instructor to understand the meaning of this diagram.
57. **Close** all windows.
58. **Revert** back to one of the snapshots to continue.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Storyboarding

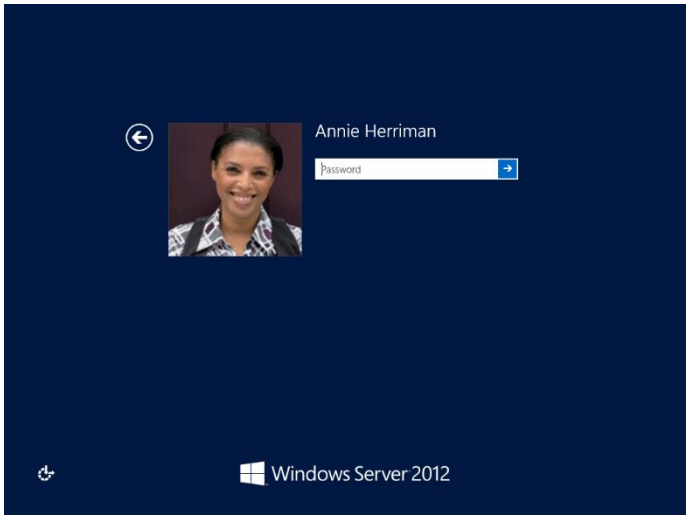
At times, it is important to involve end users in the development process early enough to collect feedback. To achieve this without having to write any line of code, we can use the Storyboarding features.

Explanation

Let's logon to our virtual machine with an Analyst User.

Steps to follow

Log in as **Annie**, the analyst responsible for gathering customer needs and user experience. Password is **P2ssw0rd**

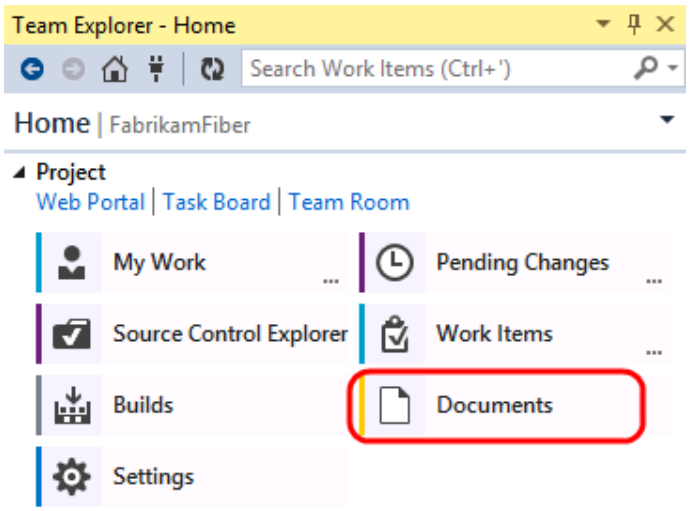


Explanation

Let's get started by locating the existing storyboard.

Steps to follow

59. Launch **Visual Studio 2013**.
60. Open **Team Explorer**.
61. Make sure you are connected to the *FabrikamFiber* project.
62. Click on the **Documents** button to open the documents folder.

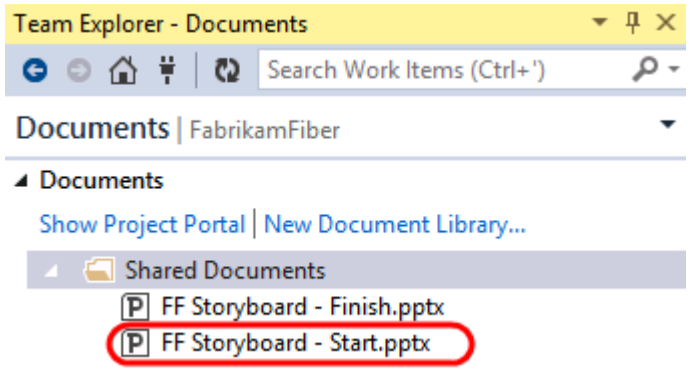


Explanation

Existing Storyboards are located in the Documents folder

Steps to follow

63. **Expand** *Shared Documents* to open the document library where the PowerPoint file named *FF Storyboard – Start* is saved.
64. **Double-Click** on *FF Storyboard – Start.pptx* to open it.
65. Click **Enable Editing**.

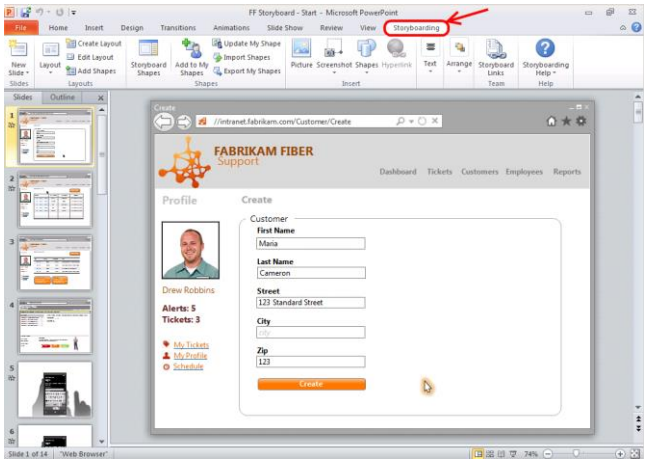


This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

SharperSkills® TFS Training

Explanation

This is the storyboard for the Fabrikam Fiber Support Site. Let's see how to use this tool in PowerPoint. The Storyboarding tab only appears if you installed Visual Studio on your PC.

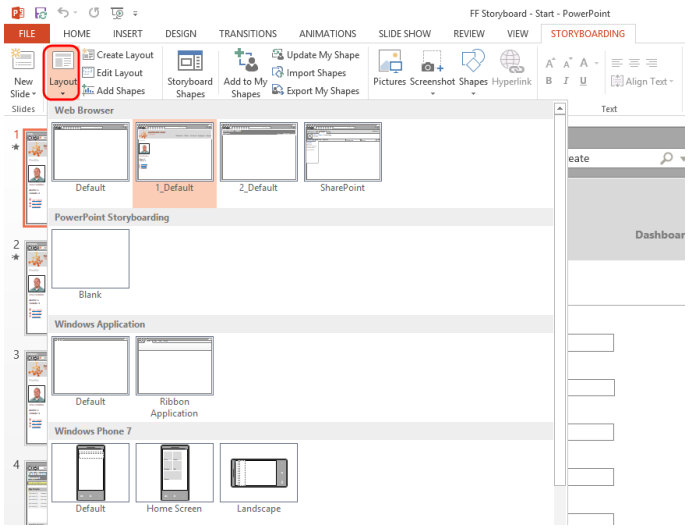


Steps to follow

66. Click on the Storyboarding tab in PowerPoint and follow your instructor to understand the controls and items on the screen.

Explanation

Since this feature is built into PowerPoint, we can take advantage of all its features and use it to present our solution to the end users.



Steps to follow

67. Click on the dropdown next to the **Layout** button.
68. Review the available templates for web and mobile.
69. Click on **Edit Layout** and follow your instructor.
70. Press **F5** to start the slideshow and view the presentation slides.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Collecting user feedback

Involving users early on has a lot of benefits. However, it is important to capture as much detailed information from users as possible, in order to meet their expectations and resolve any issues they may face.

Explanation

We will request feedback from a user.

Steps to follow

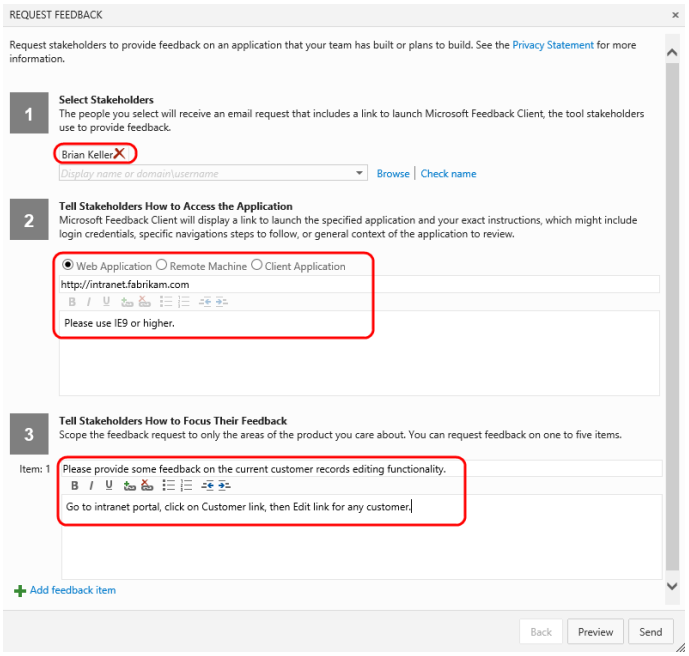
71. While still logged in as *Annie*, open **Internet Explorer**.
72. Click on the **TFS FF Portal** link.
73. Click **Request feedback**.

Explanation

Let us assign the request to Brian Keller.

Steps to follow

74. Select Brian Keller as the stakeholder.
75. Select Web Application and type http://intranet.fabrikam.com
76. Type **Please use IE 9 or higher** for the title.
77. Type **Please provide some feedback on the current customer records editing functionality** for Item 1
78. Type **Go to intranet portal, click on Customer link, then Edit link for any customer** for the steps.
79. Click **Send**.
80. Back in the portal, notice the Feedback request.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

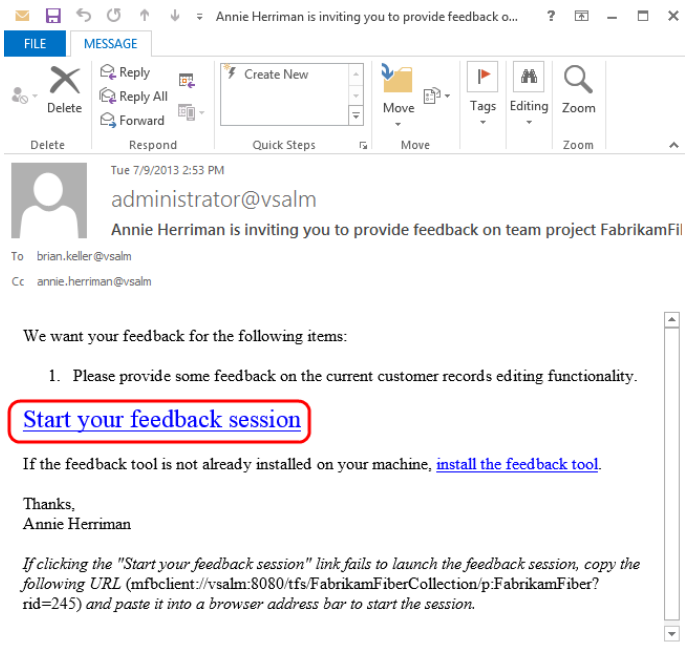
SharperSkills® TFS Training

Explanation

Brian Keller will now receive an email notifying him of the feedback request.

Steps to follow

81. Open **File Explorer** to **c:\inetpub\mailroot\drop**.
82. **Double-click** on the email to open it.
83. Click **Start your feedback session**.



<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

MODULE 4 – IMPROVING DEVELOPER PRODUCTIVITY

Team Explorer Overview

Most of the work of the Development Team at Fabrikam Fiber happens in the Team Explorer. In this section, we explore the latest features and capabilities.

Explanation

Let's logon as a Developer.

Steps to follow

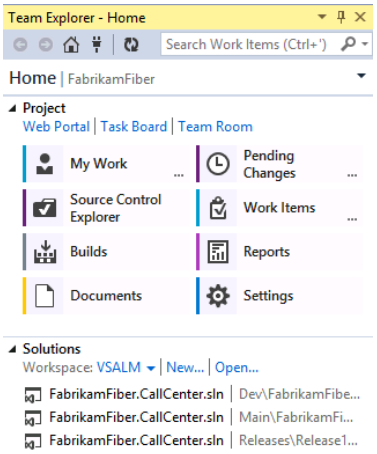
1. Log in as **Julia** with password of **P2ssw0rd**

Explanation

Let's open Visual Studio then open the Team Explorer. Note that in this version of TFS, tiles are used to navigate through TFS features and sections.

Steps to follow

2. Start Visual Studio Start | All Programs | Microsoft Visual Studio 2013.
3. Open the Team Explorer window from **View** | **Team Explorer** (unless it is already visible).
4. Follow your instructor to understand the contents of this window.

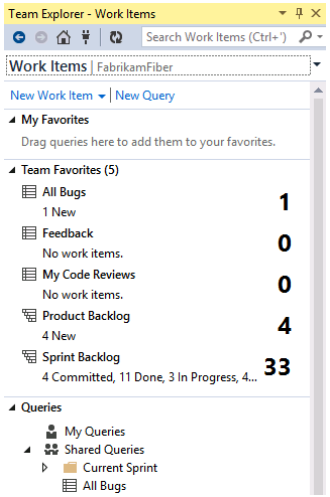


Explanation

Let's view the Work Items. This view shows your favorite queries, and provides the ability to add new queries and work items.

Steps to follow

5. Click on the **Work Items** link in *Team Explorer*.
6. Follow your instructor to understand the items in this view.
7. Click on the **Back** button to return to the home view.



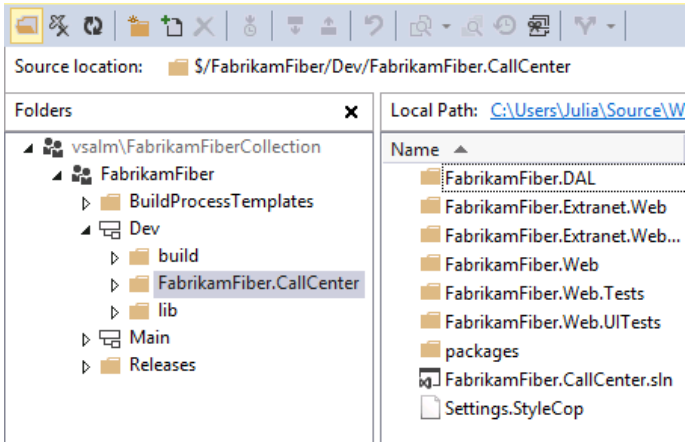
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Now let's open the Source Control view.

Steps to follow

8. Click on **Source Control Explorer**.
9. Select the **FabrikamFiber.CallCenter** folder.
10. Follow your instructor to understand this view.
11. **Close** the *Source Control Explorer*.

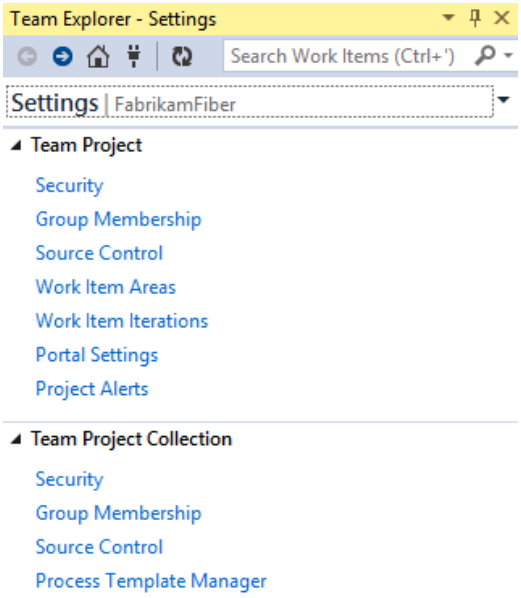


Explanation

Let's check the configuration of Team Explorer.

Steps to follow

12. Back in *Team Explorer*, click on **Settings**. The view should match the illustration.
13. Follow your instructor to understand these settings.
14. Make sure you click on **Cancel** every time you make a change.
15. Click **Back** to return to main view.



<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Local Workspaces

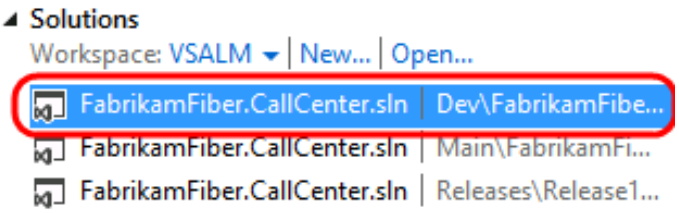
In previous versions, source control operations were only performed on the server, so working in a disconnected, offline scenario was not possible. With Team Foundation Server 2012, Local Workspaces were introduced to provide a client-centric workflow, a style of version control often described as **Modify-Merge-Commit**.

Explanation

Let's explore the our source files.

Steps to follow

16. In *Team Explorer*, **double-click** on the first *FabrikamFiber.CallCenter.sln* solution.
17. Follow your instructor. **Close** the window.

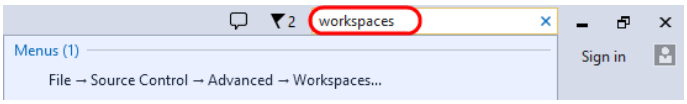


Explanation

Let's load the Manage Workspaces window.

Steps to follow

18. Type **workspaces** into the *Quick Launch* search box in the top-right corner of Visual Studio and wait for the results to load.
19. Click on the **Workspaces…** command.

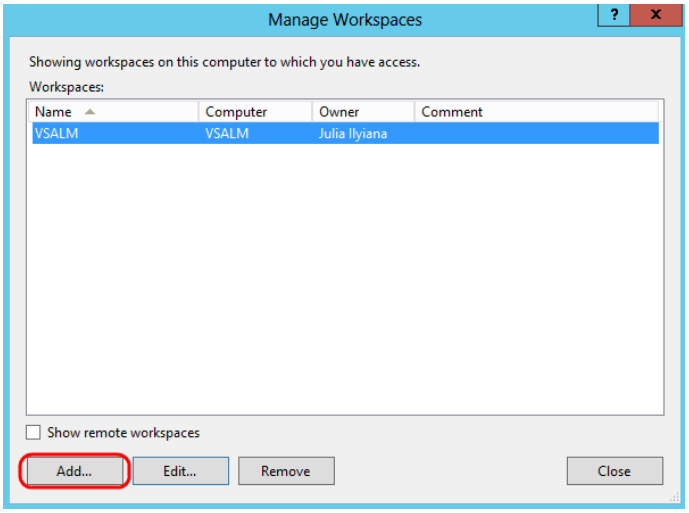


Explanation

Let's see where we can specify the options when creating a new workspace.

Steps to follow

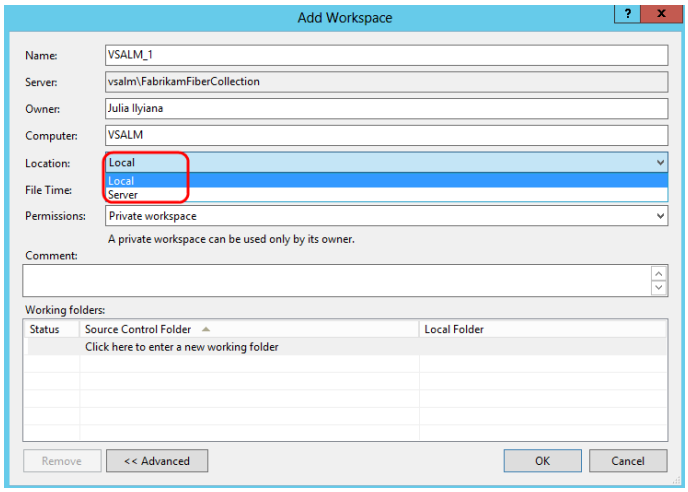
20. In the Manage Workspaces window, click **Add…** to create a new workspace.
21. Click on the **Advanced >>** button to see all options.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

When a new workspace is created, we have the option of creating the workspace on the local machine or on the server.

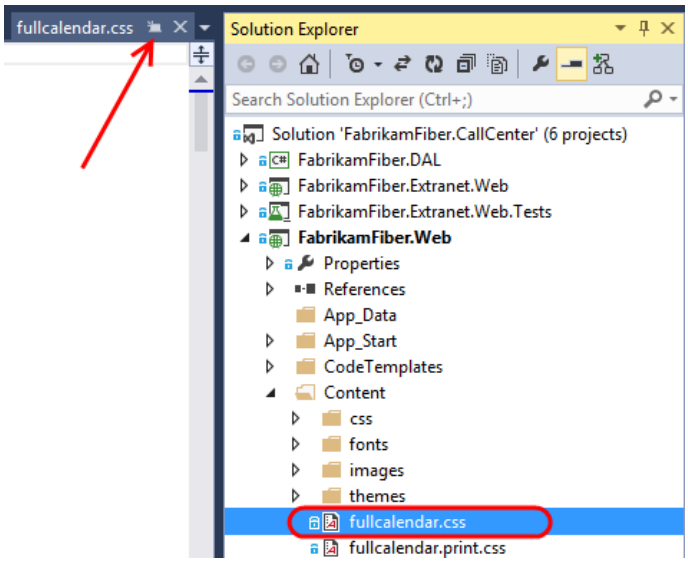


Steps to follow

22. By default, the location of a new workspace is on the local machine. Click on the *Location* dropdown to see that there is also a Server-side workspace option.
23. Click on the **Cancel** button
24. **Close** the *Manage Workspaces* window without creating a new workspace.

Explanation

Let's go back to Visual Studio and check a new feature: Preview Window.

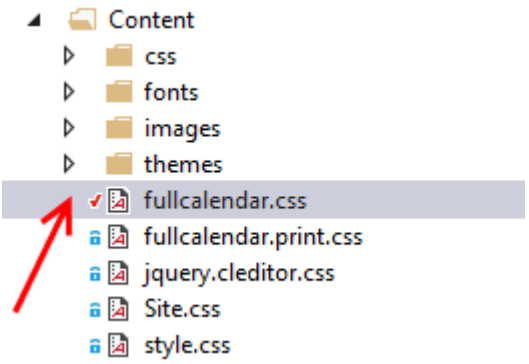


Steps to follow

25. In *Solution Explorer*, expand the **FabrikamFiber.Web** project and then the **Content** folder.
26. Single-click on **fullcalendar.css** to see its contents. Note the tab that appears on the right of the window, indicating that the file is open for read-only.
27. Use the arrow keys to navigate between files. Note the contents of the *Preview Window*.
28. Select the **fullcalendar.css** file and then click on the button in the tab as illustrated to open the file in Edit mode.

Explanation

Let's now make changes to the selected file. Note that this change has only happened to the local copy of the file, since it is using a local workspace.



Steps to follow

29. In the **fullcalendar.css** editor window, make a simple change. Follow your instructor.
30. Note the check mark next to the file in *Solution Explorer* indicating that the file is checked out.

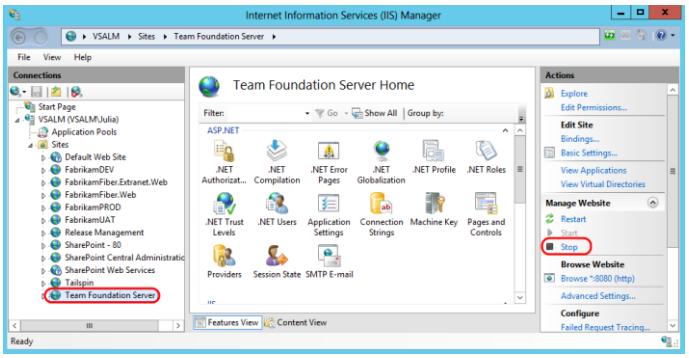
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

In order to prove that work is being done offline, let's stop the TFS service and continue working.

Steps to follow

31. Open IIS Manager by clicking **Start | Administrative Tools | Internet Information Services (IIS) Manager**, or by typing **IIS** in the search box.
32. Expand **VSALM | Sites | Team Foundation Server**.
33. Click on the **Stop** command to stop the service.

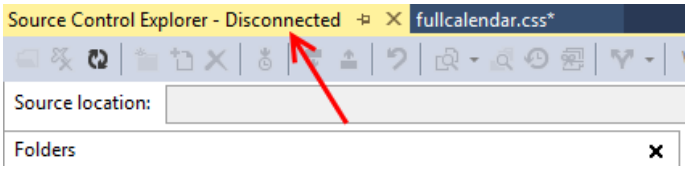


Explanation

Let's go back to Visual Studio and check the Source Control Explorer.

Steps to follow

34. In Visual Studio, load the **Source Control Explorer** window.
35. Click on the **Refresh** button. Note that the window is now in a disconnected state.



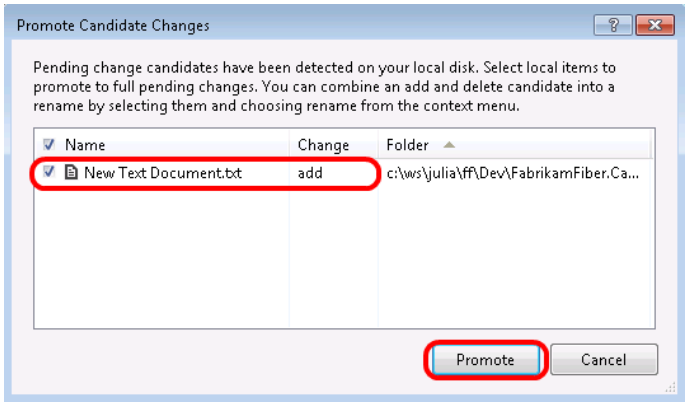
<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Pending Changes

Explanation

Let's add the text file to our source control. We do this with minimal clicks.

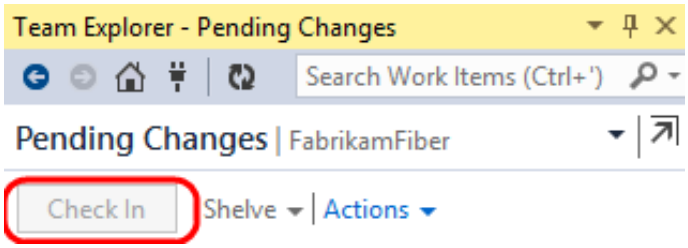


Steps to follow

36. In the *Promote Candidate Changes* window, check the **New Text Document.txt** checkbox.
37. Click on the **Promote** button to add this file to the *Included Changes* section.
38. Return to the *Pending Changes* view and note that the text file is now added.

Explanation

Let's try to check our changes into TFS. We can't do this while the service is offline.

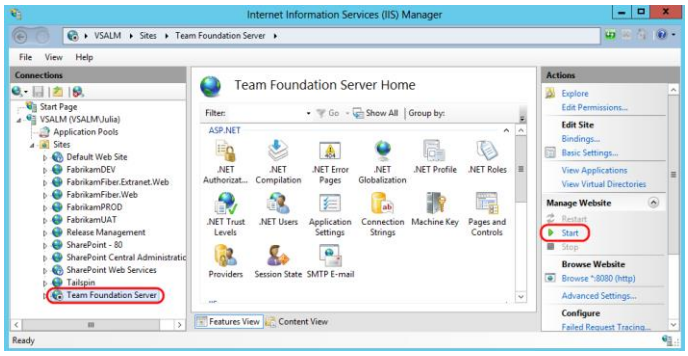


Steps to follow

39. Note that the *Check In* link is greyed out because Team Explorer is working offline.

Explanation

Let's restart TFS.



Steps to follow

40. Return to IIS Manager.
41. Start the *Team Foundation Server* service by clicking on the **Start** command.
42. Return to Team Explorer and click on the **Refresh** button to notice that the *Offline* text has disappeared and that the *Check In* link is now available.

NOTE: DO NOT CHECK IN THE PENDING CHANGES YET.

Suspend and Resume

In previous versions of Team Foundation Server, if a developer wanted to switch between tasks, s/he needed to use Shelvesets that would preserve their changes on the server. In Team Foundation Server 2013, this feature is improved with the Suspend and Resume feature. In addition to creating a shelveset of changes, some other data like breakpoints and tool window positions are also saved in the local workspace.

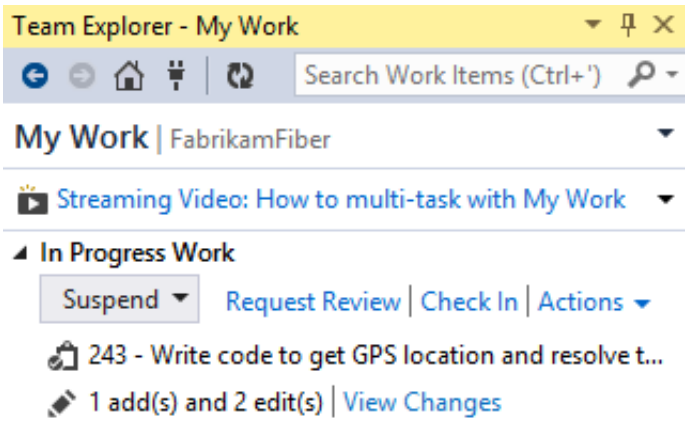
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's open the My Work view and see a summary of what's going on.

Steps to follow

43. Switch to **Team Explorer** | **My Work** view.
44. Under the *Work In Progress* section, note the **1 add(s) and 2 edit(s)** summary.

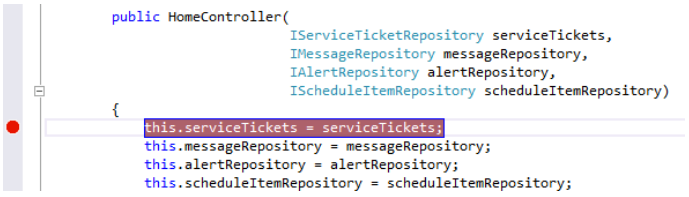


Explanation

Let's also set some breakpoint in code.

Steps to follow

45. In *Solution Explorer*, expand the **FabrikamFiber.Web** | **Controllers** folder.
46. Open the **HomeController.cs** file.
47. Add a breakpoint to the first line in the method.
48. Open the Immediate window from **Debug** | **Windows** | **Immediate**

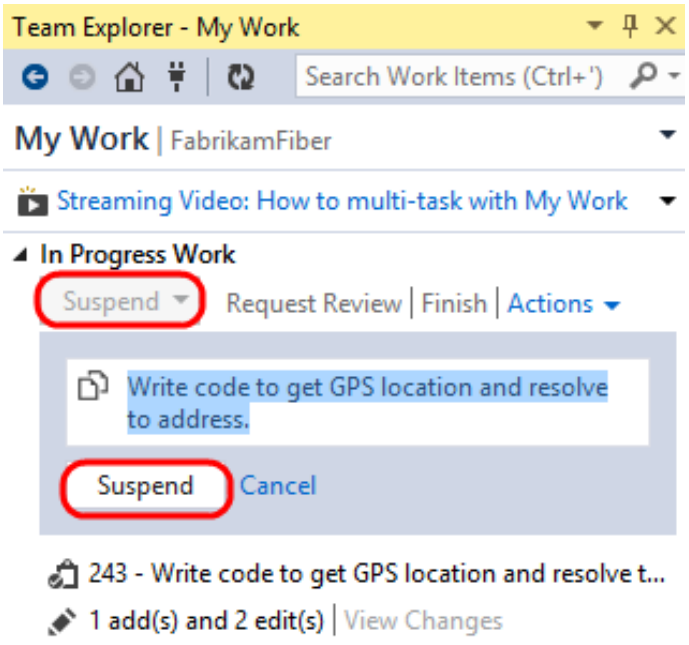


Explanation

If you are requested to stop working on this project and work on a bug fix, you spent considerable time in setting up the debugging windows and breakpoints.

Steps to follow

49. **Save All** changes. Remember that these changes are still on the local machine.
50. In the *My Work* view, click on the **Suspend** button.
51. **Enter a comment** like the one illustrated.
52. Click **Suspend**.
53. Clear out all breakpoints by pressing **Ctrl+Shift+F9**, and then select the **Yes** button to confirm the action.
54. Close all document windows by selecting **Window** | **Close All Documents** from the main menu.
55. Reset to the default window layout by selecting **Window** | **Reset Window Layout** from the main menu. Select **Yes** when asked to confirm the action.



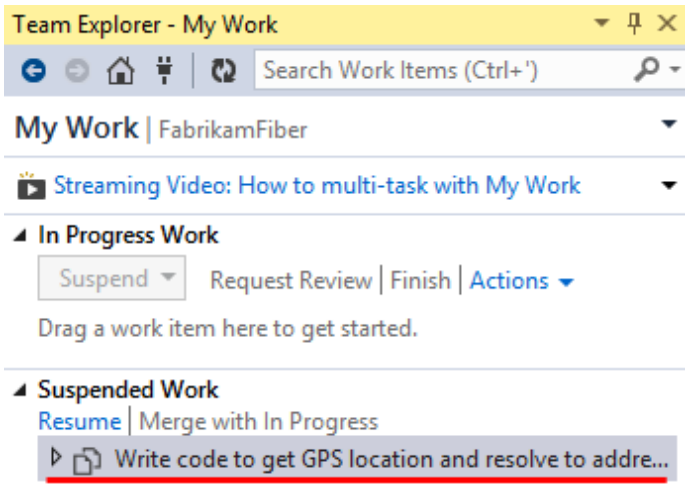
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Note that we have work that is suspended.

Steps to follow

56. In the *My Work* view, note the *Suspended Work*.

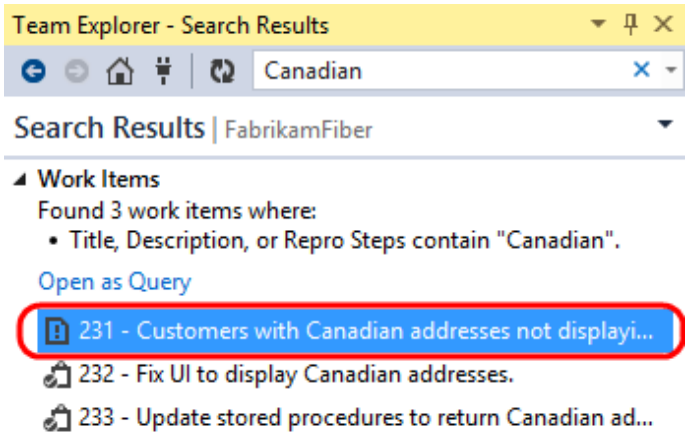


Explanation

Now we have switched work to fixing the bug. Our bug has the word Canadian in its contents

Steps to follow

57. In *Team Explorer*, type **Canadian** in the search box.
58. **Double-click** on the first bug to open it.



<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Merging Basics

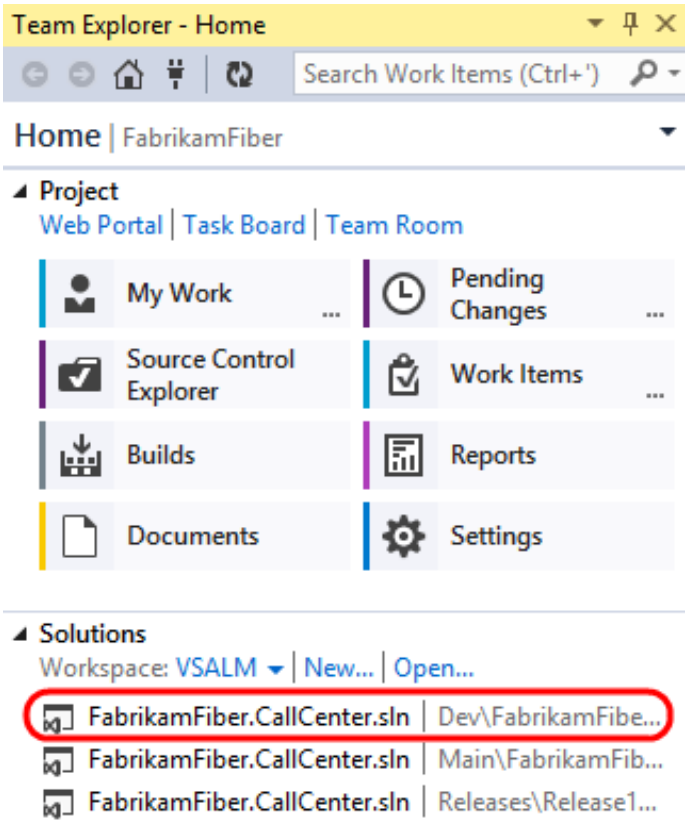
Julia made a change in the Site.css file and modified the body color to Red. Let's see what happens if Brian makes a change that may conflict with this change.

Explanation

Let's login as Julia once again and work on merging changes.

Steps to follow

59. **Switch** users back to **Brian Harry**. Keep *Julia* logged in.
60. Start **Visual Studio 2013**.
61. Open the **FabrikamFiber.CallCenter** solution from the **Dev** branch in *Source Control Explorer*.

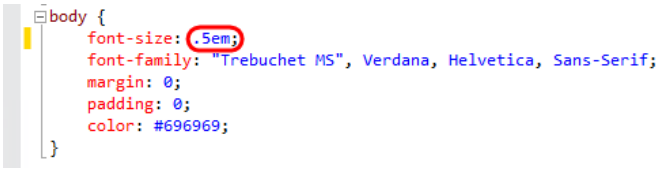


Explanation

First, let's make a change that does not conflict with Julia's changes. We need to check-in Brian's changes to TFS.

Steps to follow

62. In *Solution Explorer*, open the **FabrikamFiber.Web | Content | Site.css** file.
63. Change the body font-size property from .9em to **.5em**.
64. **Save** your changes.
65. Open the **Team Explorer | Pending Changes** view
66. Click **Check In**.



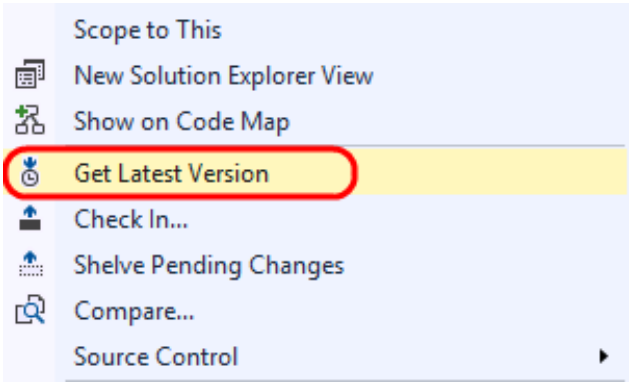
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's switch back to Julia and check-in her changes as well.

Steps to follow

67. **Switch** users to Julia. Keep *Brian* logged in.
68. In *Solution Explorer*, **right-click** on *Site.css* and select **Get Latest Version**.

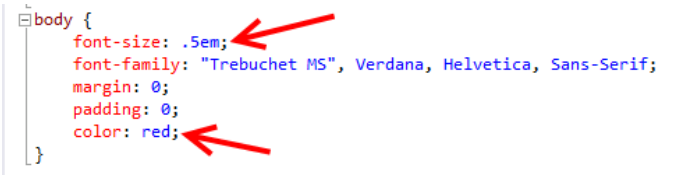


Explanation

Brian's change did not conflict with that of Julia. Whenever possible, Team Foundation Server 2013 and Visual Studio 2013 attempt to auto-merge changes, rather than needing the user to be involved with the merge process.

Steps to follow

69. Make sure *Site.css* file is open. If not, **open** it.
70. Note that Brian's changes have been automatically merged into Julia's changes.

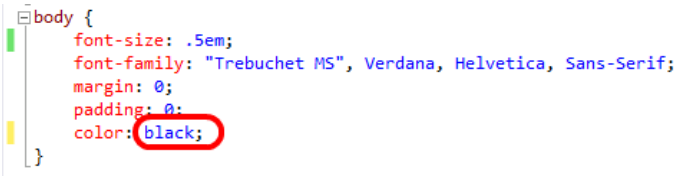


Explanation

This time, let's create a conflicting change. Julia had set the color to red. Let's set it to black.

Steps to follow

71. **Switch** users back as **Brian Harry**. Keep *Julia* logged-in.
72. In *Site.css*, change the body color property to **black**.
73. **Save** the changes.
74. **Team Explorer** | **Pending Changes** | **Check In**.

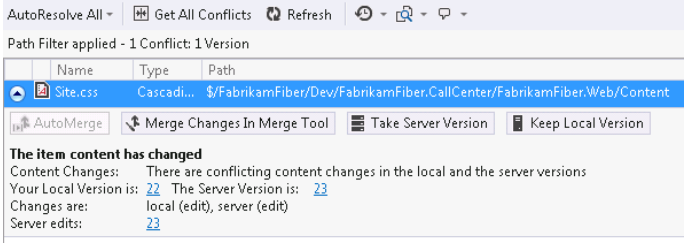


Explanation

Let's see what will happen if Julia attempts to check in her code. The moment Julia tries to get the latest version from TFS, she will get the Resolve Conflicts window.

Steps to follow

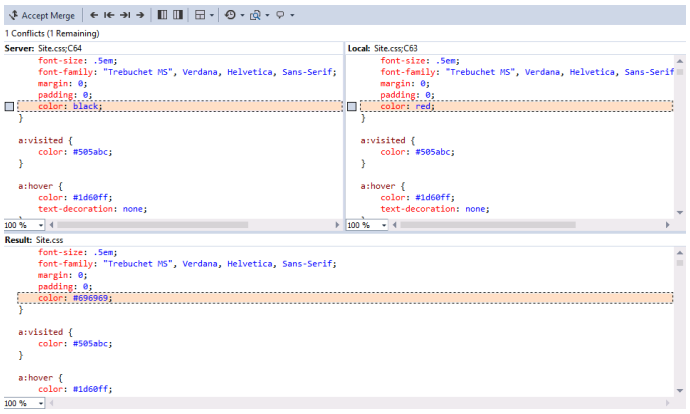
75. Switch to **Julia**. Leave *Brian* logged-in.
76. In *Solution Explorer*, **right-click** on *Site.css* and select **Get Latest Version**.
77. In the resulting *Resolve Conflicts* window, note the version numbers.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Visual Studio detected that there was a conflict that requires manual intervention. Let's fix this conflict. Where have we seen this window?



Steps to follow

78. Click on **Merge Changes In Merge Tool**.
79. If you are prompted to save and close *Site.css*, go ahead and click **Yes** to continue.
80. Follow your instructor to understand the contents of this view.

<Rest of module cut as this is only a preview>

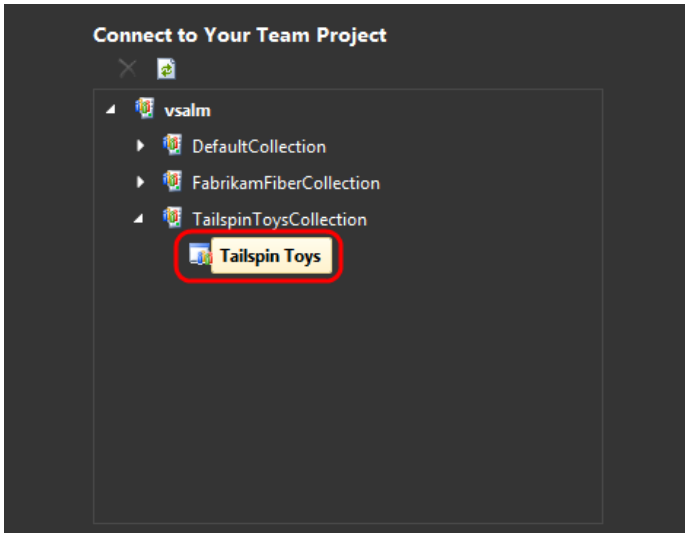
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

MODULE 5 – TESTING WITH TFS AND VISUAL STUDIO

Manual Testing using the Test Manager

Explanation

Test Manager allows us to plan tests, run them and compare results. In this exercise, we will use this tool to plan manual tests.

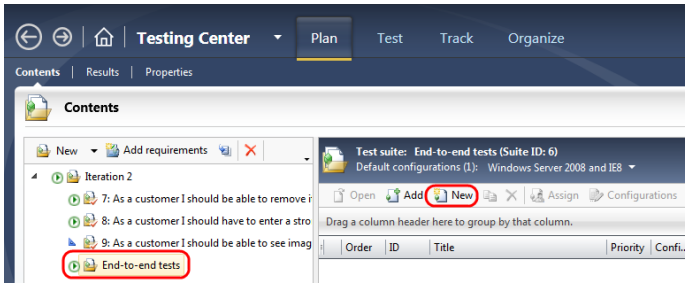


Steps to follow

1. Log in as **Julia**, password is **P2ssw0rd**
2. Start the Microsoft Test Manager from **Start | All Programs | Microsoft Visual Studio 2013 | Microsoft Test Manager**.
3. Select the **Tailspin Toys** Project and click on **Connect now**.
4. Select **Iteration 2** and click **Select plan**.

Explanation

Let's create a new end-to-end test plan.

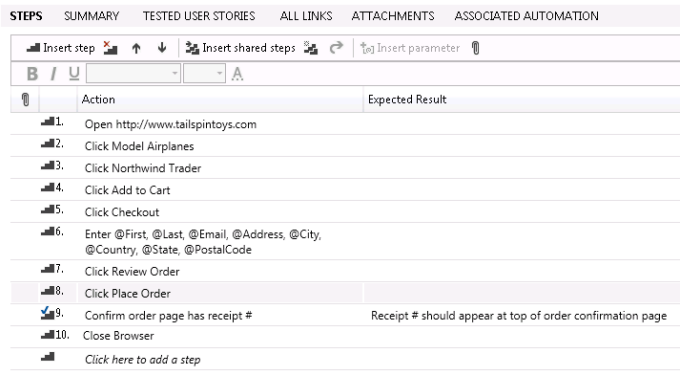


Steps to follow

5. Click on **End-to-End Tests**.
6. Click on the **New** button in the right pane.
7. In the *Title* box, type **Confirm that receipt number appears after successful order**.
8. Open **Desktop | Code Snippets | New Test Case.txt** file. You can copy the title from here.

Explanation

Let's add steps to the newly created test plan.



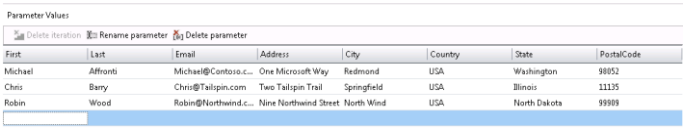
Steps to follow

9. Copy the plan from the *New Test Case.txt* file.
10. In Test Manager, select the first blank Action cell and press the **Escape** key so that the cell has dotted lines surrounding it, then **paste** in all steps using **Ctrl-V**.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Note the "Enter @First, @Last, @Email, @Address, @City, @Country, @State, @PostalCode" step. In this step, we used the @ sign to indicate iteration-specific variables to be used during the manual test.



Steps to follow

11. Scroll down to the *Parameter Values* section and enter the following values for each iteration.

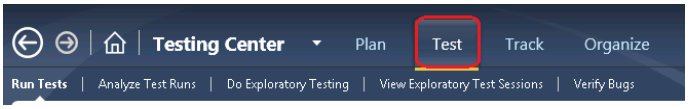
First	Last	Email	Address
Michael	Affronti	Michael@Contoso.com	One Microsoft Way
Chris	Barry	Chris@Tailspin.com	Two Tailspin Trail
Robin	Wood	Robin@Northwind.com	Nine Northwind Street

City	Country	State	PostalCode
Redmond	USA	Washington	98052
Springfield	USA	Illinois	11135
North Wind	USA	North Dakota	99909

12. **Save** the test case.
13. Your screen should look similar to this one.

Explanation

Let's run this manual test.

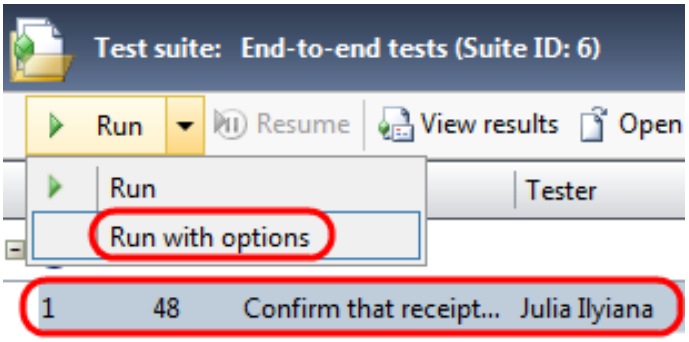


Steps to follow

14. Click the **Test** tab to enter test mode.
15. In the left pane, expand the tree to find the *End-to-End Tests* node and select it.

Explanation

Let's run the test with options.



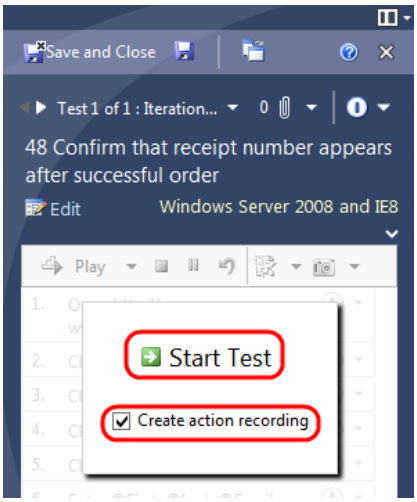
Steps to follow

16. In the right pane, select the test titled *Confirm that receipt number appears after successful order.*
17. Click the *dropdown* next to *Run* and select **Run with options**.
18. In the *Run Options* window, **change** the test settings to **Full Diagnostics** and click on **Run**.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

The Microsoft Test Runner is launched and provides the option to record the actions taken by the tester.

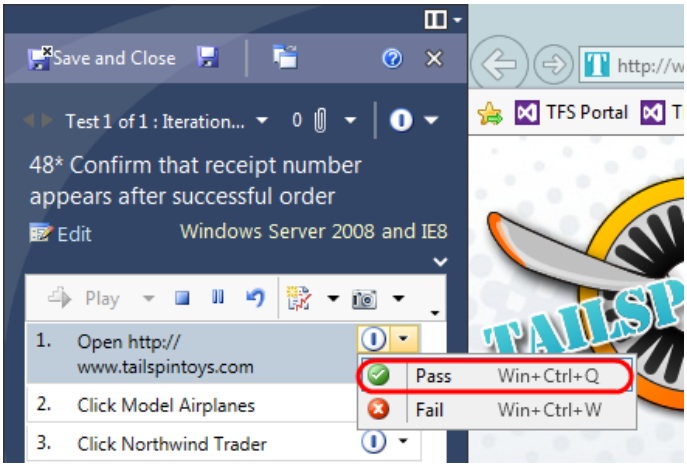


Steps to follow

19. **Check** the *Create action recording* box.
20. Click **Start Test**.
21. Wait until Test Runner has completed initialization and then launch **Internet Explorer**.
22. Click on the **Tailspin Toys** link from the *Favorites bar*. Wait for a few moments for the site to load and run.

Explanation

Tailspin Toys site has loaded successfully. Let's mark this step as a success. Although it's not a requirement to pass or fail test steps other than those that require validation (such as with "expected results"), but it does help when correlating tester actions with steps.



Steps to follow

23. Back in *Test Run*, select the **Pass** option from the test result dropdown next to the current step. Note that when you pass a test, it automatically sets the next step as active.
24. In *Internet Explorer*, click the **Model Airplanes** button and **pass** the step if successful.
25. Click the **Northwind Trader** link and **pass** the step if successful.
26. Click the **Add To Cart** button and **pass** the step if successful.
27. Click the **Checkout** button and **pass** the step if successful.

<Rest of module cut as this is only a preview>

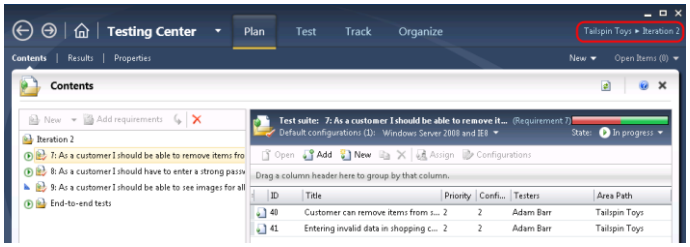
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Introduction to Platform Testing

It is also important to create platform configurations that apply to certain test cases. In this part of the training, we will learn how to manage such configurations and assign them to test cases.

Explanation

Let's load the Test Manager.

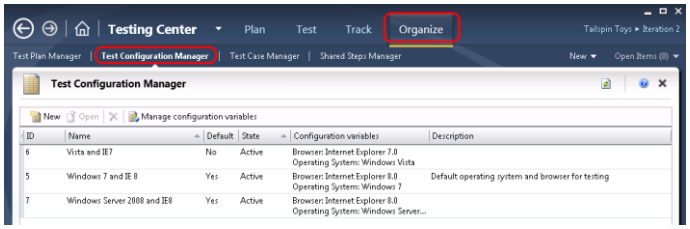


Steps to follow

28. Logon as **Julia**.
29. If Test Manager is not open, click **Start** | **All Programs** | **Microsoft Visual Studio 2013** | **Microsoft Test Manager**.
30. Open **Iteration 2**.

Explanation

Let's create a new test configuration.

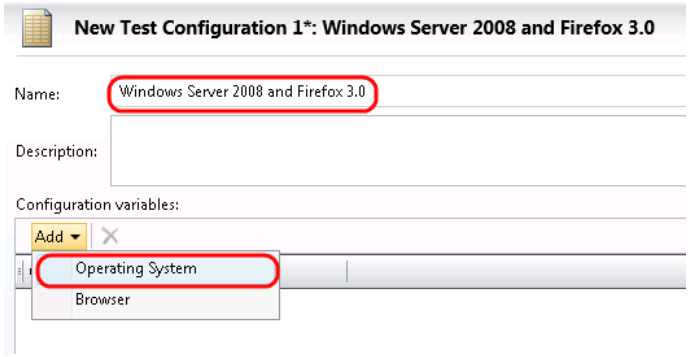


Steps to follow

31. Click the **Organize** tab.
32. Click the **Test Configuration Manager** link.
33. Click the **New** button to create a new test configuration.

Explanation

Here we enter the details of the configuration. We will use Windows Server 2008 for the operating system and Firefox 3.0 for the browser.



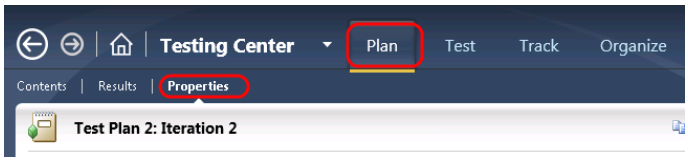
Steps to follow

34. Type **Windows Server 2008 and Firefox 3.0** for the Name.
35. In the *Configuration variables* grid, Click the **Add** dropdown box and select **Operating System**.
36. Change the default *Windows 7* value to **Windows Server 2008**.
37. Click on the **Add** dropdown box again and select **Browser**.
38. Change the Browser value to **Firefox 3.0**.
39. Click **Save and Close**.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's go back to the test plan.

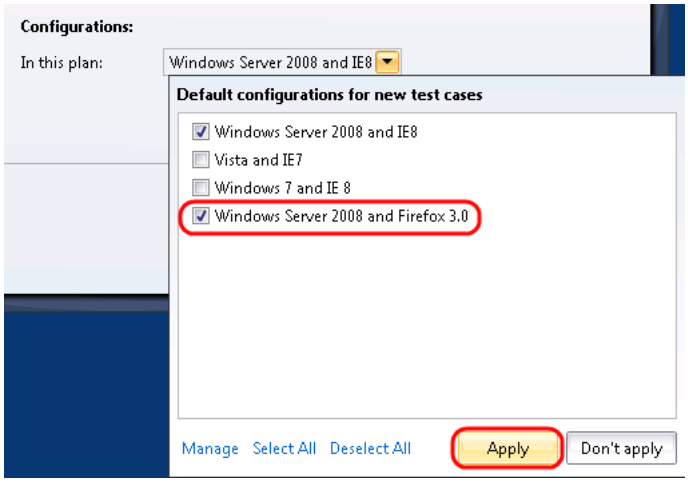


Steps to follow

40. Click the **Plan** tab.
41. Click the **Properties** link to view the test plan properties for Iteration 2.

Explanation

Let's make sure that the new configuration is applicable to this test plan.

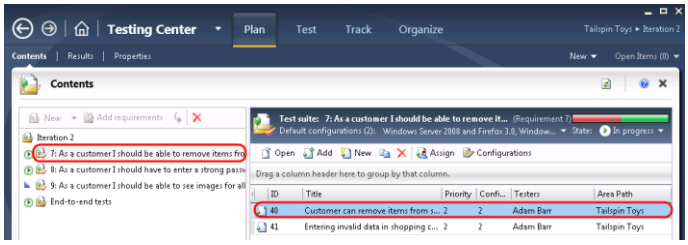


Steps to follow

42. Locate the *Configurations* section and click the dropdown box to view all available platform configurations.
43. Check the box next to our newly created configuration.
44. Click **Apply** to apply the changes.
45. Click **Save and Close**.

Explanation

Let's now assign this configuration to a test plan. First we need to find the test case to which we want to assign this configuration.



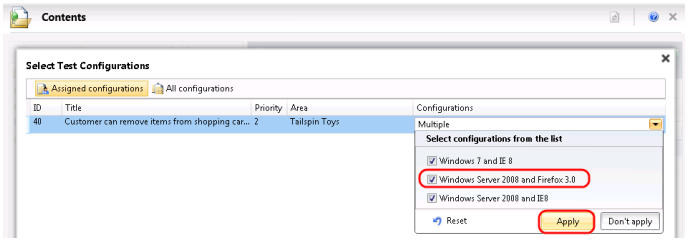
Steps to follow

46. Click the **Contents** link to open the plan contents window.
47. Select **Test suite: 7** to view its test cases.
48. Select test case with ID = **40**, titled **Customer can remove items from shopping cart by clicking "X" icon**.
49. Click the **Configurations** button.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Next, we will assign the configuration.

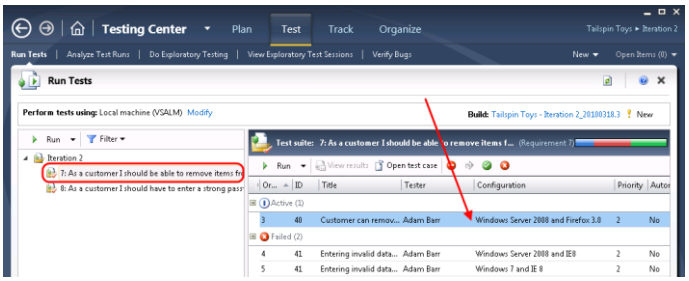


Steps to follow

50. Click the **Configurations** drop down for the test case, then select the **Windows Server 2008 and Firefox 3.0** option
51. Click **Apply**.
52. Click the **Close** button.

Explanation

Let's now run the tests and see the results. Notice that there is now a new case that has not been run.



Steps to follow

53. Click **Test** | **Run Tests**.
54. Select **Test suite: 7** to view the assigned test cases. As expected, note that there is a new active test case permutation with the new Windows Server 2008 and Firefox 3.0 configuration.

<Rest of module cut as this is only a preview>

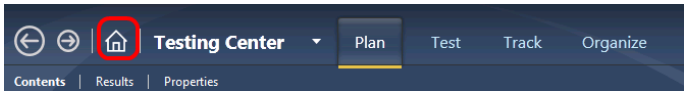
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Introduction to Exploratory Testing (XT)

In this exercise, you will learn about a new feature in Microsoft Test Manager 2013 called Exploratory Testing (also called XT, or agile testing). XT allows a tester to flexibly test the underlying software without relying solely on formal test cases. Meanwhile, Microsoft Test Manager will continue to capture rich diagnostics about the application being tested. Such diagnostics can be delivered to the development team if a bug is discovered. You'll also learn about some of the other fit-and-finish features in Microsoft Test Manager, such as the ability to use rich text when authoring test cases.

Explanation

Let's logon as Adam, the tester. Microsoft Test Manager will connect to the team project that was last in use on startup. We need to connect to a different project.

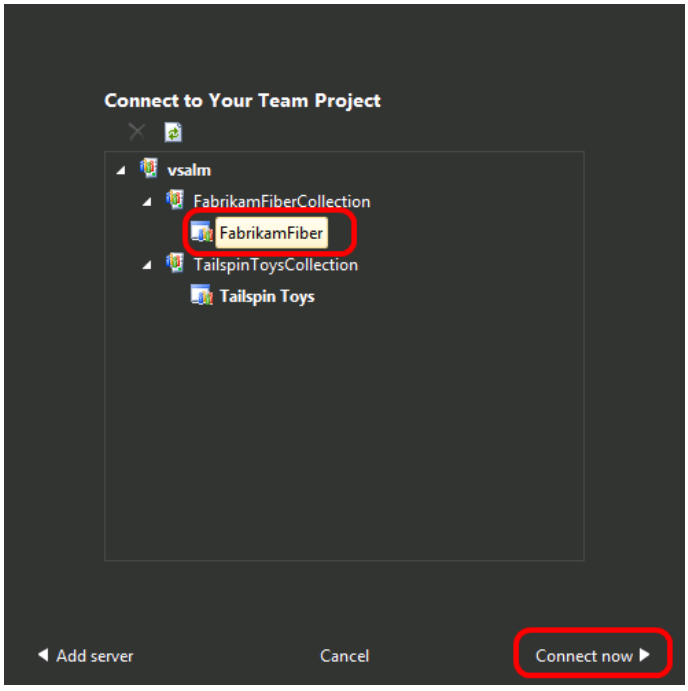


Steps to follow

55. Log in as **Adam** with password **P2ssw0rd**
56. Click **Start** | **All Programs** | **Microsoft Visual Studio 2013** | **Microsoft Test Manager**.
57. Click **Home** to select a different project.

Explanation

Let's connect to the FabrikamFiber project and create a new Test Plan.



Steps to follow

58. Click on the Change Project link.
59. Select the **VSALM** | **FabrikamFiberCollection** | **FabrikamFiber** node.
60. Click **Connect Now**.
61. If prompted to close all open items, do so.
62. In *Testing Center*, click **Add** to create a new test plan.

Explanation

Let's enter the details of the new Test Plan.

Steps to follow

63. Enter **Exploratory Testing** for as the name.
64. Click **Add**.

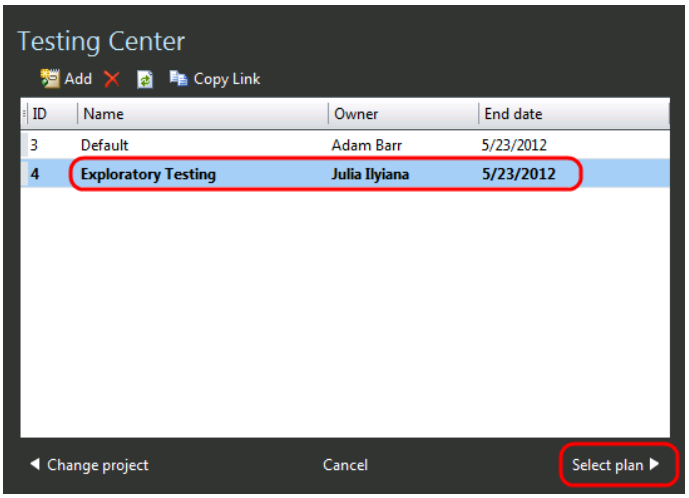
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's select Exploratory Test as the current test plan.

Steps to follow

65. Make sure **Exploratory Testing** is selected.
66. Click the **Select Plan** link.

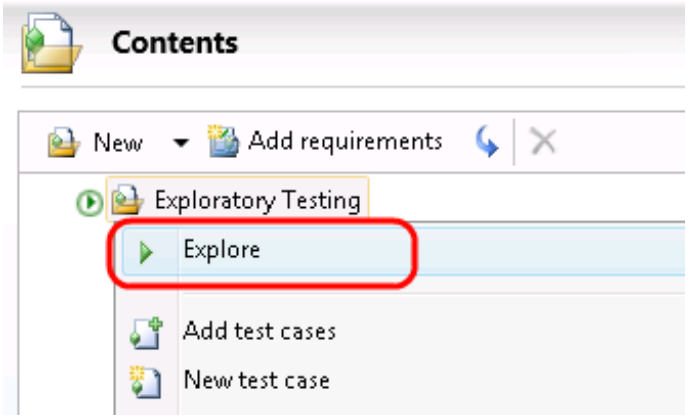


Explanation

Let's inform Test Manager that we're using Exploratory Testing for this test.

Steps to follow

67. **Right-click** on *Exploratory Testing* and select **Explore**.
68. Don't start the test just yet.

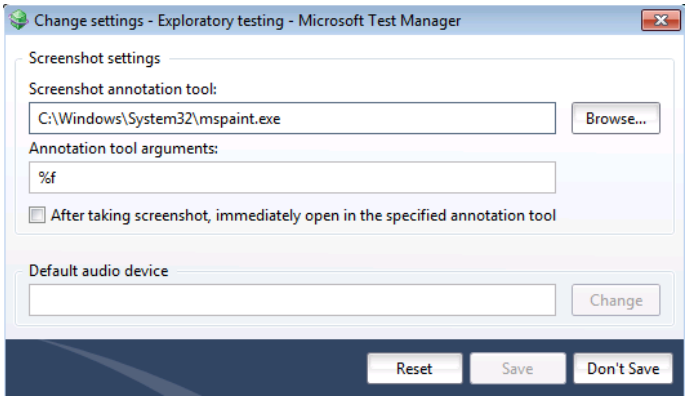


Explanation

Note that we can modify screenshot settings and select an audio recording device here. Since this virtual machine does not support audio, we will not attempt to make a selection. Let's start the test.

Steps to follow

69. Click on the **Settings** button in the bottom-right corner of test runner window. Follow your instructor to understand the options.
70. Click **Don't Save** (keyboard shortcut: Esc).
71. **Start** the test.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

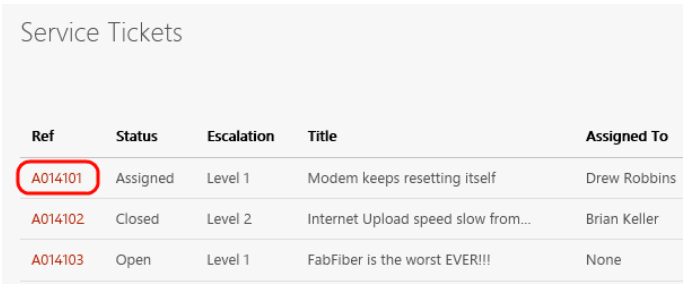
Let's open a browser to the FabrikamFiber portal. We will open one of the service tickets.

Steps to follow

72. Launch **Internet Explorer**.
73. Click the **FF Intranet Portal** link in the favorites bar.
74. Click the **Tickets** link to view all the service tickets.

Explanation

Let's view the first service ticket.



Steps to follow

75. Click on the link next to the Ref of the first row.
76. Note that the *Created By* and *Assigned To* columns currently show appropriate values.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Unit Testing, Code Coverage and Code Clone Analysis

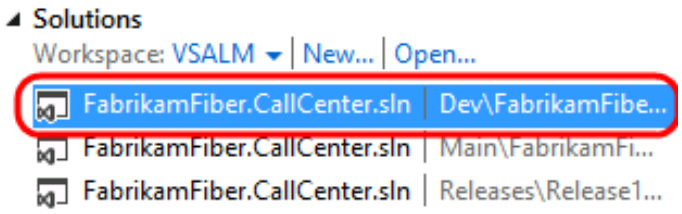
Detecting and fixing bugs early on in the Software Lifecycle helps reduce costly fixes later on. By focusing our attention on a single unit of operation, we can easily find deficiencies in our code and rectify them. Hence the word Unit Testing.

Explanation

Let's start by opening the project.

Steps to follow

77. Make sure you're logged in as **Julia**.
78. Start **Visual Studio 2013** if not done already.
79. Open the **FabrikamFiber.CallCenter.sln | Dev**

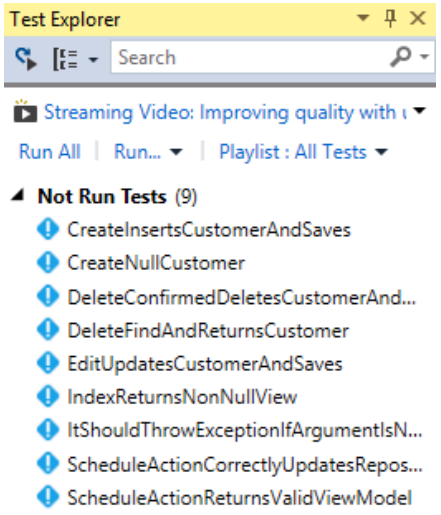


Explanation

Let's kick-off by running existing unit tests.

Steps to follow

80. Click **Test | Windows | Test Explorer**.
81. Note that there are tests that have not been executed yet. *Not Run Tests (9)*.
82. Click on **Run All**.



Explanation

Let's open one of the passed test code to see the results.

Steps to follow

83. Under *Passed Tests*, double-click on **CreateInsertsCustomerAndSaves** to open the source code.
84. Note the [TestMethod()] attribute that identifies this method as a Unit Test method.

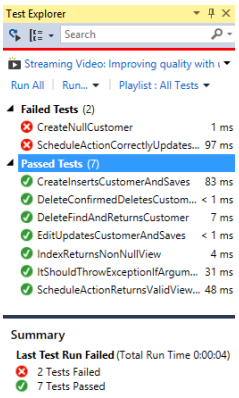
```
[TestMethod()]
0 references | Julia Ilyiana | 1 change
public void CreateInsertsCustomerAndSaves()
{
    controller.Create(new Customer());

    Assert.IsTrue(mockCustomerRepo.IsInsertOrUpdateCalled);
    Assert.IsTrue(mockCustomerRepo.IsSaveCalled);
}
```


This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Note that the tests are grouped by outcome and that the execution times are recorded. Let's run the tests again. Timing on your screen may defer from the illustration.

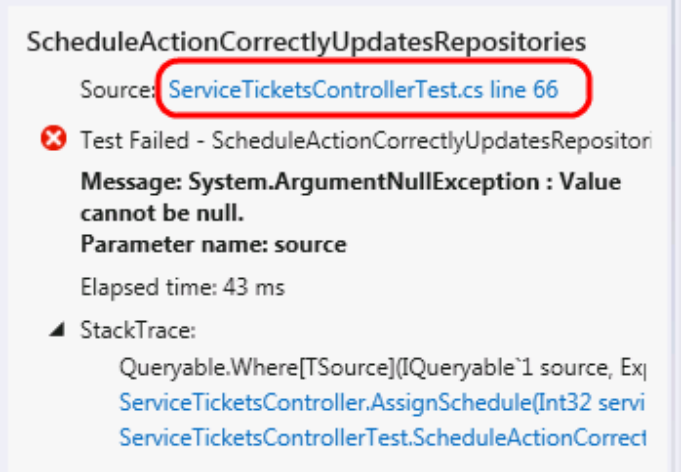


Steps to follow

85. Take note of the execution times.
86. In *Test Explorer*, click on **Run… | Repeat Last Run**.
87. Note the difference in execution time.

Explanation

The second time we ran the tests, tests were faster. Let's see what caused the failed test.



Steps to follow

88. Single-click on the **Failed** test to see a summary of the results.
89. Follow your instructor to understand the contents of this window.
90. Click on the **Source link** to open the source code.

<Rest of module cut as this is only a preview>

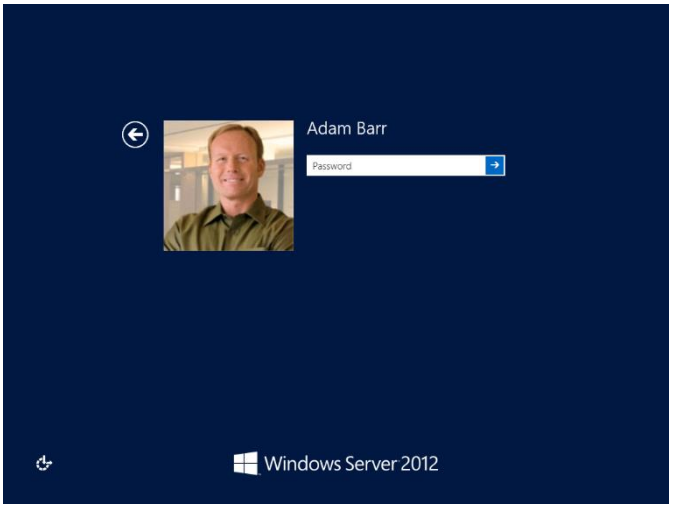
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Web Performance and Load Testing

Visual Studio and TFS provide tools that test the performance of a website, as well as simulate a load test. In this section of the training, we will learn how to use these tools.

Explanation

Let's logon as Adam Barr, the tester.

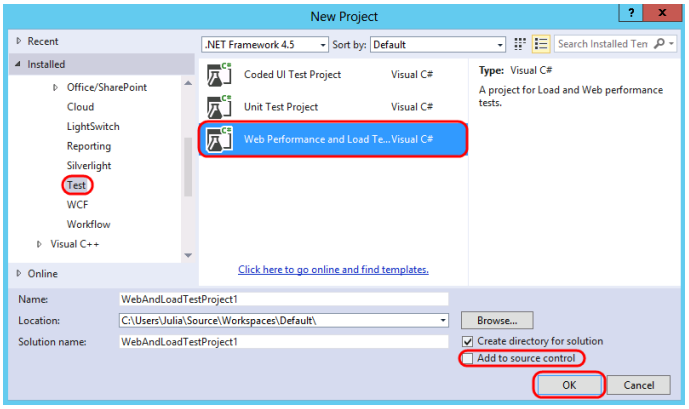


Steps to follow

91. Log in as **Adam Barr** with password **P2ssw0rd**
92. Click **Start** | **All Programs** | **Microsoft Visual Studio 2013** | **Visual Studio 2013**.

Explanation

Let's create a new Project to hold the web performance test. Once we're ready, let's start recording our activities.

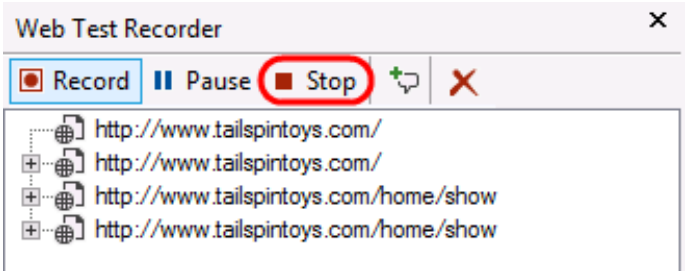


Steps to follow

93. In *Visual Studio*, create a **New Project**.
94. Select **Visual C#** | **Test** | **Web Performance and Load Test Project**.
95. Leave the name of the project as is.
96. Click **OK** to create the project.
97. Click the **Add Recording** button at the top of the Web Performance Test Editor to start recording.

Explanation

Internet Explorer will run with the Web Test Recorder. We will play the role of a customer browsing the site by clicking on a few products and drilling into product details.



Steps to follow

98. Click on the **Tailspin Toys** button from the favorites bar.
99. Click on the **Model Airplanes** button.
100. Click on the **Fourth Coffee Flyer** link.
101. Click on the **Trey Research Rocket** from the *You Might Also Like* section.
102. Click **Stop** to stop the recording. Note the actions.

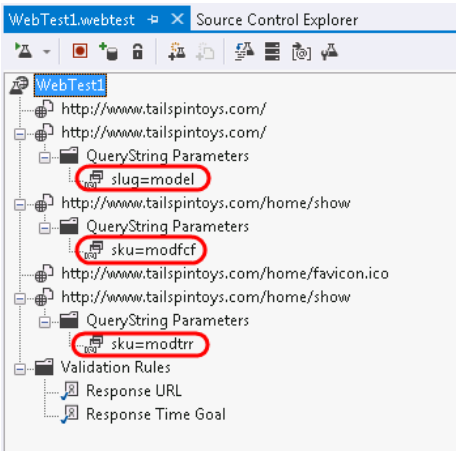
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's review the results of the test recording.

Steps to follow

103. Wait until all results of the test are captured. Note that Visual Studio is detecting dynamic parameters.
104. Expand some of the nodes and note the QueryString Parameters that were captured.

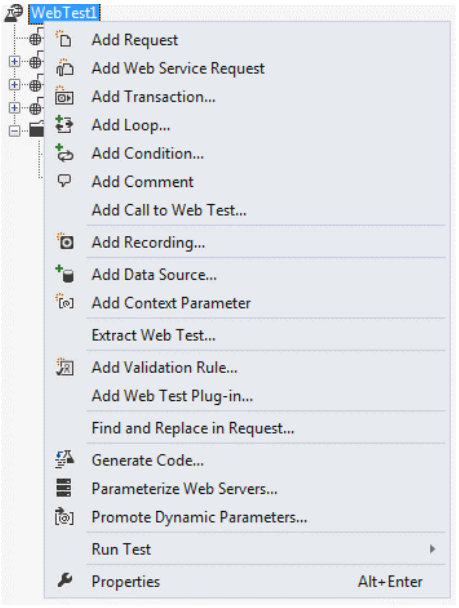


Explanation

There are other ways to add steps to this test.

Steps to follow

105. **Right-click** on *WebTest1* and see the list of commands.
106. Follow your instructor to understand some of the features.

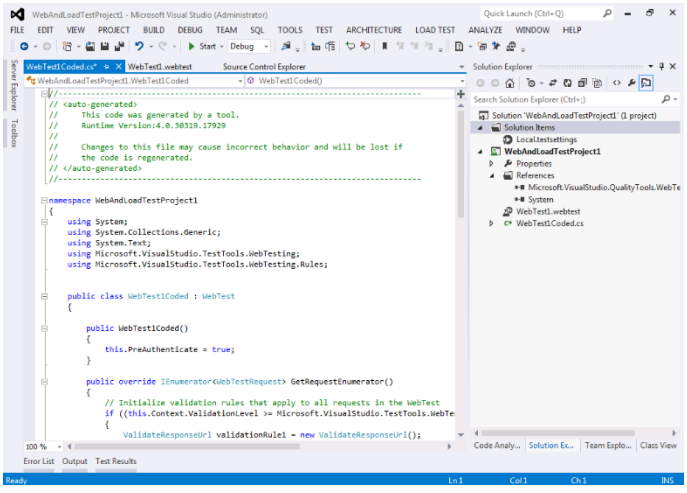


Explanation

It is also possible to generate code that represents this test.

Steps to follow

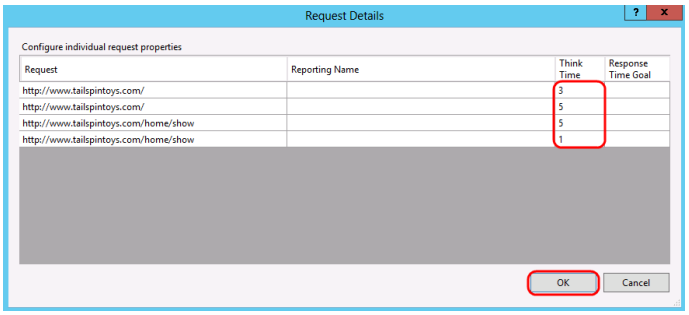
107. From the context menu, select **Generate Code**.
108. Follow your instructor.
109. Exclude this code from the project as it's not part of our training.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Time taken between steps in the web test is known as Think Times. Let's explore some of them. Let's also make sure that the total think time does not exceed 15 seconds.

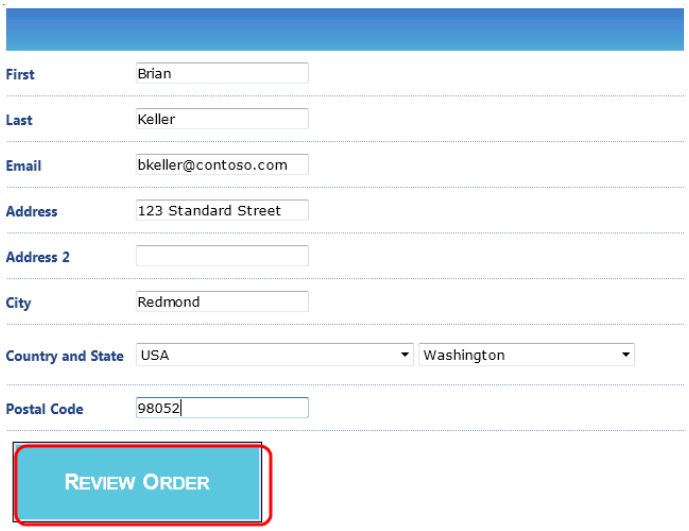


Steps to follow

110. In *Solution Explorer*, rename *WebTest1.webtest* to **Browsing.webtest**.
111. Click the **Set Request Details** button from the toolbar to open the *Request Details* window.
112. Change *Think Times* to match illustration.
113. Click **OK**.

Explanation

Now let's add in another web test to represent a customer that browses and purchases a product from the Tailspin Toys website.



Steps to follow

114. From the menu, click **Project | Add Web Performance Test**.
115. Navigate to **Tailspin Toys**.
116. Click on the **Paper Airplanes** button.
117. Click on the **Wingtip Toys Stunt Plane** link.
118. Click on the **Add To Cart** button.
119. Click on the **Checkout** button.
120. Fill the form as illustrated. Click **Review Order** when done.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Coded-UI Testing

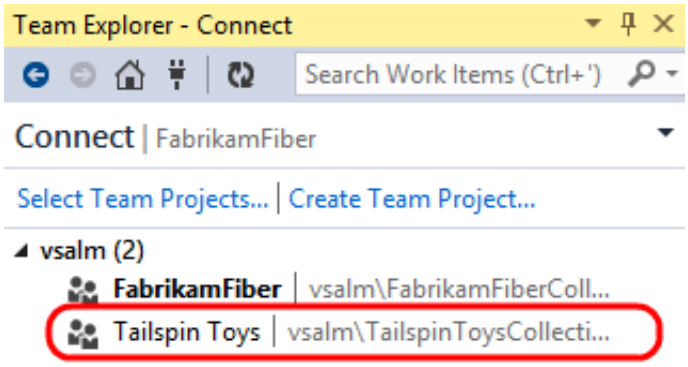
Coded UI tests create fully automated tests to validate the functionality and behavior of your application's user interface.

Explanation

Let's begin by opening an existing project.

Steps to follow

121. Log in as **Julia** with password **P2ssw0rd**
122. Start **Visual Studio 2013**.
123. Click **Connect to Team Foundation Server…**
124. Connect to the **TailspinToysCollection**.

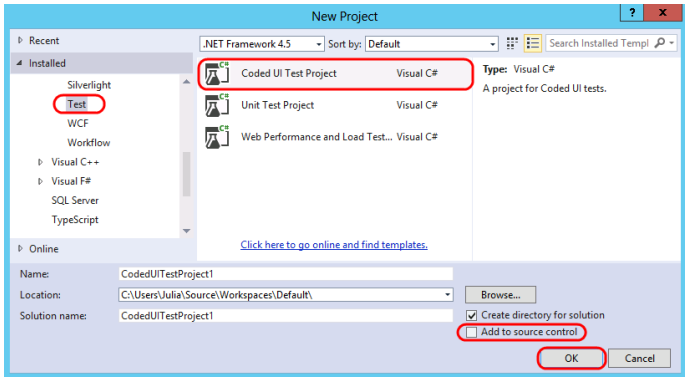


Explanation

Now we need to create a Testing Project. We will use the built-in Coded UI Test template.

Steps to follow

125. Click **File | New | Project…**
126. Select **Visual C# | Coded UI Test Project**.
127. Leave the default name and click **OK**.

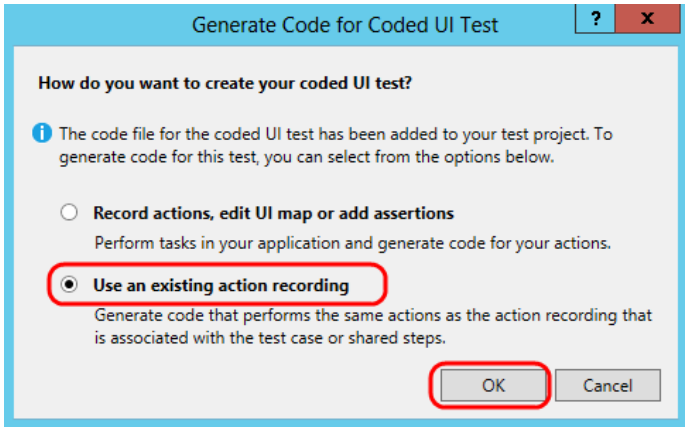


Explanation

There are two ways to generate code for this coded UI test. The first and default option is to use the **Coded UI Test Builder**, which allows you to generate test code by manually walking through a test scenario. The second option is to use an existing action recording. We will use the recordings from a previous step.

Steps to follow

128. Select the **Use an existing action recording** option.
129. Click **OK**.



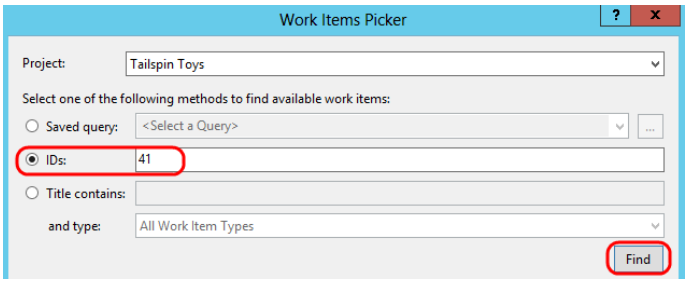
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

The test recording is associated with Work Item 41. Let's get the recording.

Steps to follow

130. In the *Work Items Picker* window, select the **Tailspin Toys** project.
131. Select the **IDs** radio button and Type **41**.
132. Click **Find**.
133. Make sure the Test Case is selected and click **OK**.

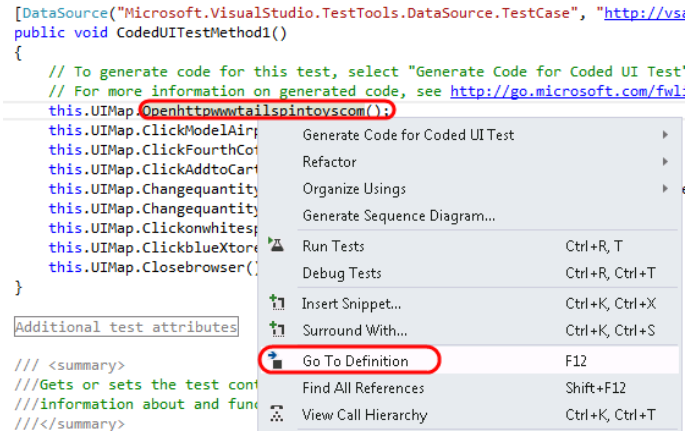


Explanation

Code has been generated for our test. Let's review it.

Steps to follow

134. In *Solution Explorer*, open the **CodedUITest1.cs** file.
135. Scroll to find the **CodedUITestMethod1** method.
136. **Right-click** on the first method call and select **Go To Definition**. This will load the *UIMap* class from the *UIMap.Designer.cs* file, which contains the generated test logic. This generated method launches Internet Explorer and navigates to a specified URL.



Explanation

Let's review the ClickFourthCoffeeFlyer method. Notice that it simulates a click on the Fourth Coffee Flyer hyperlink.

Steps to follow

137. Scroll down to the **ClickFourthCoffeeFlyer** method. Note the call.
138. Note that the test method does not specify the parameters directly, instead refers to the *UIBlank…UIFourthCoffeeFlyerHyperlink* property.
139. **Go to Definition** of *UIFourthCoffeeFlyerHyperlink*
140. **Close** *UIMap.Designer.cs* to return to *CodedUITest1.cs*

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

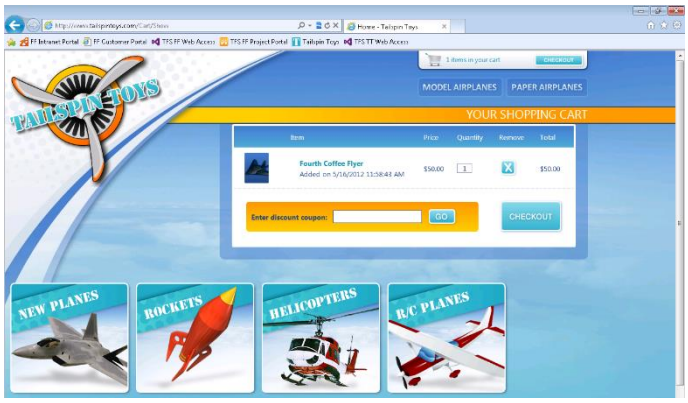
Explanation

Let's now run the tests. Note that we're not validating any of the results.

Steps to follow

141. **Right-click** in an empty area within *CodedUITest1.cs* and select **Run Tests**. Wait until the tests complete.
142. Verify that the test passed by viewing the *Test Explorer* window.

IMPORTANT! Do not touch the mouse or keyboard during the tests.



Explanation

Let's add additional steps to this test. In preparation, let's navigate to the Tailspin Toys website.

Steps to follow

143. Start **Internet Explorer** and navigate to **Tailspin Toys**.
144. Click the **Model Airplanes** link.
145. Click the **Fourth Coffee Flyer** link.
146. Click the **Add To Cart** link.
147. In *CodedUITest1.cs*, locate the *CodedUITestMethod1* method and add a blank line after the call to the *this.UIMap.Clickonwhitespaceinwebsite* method.

```
this.UIMap.Openhttpwwwtailspintoyscom();
this.UIMap.ClickModelAirplanes();
this.UIMap.ClickFourthCoffeeFlyer();
this.UIMap.ClickAddtoCart();
this.UIMap.ChangequantitytoNewQuantityParams.UIQuantityEditText
this.UIMap.ChangequantitytoNewQuantity();
this.UIMap.Clickonwhitespaceinwebsite();

this.UIMap.ClickblueXtoremoveitemfromcart();
this.UIMap.Closebrowser();
```

Introduction to Lab Management

In this section of the training, we will the create a standard environment, which allows existing test environments to be added into Lab Management, with no infrastructure prerequisites and no configuration needed in Team Foundation Server.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

MODULE 6 – BRANCHING, MERGING AND OTHER ADVANCED TOPICS

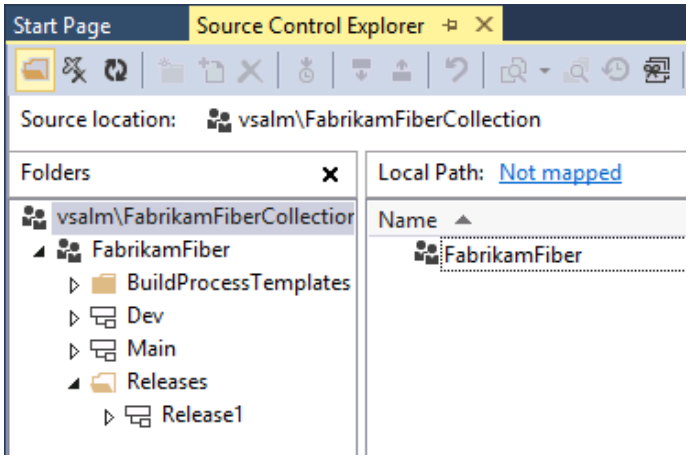
In this module, we will learn about some of the advanced features and capabilities of TFS, such as Merging, visualization and report customization.

Branching and Merging Visualization

In this section of the training, we will learn how to visualize the branching and merging activities.

Explanation

The FabrikamFiber solution contains a main code base, a development branch, as well as release branches.

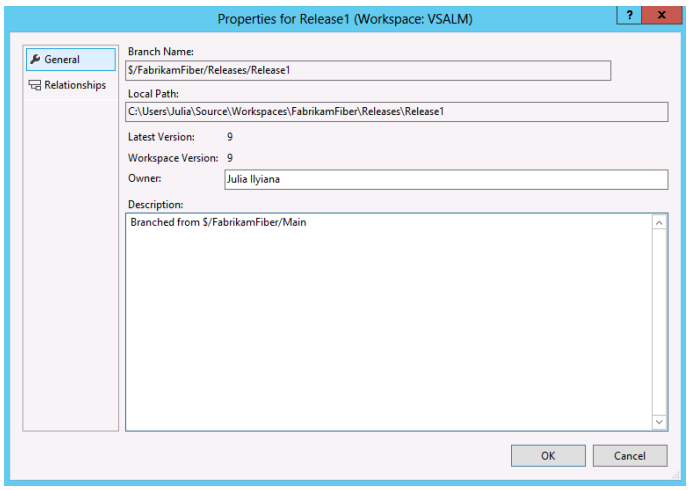


Steps to follow

1. Log in as **Julia** with password **P2ssw0rd**
2. **Start** *Visual Studio 2013*.
3. Open **Source Control Explorer**.
4. **Expand** the *FabrikamFiber* nodes. Note the icon.

Explanation

Every branch has its own version number, description, relationships and permissions. Let's look at one of them.



Steps to follow

5. **Right-click** on *Release1* select **Advanced | Properties**.
6. Note the general details like version and description, hierarchical relationship to other branches, and permissions.
7. Click **Cancel**.

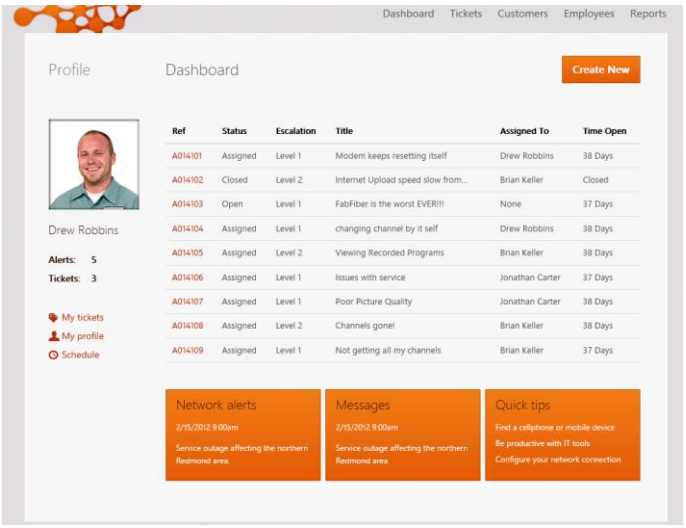
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

The Release 1 branch represents code that is running in production today. Let's open and run it.

Steps to follow

8. Expand *Release1* | *FabrikamFiber.CallCenter* and **double-click** on **FabrikamFiber.CallCenter.sln**.
9. From the menu, click **Build** | **Rebuild Solution**.
10. **Right-click** on *FabrikamFiber.Web* and select **Set as StartUp Project**.
11. Press **F5** to run the project.
12. Note that the links at the bottom are not functional.



Explanation

Management has decided to remove the non-functional links at the bottom of the page from the production environment. Let's "fast track" this change.

Steps to follow

13. **Close** *Internet Explorer* and return to Visual Studio.
14. In *Solution Explorer*, open **Release 1** | **FabrikamFiber.Web** | **Views** | **Shared** | **_Profile.cshtml**.
15. **Comment out** the *My tickets* link through the Schedule link as illustrated.
16. Press **Ctrl+F5** to launch the website and verify that the non-functional links are no longer displayed.
17. **Close** *Internet Explorer* and return to **Visual Studio**.

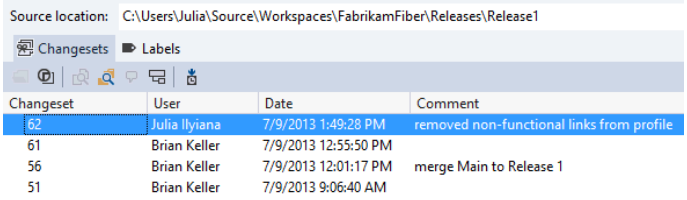
```
<!-- <ul class="admin">
    <li class="tickets"><a href="">My tickets</a></li>
    <li class="profile"><a href="">My profile</a></li>
    <li class="schedule"><a href="">Schedule</a></li>
</ul> -->
```

Explanation

Let's assume that we come back later and want to see the changes. We can do so using Source Control Explorer.

Steps to follow

18. **Check-in** the changes to TFS and use the comment **removed non-functional links from profile**.
19. In *Source Control Explorer*, **right-click** *on Release 1* and select **View History**.



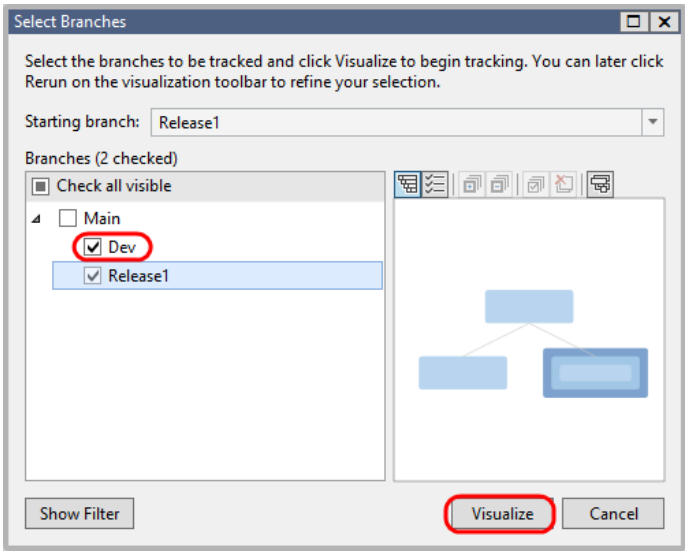
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's visualize the change we made in the earlier step.

Steps to follow

20. **Right-click** on the changeset that you checked in and select **Track Changeset**.
21. In the *Select Branches* window, *Release1* is checked. **Check** the checkbox for **Dev** and then click **Visualize**.

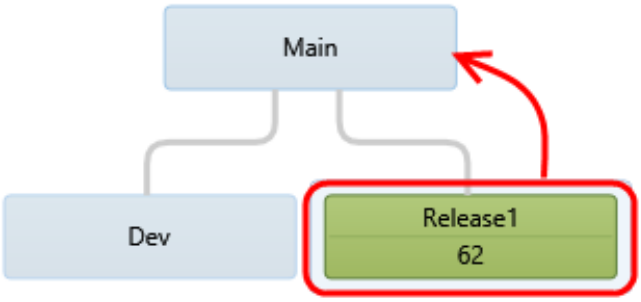


Explanation

This visualization shows us that the changeset has been applied to Release1 but not to Dev. Obviously, we will not be able to merge changes with Dev branch without merging with the Main branch first.

Steps to follow

22. Review the diagram with your instructor.
23. **Drag-and-drop** the green *Release1* node onto the *Main* node.



<Rest of module cut as this is only a preview>

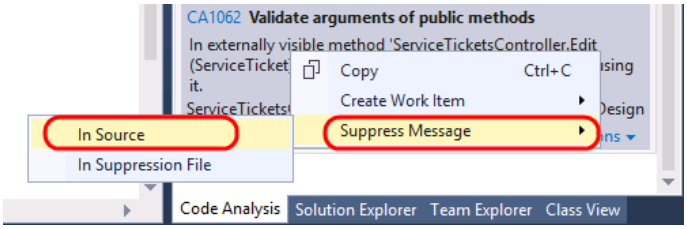
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Code Analysis

Using static code analysis, the Code Analysis feature of Visual Studio analyzes code to help developers identify potential design, globalization, interoperability, performance, security, and a host of other categories of potential problems.

Explanation

If we want to suppress a certain type of warning only in a particular file, we can do so using an option.

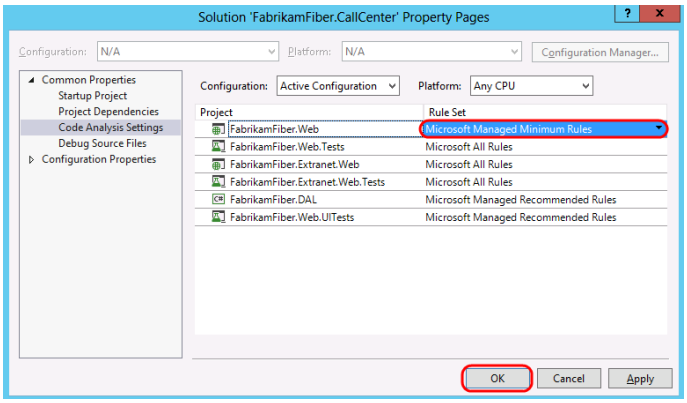


Steps to follow

24. Move on to the next warning as illustrated.
25. **Right-click** on this warning and select **Suppress Message | In Source**.

Explanation

We will now run the analysis once again to see progress. Assume we don't want to address any more warnings.



Steps to follow

26. From the menu, select **Analyze | Run Code Analysis on FabrikamFiber.Web**.
27. To disable further warnings, click on the **Settings** button in the *Code Analysis* window toolbar.
28. **Change** the *Rule Set* for Project FabrikamFiber.Web from *Microsoft All Rules'* to **Microsoft Managed Minimum Rules**
29. Click **OK**.
30. Click **Analyze | Run Code Analysis on FabrikamFiber.Web** and verify that the number of warnings has dramatically been reduced.

<Rest of module cut as this is only a preview>

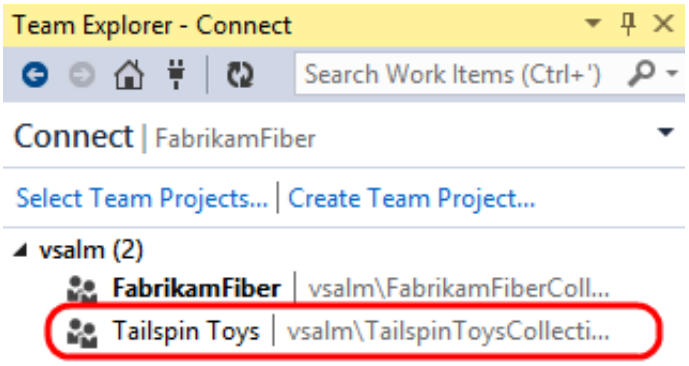
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Using the Architecture Tools

In this step of the training, we will learn how to generate and navigate dependency graphs with Visual Studio Ultimate 2013 in order better understand and communicate system architecture.

Explanation

In preparation, let's connect to another solution.

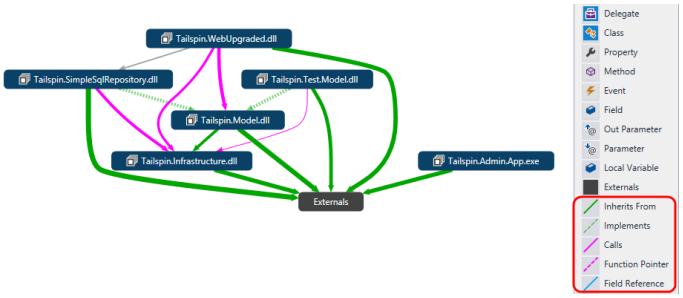


Steps to follow

31. While still logged in as Julia, open the **TailspinToysCollection** from *Team Explorer*.
32. **Open** *Source Control Explorer* and navigate to **Tailspin Toys | Development | Iteration 2**.
33. **Double-click** on **TailspinToys.sln** to open the Tailspin Toys solution.
34. **Rebuild** the solution.

Explanation

To get a birds-eye view of all system dependencies, we can use the Dependency Graph on the project level. The dependency graph is stored in Directed Graph Markup Language (DGML). Gray lines of varying thicknesses represent the magnitude of relationship interdependencies between assemblies, with thicker lines equating to more relationships.

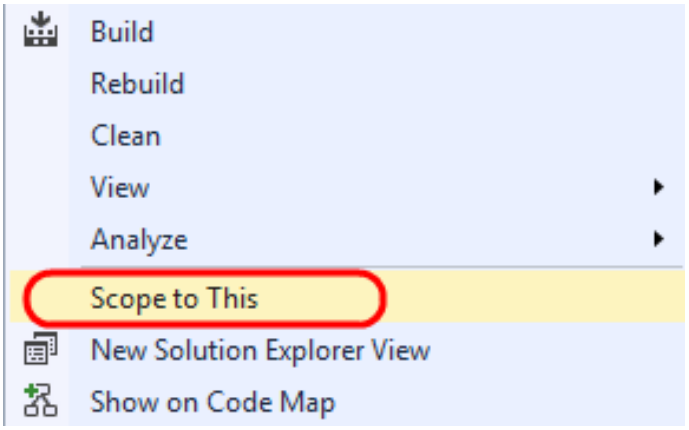


Steps to follow

35. From the menu, select **Architecture | Generate Dependency Graph | For Solution**.
36. Click on the **Legend** button. Note the color-coding.
37. Follow your instructor to expand some of the nodes.

Explanation

It is also possible to create a dependency graph with a narrower scope. This will allow you to select only those types or members that you want to see, and then create a new graph or add those items onto an existing graph.



Steps to follow

38. **Clear** the current diagram by pressing **Ctrl + A** and then the **Delete** key.
39. Narrow the scope of *Solution Explorer* by **right-clicking** on the *Tailspin.Model* project node and selecting **Scope to This**.

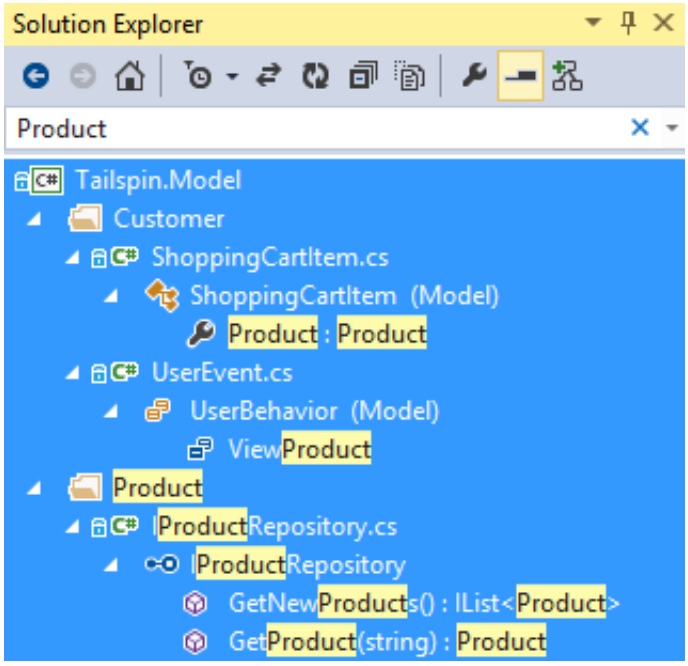
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

We are interested in any code that contains the word "Product" in it.

Steps to follow

40. In Solution Explorer's **search** for **Product**.
41. Select all the search results by clicking inside the results and pressing **Ctrl + A**.

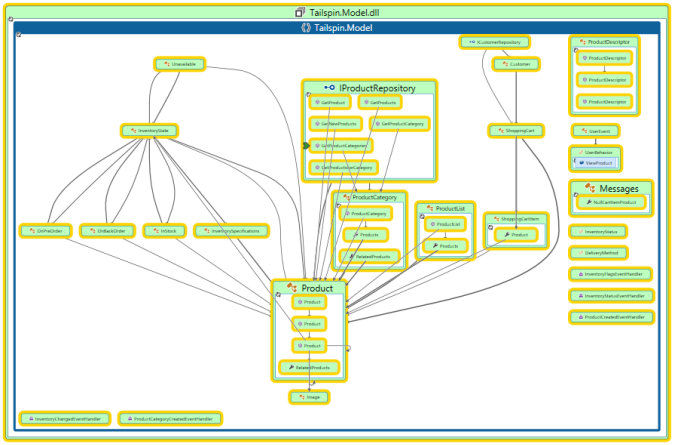


Explanation

Here is a visualization of code components that contain the word Product in them.

Steps to follow

42. In *Solution Explorer toolbar*, click on the **Show on Code Map** button.
43. Follow your instructor to add some other components from Solution Explorer onto the graph.

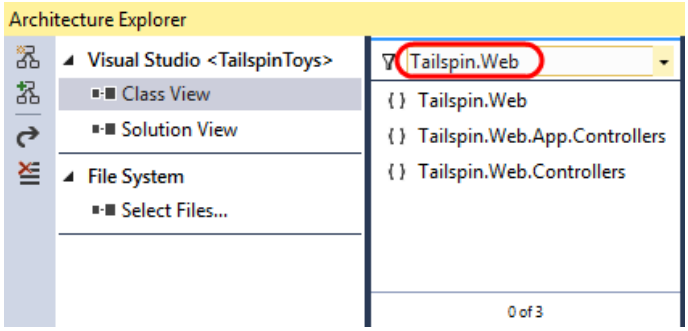


Explanation

Another way to generate or add to a dependency graph is to use the **Architecture Explorer**, which provides fine-grained control over navigation and selection of types and members.

Steps to follow

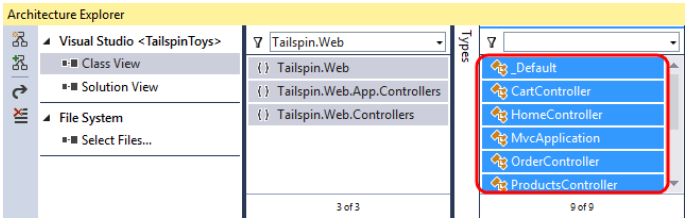
44. From the menu, click **Architecture | Windows | Architecture Explorer**.
45. In *Architecture Explorer*, click the **Class View** option to view all available namespaces.
46. Type **Tailspin.Web** in the *search box* above the namespace listing and press **Enter**.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

We would like to add all the Tailspin.Web namespace artifacts to our diagram. Let's select them.



Steps to follow

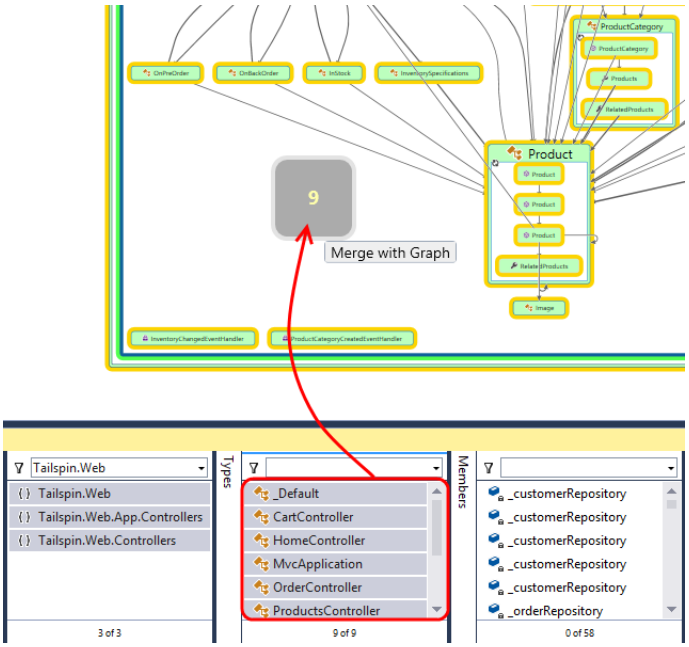
47. Select all namespaces using **Ctrl + A** to list all types contained within.
48. Once the types for the **Tailspin.Web.*** namespaces are listed, select all of the types (again using **Ctrl + A**).

Explanation

We also want to include the parents of each of the selected artifacts. We can achieve this by holding down the Ctrl key while adding items to the graph.

Steps to follow

49. While the artifacts are selected, **single-click and hold** the mouse on the selected types.
50. While pressing the **Ctrl** key **drag-and-drop** the selection on the current dependency graph.

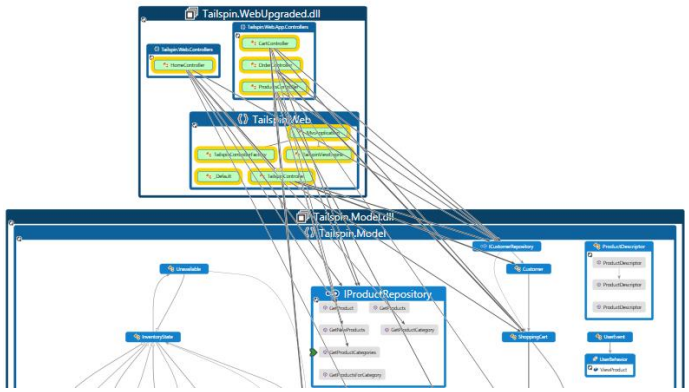


Explanation

The result of merging the new types with the existing graph results in a view that provides some insight into how the web application relates to the Product-related classes from the Tailspin.Model project.

Steps to follow

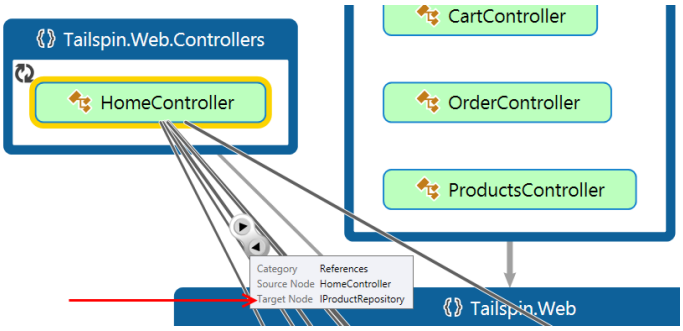
51. Review the graph with the help of your instructor.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's try to navigate this graph to get a visual on the inter-dependencies in our code. The navigation control that appears when hovering over a relationship line exposes two actions that allow you to navigate to either the source or target node.



Steps to follow

52. Zoom-in and pan as necessary to get a good view of the **HomeController** class.
53. Click to select the HomeController class and hover over the relationship lines until you find the one with a Target Node of **IProductRepository**.
54. Click the arrow that points away from HomeController to **IProductRepository**.

<Rest of module cut as this is only a preview>

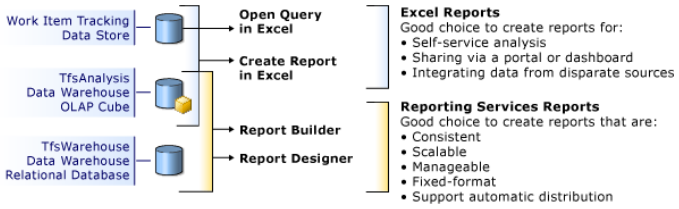
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Creating and Customizing TFS Reports

Team Foundation Server provides a wealth of information to its users via built-in reports. In this section, we will learn how to customize existing reports, as well as creating new ones.

Explanation

Users can generate ALM reports using one of the tools depicted in this illustration.

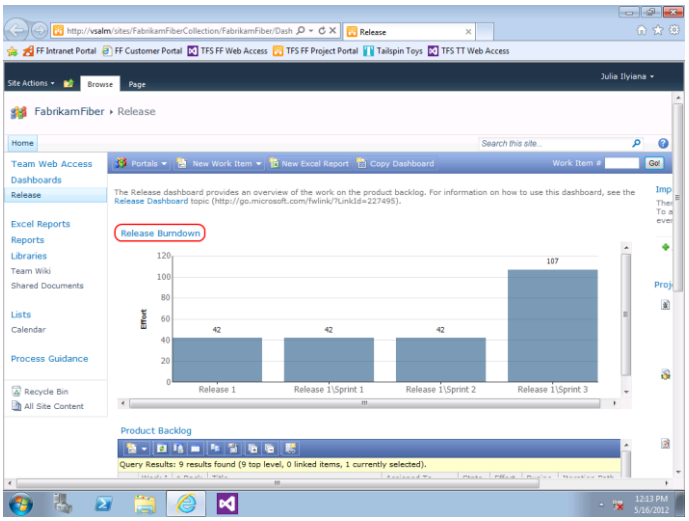


Steps to follow

55. Follow your instructor to understand the data models, tools and usage scenarios.

Explanation

The Team Project Portal is where all TFS Reports are shared with the team members. Let's have a look.

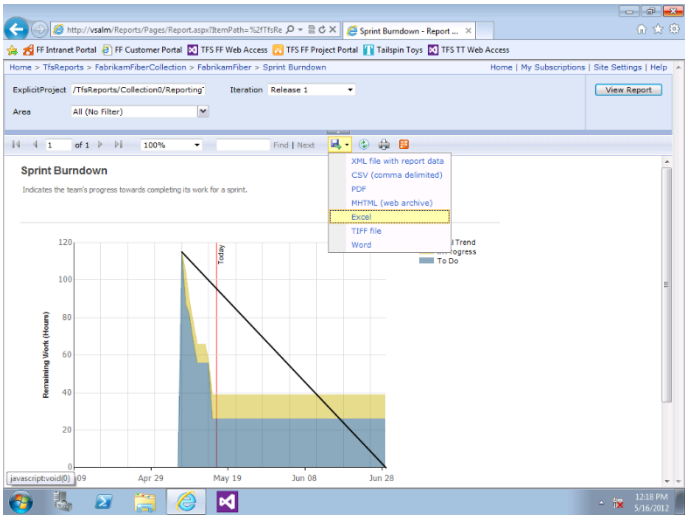


Steps to follow

56. Login as **Juliana** with password **P2ssw0rd**
57. Start **Internet Explorer**.
58. Open the **TFS FF Project Portal** from the favorites.
59. Click on the **Release Burndown** link. Note the URL.
60. Click the **Back** button.
61. Follow your instructor to understand the contents of the portal.

Explanation

These reports were built using SQL Server Reporting Services. These reports are collectively published under a certain URL and allow users to view, export or print reports.



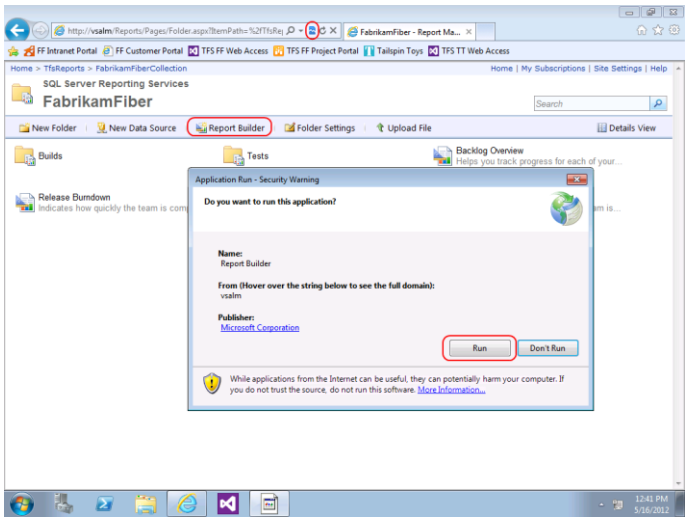
Steps to follow

62. Click on the **Reports** link. Wait for the page to load.
63. Explore some of the reports by opening them.
64. Open the **Sprint Burndown** Report.
65. Click the **disk** icon and select **Excel**.
66. Click **Open** to open the resulted *Excel file*.
67. Review and then **close** Excel without saving.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's create a report using SQL Server Reporting Services and the Report Builder. For the purposes of this training, make sure the Reports page is running in Compatibility Mode.

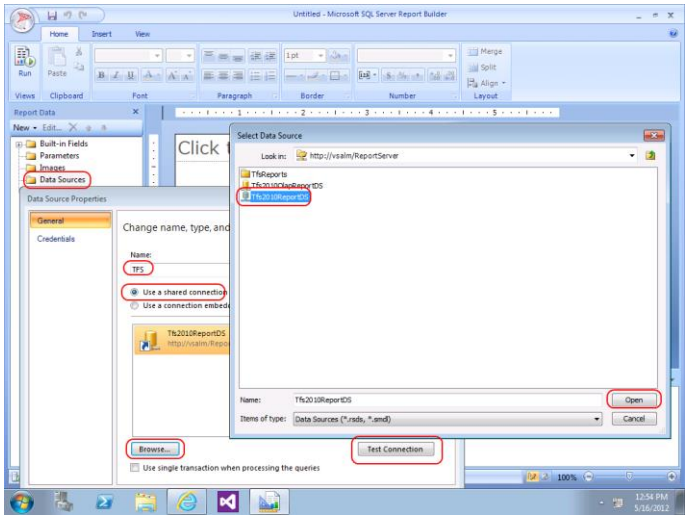


Steps to follow

68. Click the **Compatibility View** button.
69. Click on **Report Builder**. It is not installed.
70. Click the **Run** button to install Report Builder.
71. Wait for the installation to complete.

Explanation

The first step in creating a new report is to define the data source. TFS has already created a report model for our use. Let's use it.



Steps to follow

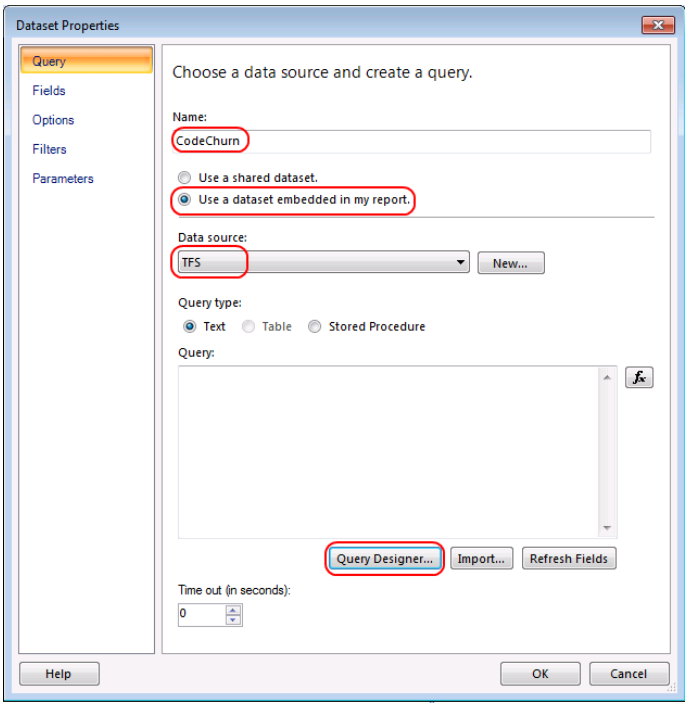
72. **Close** the *Getting Started* window.
73. **Right-click** on *Data Sources* and select **Add Data Source…**
74. Type **TFS** for the Name of the data source.
75. Select **Use a shared connection or report model**.
76. Select **Tfs2010ReportDS** and click **Open**.
77. Click **Test Connection**. The test should succeed.
78. Click **OK** to add this data source.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Next, we need to define what data should be part of our report. We want to create a report that shows the Code Churn details per Changeset. We will show the title of the changeset, number of lines added, deleted or modified.

Refer to http://bit.ly/Xy7eYc for a detailed explanation of the data models.

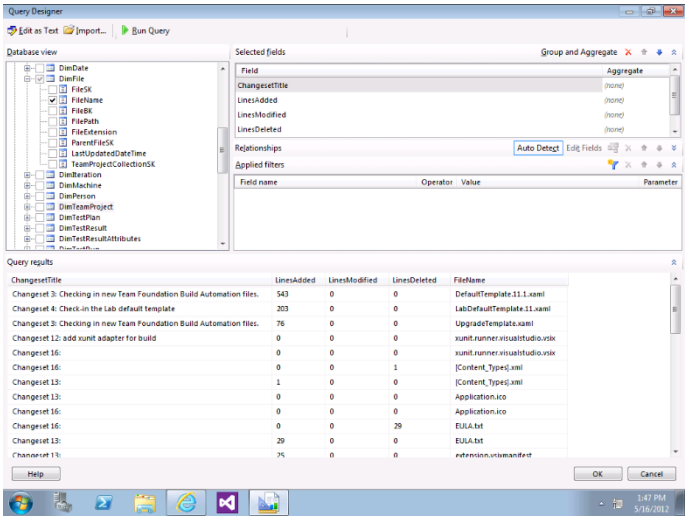


Steps to follow

79. **Right-click** on *Datasets* and select **Add Dataset…**
80. Type **CodeChurn** for the *Name*.
81. Select **Use a dataset embedded in my report**.
82. Select the **TFS** *datasource* from the dropdown.
83. Click on **Query Designer...**

Explanation

We are presented with the data model of the TFS Warehouse database. We will select the columns to add to our report.



Steps to follow

84. In *Query Designer*, expand **Tables | DimChangeset**.
85. Select **Changeset Title** to add it to the dataset.
86. Expand **FactCodeChurn**.
87. Select **LinesAdded**, **LinesModified** and **LinesDeleted** from the list.
88. Expand **DimFile**.
89. Select **FileName**.
90. Click on **Run Query** and follow your instructor.
91. Click **OK**.

<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

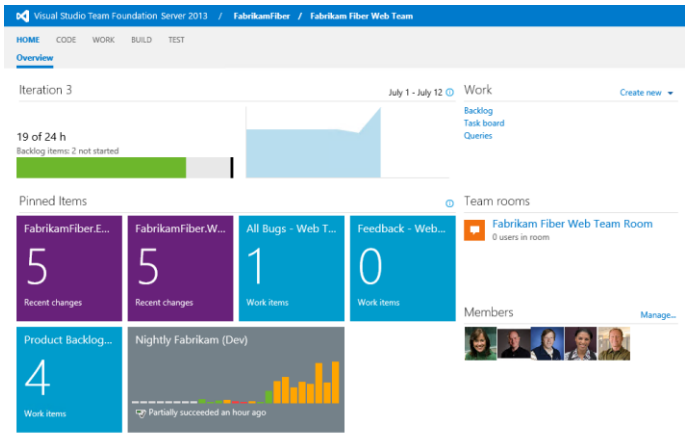
MODULE 7 – SOFTWARE PROJECT MANAGEMENT WITH TFS

Product Backlog and Sprints

In this section of the training, we will learn how to use Team Foundation Server 2013 to manage the product backlog, create work items, break work items into tasks, and assign tasks to team members.

Explanation

To begin with, let's navigate to the TFS Web Access site. The Home view for the Fabrikam Fiber Web team provides a high-level overview of the current iteration (Sprint 3) including team workload versus capacity, burndown of tasks over time, and team favorites, which can include a configurable assortment of work item queries, build definitions, and version control paths. In addition, there are links to quickly create new work items and bugs, load the backlog, task board, initiate requests for feedback, and so on.



Steps to follow

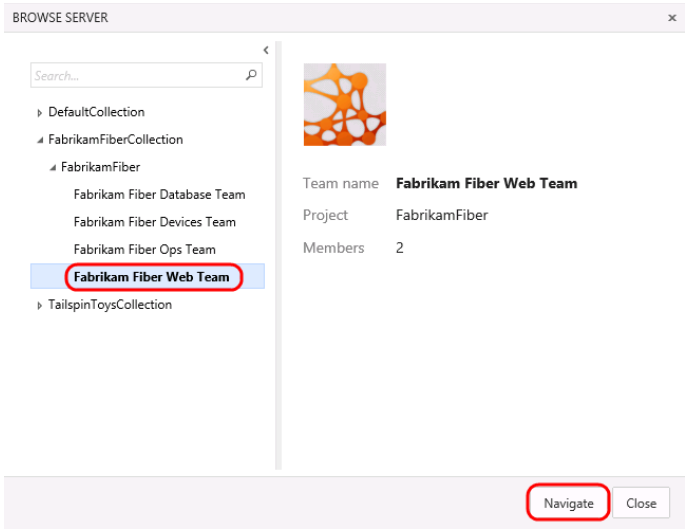
1. **Revert** the virtual machine to the *Clean* snapshot.
2. Log in as **Julia** with password **P2ssw0rd**
3. Launch **Internet Explorer** and click **TFS FF Portal** from the favorites bar.

Explanation

It is also possible to switch between teams and projects.

Steps to follow

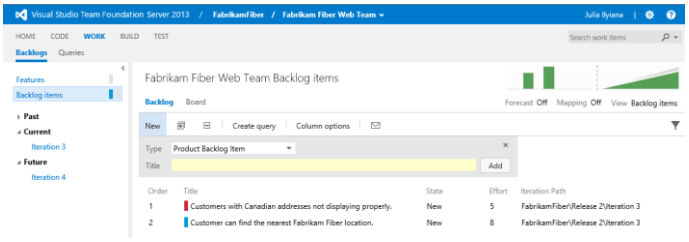
4. **Click** on the team dropdown box (*FabrikamFiber*) in the top-right corner of the portal and note that there are a few teams listed.
5. Click on **Browse all**. Note the various projects under the selected collection.
6. Expand the **FabrikamFiberCollection | FabrikamFiber** and then select the **Fabrikam Fiber Web Team** project.
7. Click **Navigate**.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's take a look at the product backlog. The product backlog contains work items that have not been assigned and committed to an iteration.

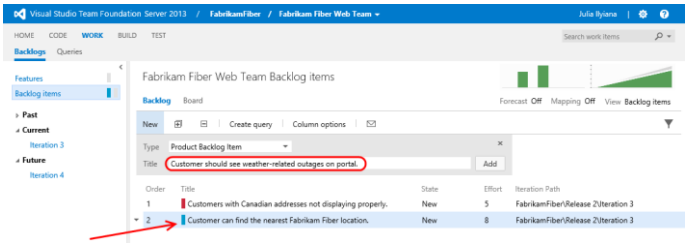


Steps to follow

8. Navigate to the backlog by clicking on the **Backlog** link under the *Work* section.

Explanation

The VP of Fabrikam Fiber has requested that a new user story be implemented for the customer-facing service portal. This new user story will enable customers to see weather-related service outages.

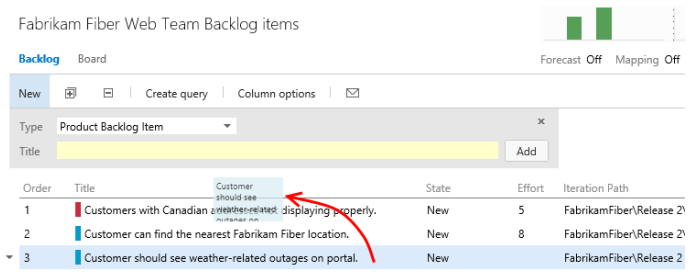


Steps to follow

9. In the *Contents* section for the *Product Backlog*, select the last row to make sure the new item goes to the last row.
10. Type **Customer should see weather-related outages on portal.** for the title of the backlog item.
11. Click **Add**.

Explanation

Work items on the product backlog are ordered based on priority, with high priority items at the top. Our new work item has a high priority. Let's move it to the top.

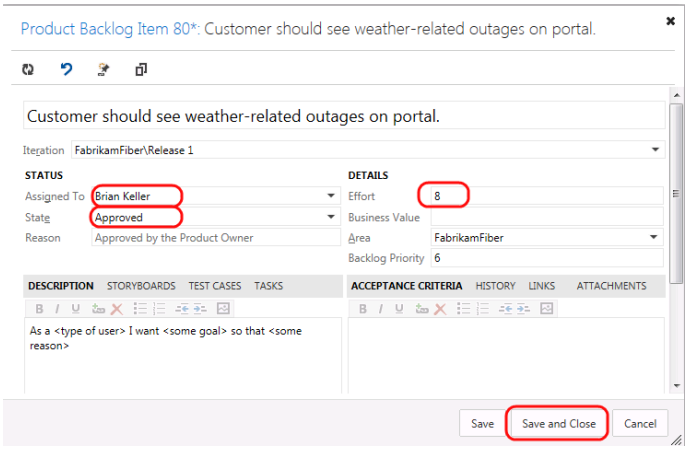


Steps to follow

12. **Drag-and-drop** the new backlog item to the top of the list.

Explanation

Let's edit the new backlog item and assign it to the proper product owner. The team has determined that this user story is worth 8 Story Points.



Steps to follow

13. **Double-click** on the new user story.
14. **Assign** the new item to **Brian Keller**.
15. Set the state to **Approved**.
16. Set an initial effort of **8**.
17. Click **Save and Close**.

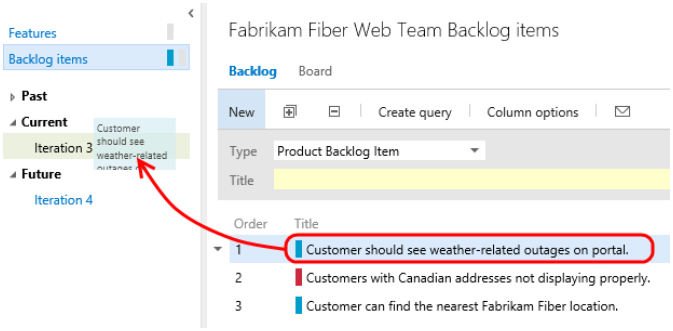
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Now that we assigned the User Story to the proper owner, we want to perform it in the current iteration.

Steps to follow

18. **Drag-and-drop** the Backlog Item onto the *Iteration 3* node on the left.
19. Look at the *Iteration Path* for the user story. It shows that it is assigned to Iteration 3 as expected. This user story will remain on the product backlog until the team commits to taking it on.

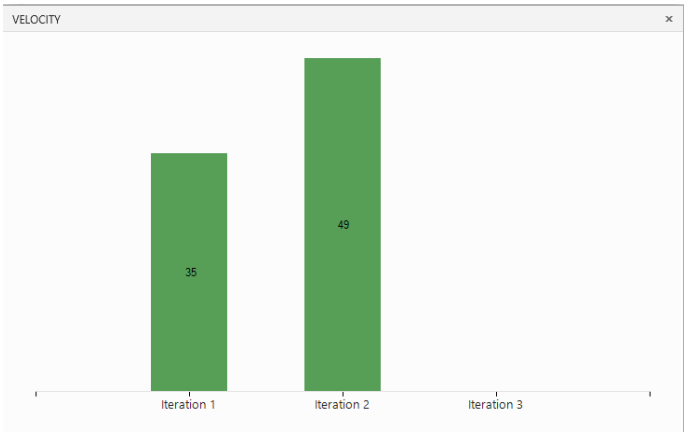


Explanation

The product backlog view also provides a velocity chart that shows the amount of work that the team has undertaken in each sprint, with the current sprint breaking that down further to differentiate between work in progress and work completed.

Steps to follow

20. **Click** on the bar chart in the upper-right corner to load the larger view.
21. Follow your instructor to understand this chart.
22. Close the chart (you can press **Esc**).

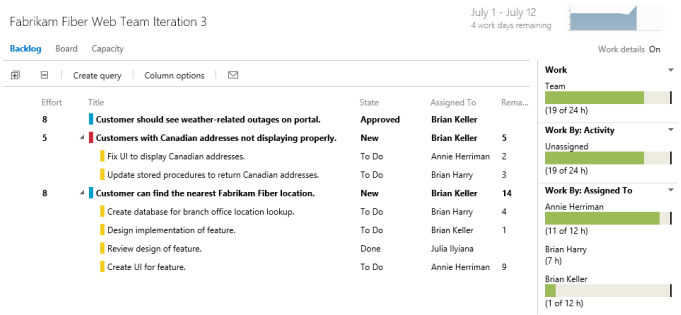


Explanation

Now let's look at the current iteration to plan how to breakdown work.

Steps to follow

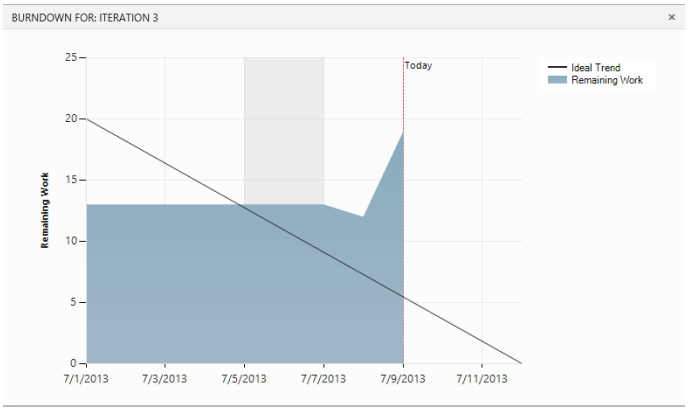
23. Click on **Iteration 3**.
24. Follow your instructor to understand the contents of this window.
25. Note the unassigned work on the right.



This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

The Burndown chart shows remaining work over the course of the sprint. Let's take a closer look at it. The actual trend line makes it look like the team may not be able to finish the assigned work in time.

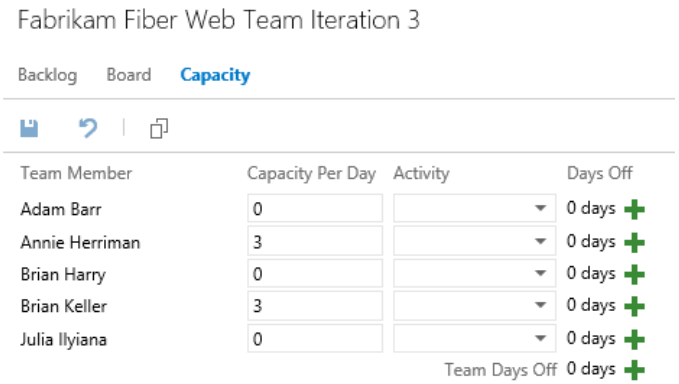


Steps to follow

26. Click on the burndown graph to view it.
27. Note that the remaining work exceeds the ideal trend, indicating that the team may not make it on time for the sprint.
28. **Close** the burn down graph (**Esc**)

Explanation

Look at the overall **Work** bar that shows how close to capacity we are for the current iteration based on the total of the Remaining Work for the tasks in this iteration and based on the total capacity for the team. It looks like we are okay now, but we still haven't broken the new user story into tasks for the team yet. Let's set the team's capacity.



Steps to follow

29. Click on the **Capacity** tab.
30. Review the values with your instructor.
31. Return to the **Backlog**.

<Rest of module cut as this is only a preview>

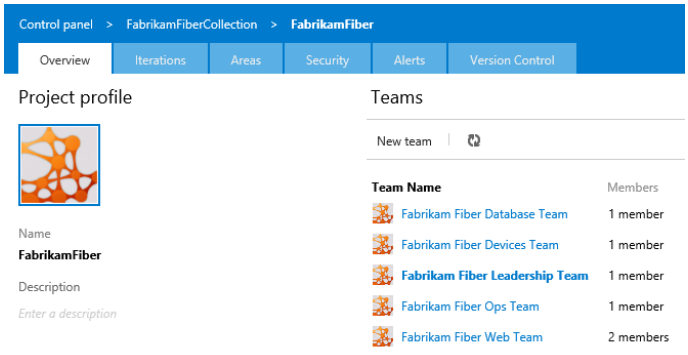
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Managing the Portfolio of Projects

It is very likely that your Project Managers are in charge of several projects at once. In this section, we will learn how to manage your Project Portfolio.

Explanation

First, we need to create teams in our project. Let's look at the available teams in the current project



Steps to follow

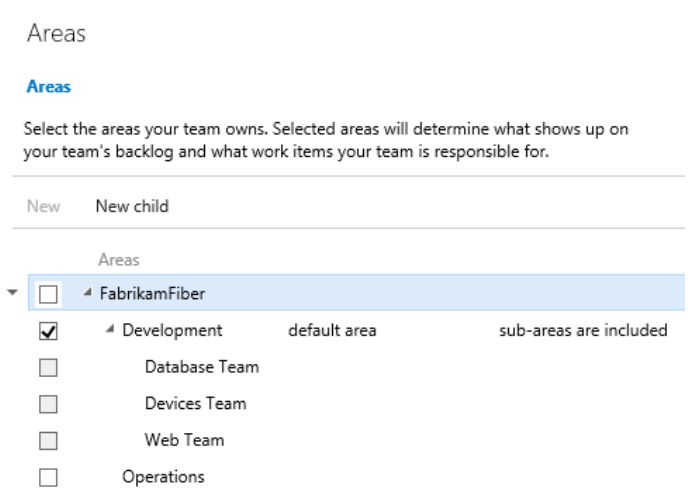
32. Click on the gear icon in the top-right corner of the web portal to open the Administration site.
33. Navigate to the **FabrikamFiber** project.
34. Note that this project has five teams, with **Fabrikam Fiber Leadership Team** assigned as the project default.

Explanation

In order to divide the project into manageable areas, TFS provides the Areas feature. Let's take a look.

Steps to follow

35. Click on the **Areas** tab.
36. This means that the *Management Team* owns the *Development* area but no other area.
37. Make no changes and return to the **Overview** tab.

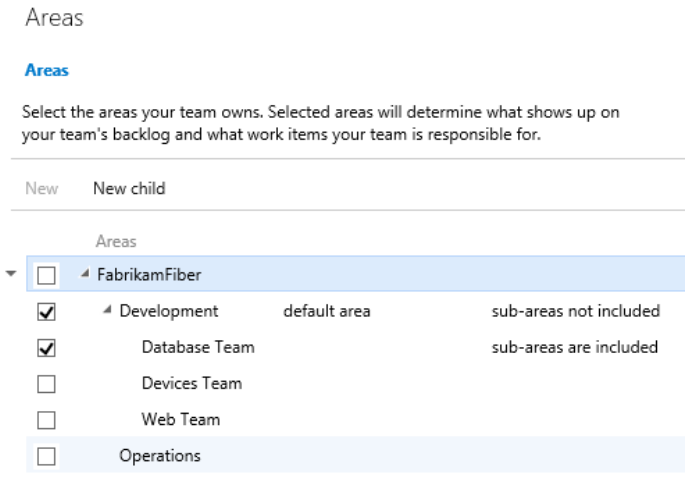


Explanation

Let's review what areas are owned by the Database Team.

Steps to follow

38. Click on **FabrikamFiber Database Team**.
39. Now click on the **Areas** tab and note the difference.
40. **Close** the Administration site and return to the web portal.



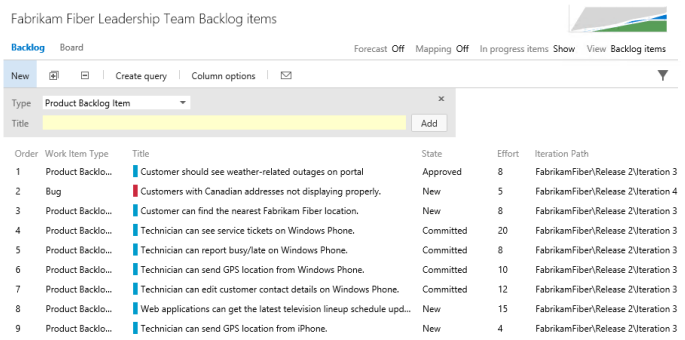
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Now we will explore the Leadership Team's contents on the web portal.

Steps to follow

41. Navigate to the **Fabrikam Fiber Leadership Team**.
42. Notice that the Leadership Team can see backlog across all teams.

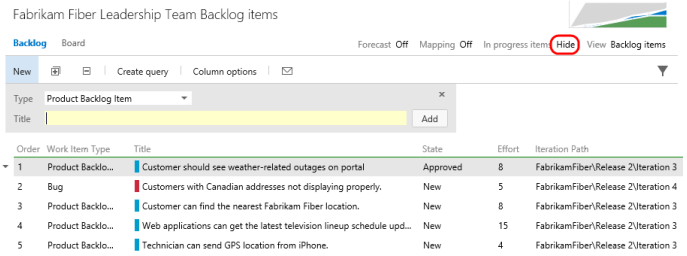


Explanation

We are only interested to know the "In Progress" Work Items.

Steps to follow

43. Click on the **Show** link to toggle the *In progress items* link in the top-right corner of the backlog view and note that the Committed work items are no longer displayed.
44. Click on the **Hide** link to toggle it back.

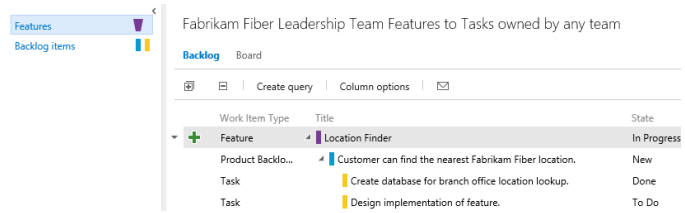


Explanation

Management would like to see what features the development team is working on.

Steps to follow

45. Click on **Features**.
46. Click on the bar on the right of Backlog Items. This will drill-down to the task level. Note the color-coding of work items.

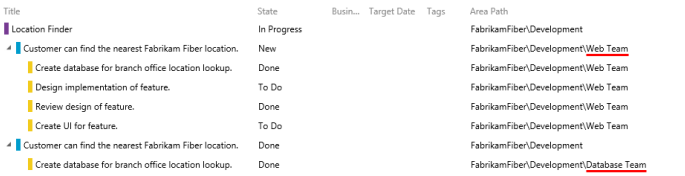


Explanation

To prove that this information is from multiple projects, let's add the Area Path column to the view.

Steps to follow

47. Click on **Column Options**.
48. Double-click on **Area Path** to add it to the view. Click **OK**.



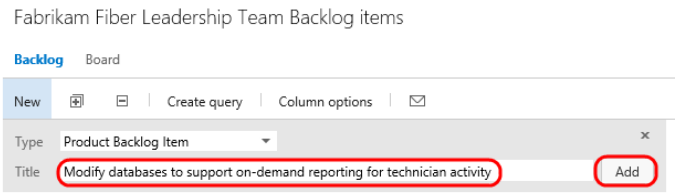
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let us create a new feature and a new backlog item and assign them.

Steps to follow

49. Click on **Features**.
50. Type **Reporting for technicians and services** then click **Add**.
51. Click **Backlog Items**.
52. Type **Modify databases to support on-demand reporting for technician activity** then click **Add**.

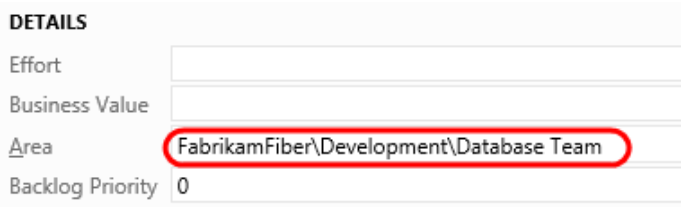


Explanation

Let us now assign these work items.

Steps to follow

53. **Double-click** on the new work item.
54. Assign it to the database team lead, **Adam Barr**.
55. Set the *Area* to the **Database** team.
56. **Save and Close**.

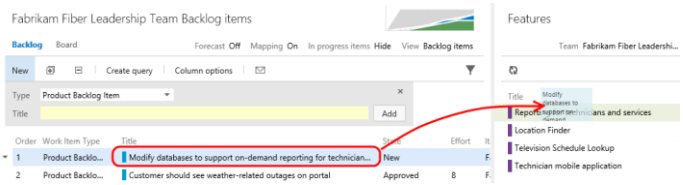


Explanation

We will now associate the backlog item with the newly created feature.

Steps to follow

57. Turn the *Mapping* feature **On** by clicking on the link.
58. **Drag-and-drop** the backlog item onto the *Reporting* feature.



<Rest of module cut as this is only a preview>

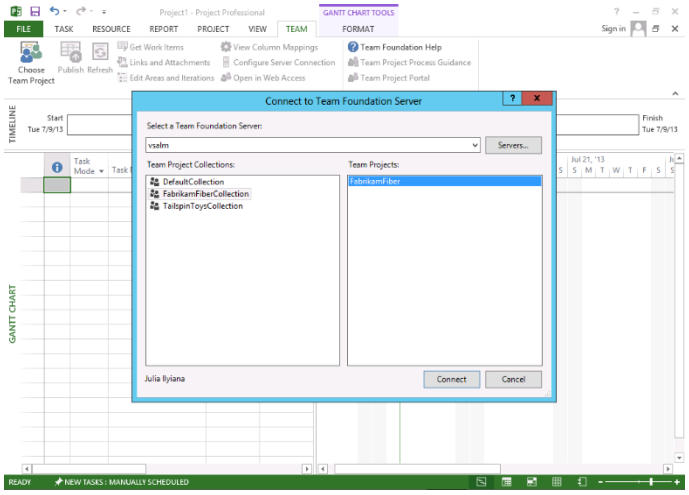
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Work Breakdown Structure using Office Project

In this section of the training, we will learn how to use Office Excel and Project to manage the project.

Explanation

The Project Manager wants to manage the Work Breakdown Structure for the project. The most suitable tool is Microsoft Project. Let's open a specific group of tasks.

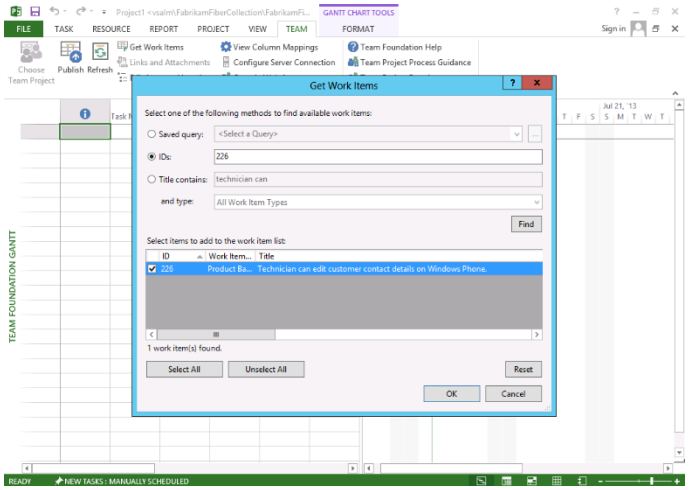


Steps to follow

59. Start **Microsoft Project 2013** and open a blank file.
60. **Click** inside the *Ghantt Chart*.
61. Open the **Team** ribbon.
62. Click **Choose Team Project**.
63. Select the **FabrikamFiberCollection**.
64. Click **Connect**.

Explanation

The ID of the Work Item we want to organize is 45. It is a User Story with 4 related Tasks. Let's open this Work Item.

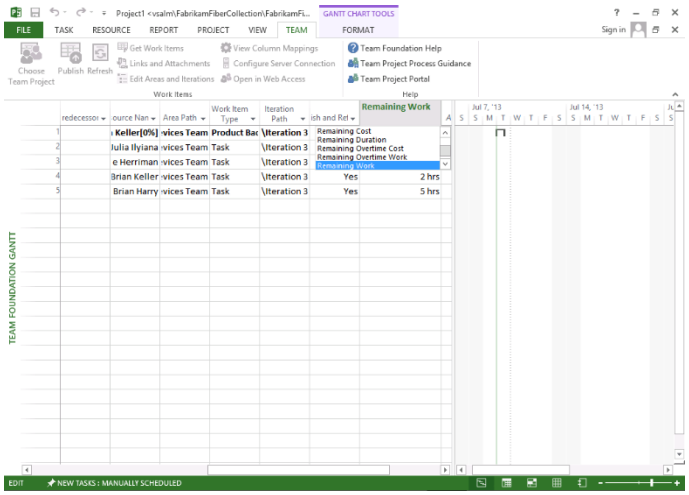


Steps to follow

65. Click **Get Work Items**.
66. Select the **IDs** option and type **226** in the textbox.
67. Click **Find**. You should see the Work Item.
68. **Check** the checkbox next to the *Work Item*.
69. Click **OK** to add the Work Items to the project plan.
70. Follow your instructor to resize some of the columns to make room in the screen.

Explanation

Let's add the Remaining Work column to the plan.



Steps to follow

71. **Scroll** to the right of the Ghantt Chart.
72. **Single-click** on the last column *Add New Column*.
73. Type **Remaining Work** (you should be able to select it from the list).
74. Notice that the values in this column is showing the remaining work in hours as saved by the team.

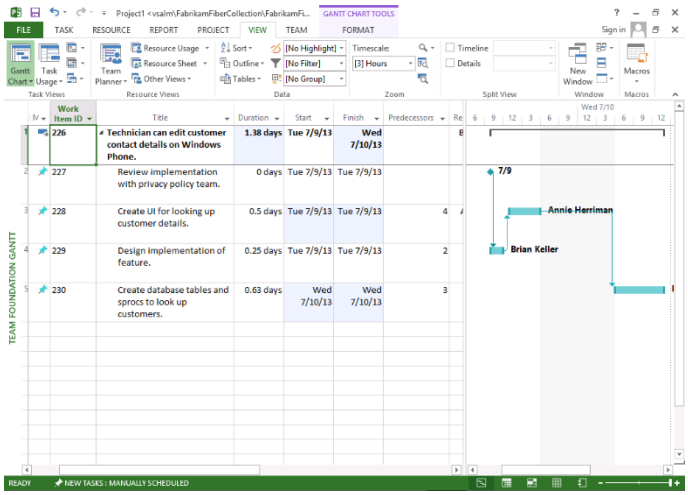
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Obviously, the team is assuming that all tasks will be performed in parallel. In our training, we will assume that the tasks depend on each other.

Steps to follow

75. **Scroll** to the right until the *Predecessor* column is visible.
76. Type **4** in the Predecessor column next to the task in line 3 (Create UI).
77. Type **2** for the next row.
78. Type **3** for the next row.
79. As you type, note the change in the duration of the User Story.



Explanation

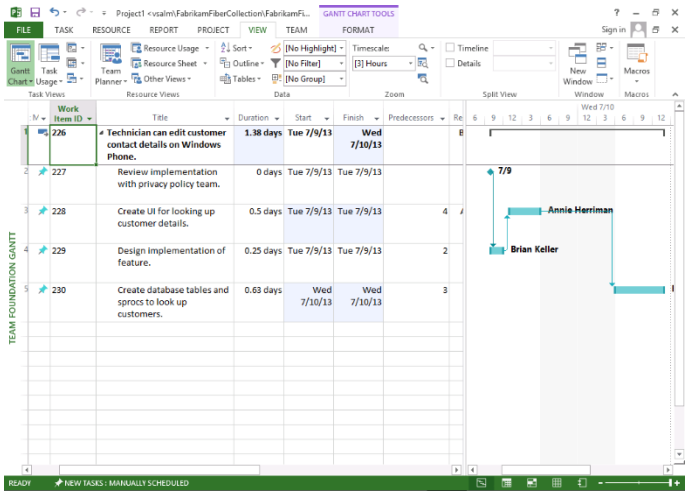
Let's now update TFS and share this plan with the rest of the team.

Steps to follow

80. Click **Publish**. Wait for TFS to update.
81. Click **Save**.
82. Navigate to

C:\Users\Julia\Source\Workspaces\FabrikamFiber\Dev

83. Create a **New Folder** and name it **Project Plan**.
84. **Open** the folder and save the file as **Project Plan**.
85. **Close** Project.

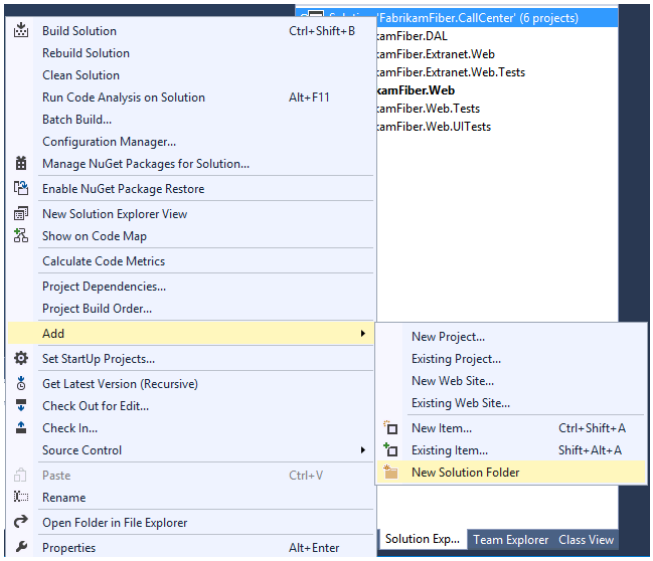


Explanation

Let's create a new folder to hold the project plan.

Steps to follow

86. Start **Visual Studio 2013**.
87. Open the **FabrikamFiber.CallCenter** Solution.
88. In Solution Explorer, right-click on the *solution name* and select **Add | New Solution Folder**.
89. Name it **Project Plans**.



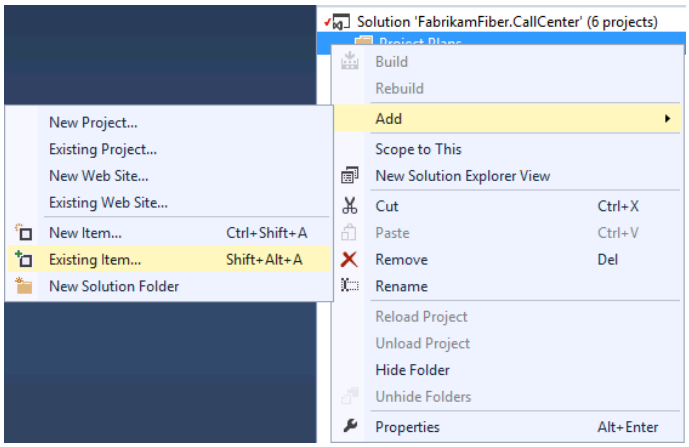
This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Explanation

Let's add the Project Plan we've just created.

Steps to follow

90. **Right-click** on the *Project Plans* folder and select **Add | Existing Item**.
91. **Navigate up** one folder then open the **Project Plan folder**.
92. **Double-click** on the *Project Plan.mpp file* to add it.
93. If prompted to save and publish, do so.



<Rest of module cut as this is only a preview>

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2011-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

APPENDIX A – PREPARING THE VIRTUAL ENVIRONMENT FOR LAB MANAGEMENT

Prior to executing the Lab Management features on your own computer, you need to create another virtual machine that matches the first one.

NOTE: We have already configured student machines for this step.

Please follow these simple steps in order to prepare your own computer for the Lab Management training:

1. In **Hyper-V Manager**, create a snapshot of the working virtual machine and name it **SharperSkillsTFS2**.
2. **Right-click** on the base snapshot and select the **Export** option.
3. In the *Export Virtual Machine* dialog, choose a location that has space (about 40GB) and that is on a different physical disk (if possible).
4. Click the **Export** button to start the export process. This will take a few minutes to complete.
5. After the export is complete, click the **Import Virtual Machine** button within *Hyper-V Manager*.
6. Select the location of the recent export and make sure to select the **Copy the virtual machine (create a new unique ID)** option under import settings.
7. **Boot** the first instance of the virtual machine (machine name is **VSALM**).
8. **Boot** the second instance of the virtual machine and logon as **Administrator** with password **P2ssw0rd**
9. Change the machine name to **VSALM2**. Don't reboot just yet.
10. Execute the **c:\util\ConfigureVSALM2.bat** file to change the machine name and perform other necessary configuration.
11. **Reboot** the **VSALM2** machine so that the new name takes effect.
12. Ensure that the two virtual machines can communicate with each other. One way to do this is to ensure that they are both configured to use an **Internal Only** virtual network adapter and are configured to both be on the same **VLAN**.
13. Logon into **VSALM2** and ensure that you can ping the *VSALM* machine by loading a command prompt window and entering "**ping -4 VSALM**". If this is a success, you are ready to continue with the training.
14. Take a **snapshot** of the *VSALM2* virtual machine so that you can reset the machine later if desired.

This Hands-On Training Manual is intended for classroom training only. Sharper Software MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.
Copyright © 2013-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.

Copyright Notice and Disclaimer

THIS STUDENT MANUAL CONSISTING OF A TOTAL OF 141 PAGES INCLUSIVE OF THIS PAGE IS THE INTELLECTUAL PROPERTY OF SHARPER SOFTWARE (HTTP://WWW.SHARPERSOFTWARE.COM) AND IS LICENSED TO YOU FOR THE PURPOSES OF THIS TRAINING ONLY. IT IS PROTECTED BY KUWAITI LAW NO. **63** FOR YEAR **1999** REGARDING INTELLECTUAL PROPERTY RIGHTS. IT IS ILLEGAL TO MAKE COPIES OF THIS DOCUMENT OR THE ACCOMPANYING SOFTWARE, FULLY OR IN PART WITHOUT A WRITTEN PERMISSION FROM SHARPER SOFTWARE. FOR MORE INFORMATION ABOUT THIS LAW, PLEASE VISIT http://www.wipo.int/wipolex/en/details.jsp?id=2784.

SHARPER SOFTWARE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.

THE EXAMPLE COMPANIES, ORGANIZATIONS, PRODUCTS, DOMAIN NAMES, E-MAIL ADDRESSES, LOGOS, PEOPLE, PLACES, AND EVENTS DEPICTED HEREIN ARE COMPLETELY FICTITIOUS. NO ASSOCIATION WITH ANY REAL COMPANY, ORGANIZATION, PRODUCT, DOMAIN NAME, E-MAIL ADDRESS, LOGO, PERSON, PLACE, OR EVENT IS INTENDED OR SHOULD BE INFERRED.

Copyright © 2013-2015 Sharper Software. All rights reserved under Kuwaiti Law #64/1999.