Assuring Quality Using Azure Test Plans

Accentient™

Azure DevOps | 2018.11

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Assuring Quality Using Azure Test Plans

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Assuring Quality
Using Azure Test Plans

Course Introduction

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- A leader in ALM, DevOps, and Scrum knowledge
- Helped thousands of teams and individuals understand and implement Azure DevOps/VSTS/TFS and Scrum successfully
- Has a close working relationship with Microsoft
- Has a close working relationship with Scrum.org
- Has a staff consisting of Microsoft MVPs, Professional Scrum Developers, Professional Scrum Trainers, and authors

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Course Creator: Richard Hundhausen

- President of Accentient
- Author of software development books
- Microsoft MVP (Developer Technologies)
- Professional Scrum Developer
- Professional Scrum Trainer
- Co-creator of Nexus scaled Scrum Fx
- richard@accentient.com
- @rhundhausen

Microsoft
Professional Scrum Development with Microsoft Visual Studio 2012
Richard Hundhausen

http://bit.ly/1eL0t4C

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Prerequisites

- Work on a software development team
- Experience with …
  - Application Lifecycle Management
  - Software requirements
  - Test case management
  - Writing test cases
  - Running manual tests
  - Agile software development

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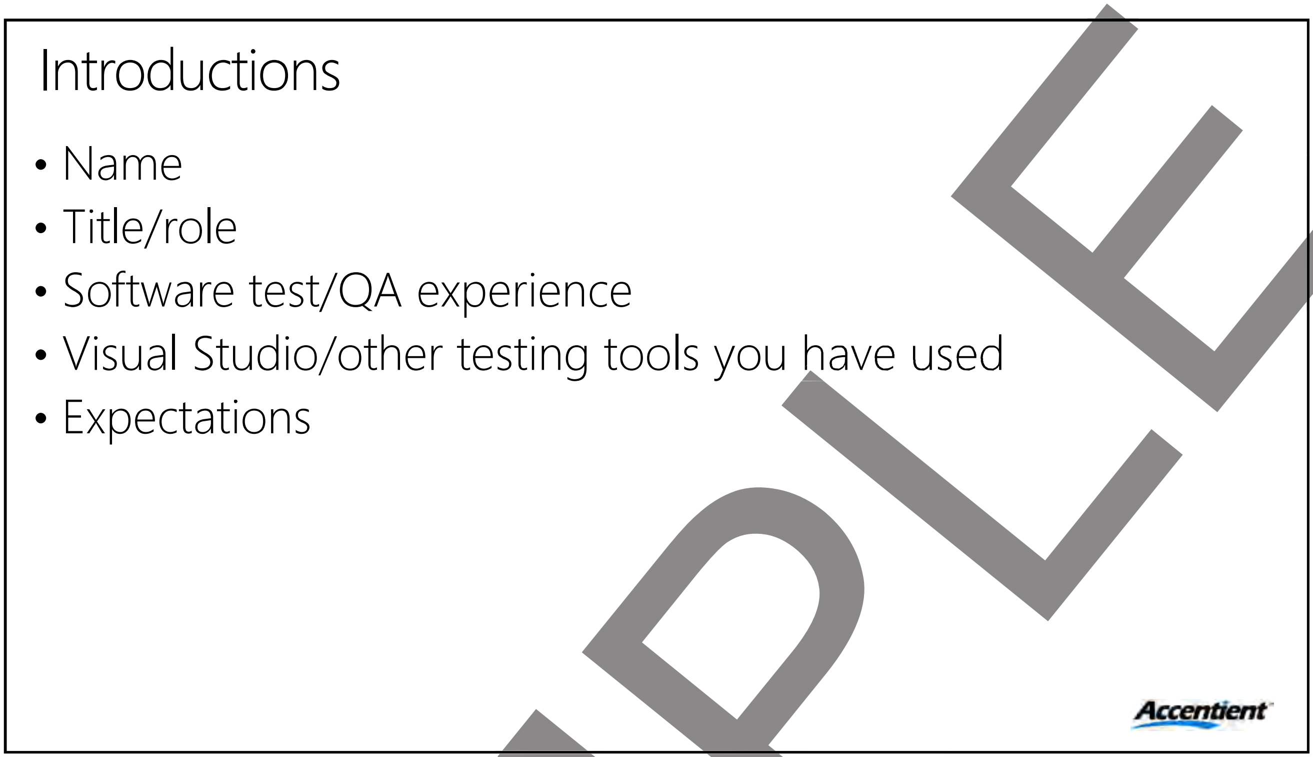

Introductions

- Name
- Title/role
- Software test/QA experience
- Visual Studio/other testing tools you have used
- Expectations

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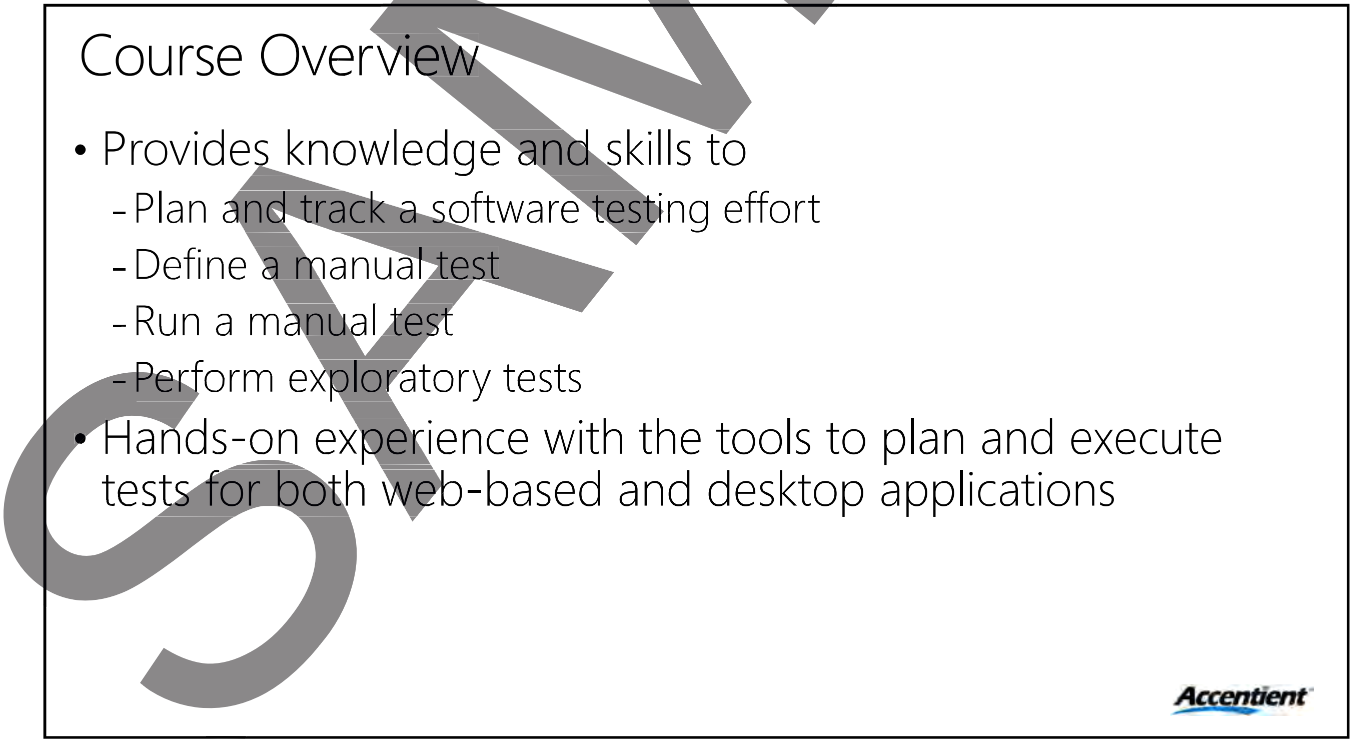

Course Overview

- Provides knowledge and skills to
  - Plan and track a software testing effort
  - Define a manual test
  - Run a manual test
  - Perform exploratory tests
- Hands-on experience with the tools to plan and execute tests for both web-based and desktop applications

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Course Backlog

- Test Case Management
  - Application Lifecycle Management and testing
  - Azure DevOps Services
  - Team projects, process templates, work item types
- Test Planning
  - Test plans, test suites
  - Test cases, shared steps
- Running Tests
  - Running tests
  - Capturing data and managing results
  - Exploratory testing

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Our Case Study: Fabrikam Fiber

The hands-on labs are centered around a fictitious company named Fabrikam Fiber.

Working as a team, you will see how to plan and execute a team-based testing effort.

You will work as a team in a shared team project hosted in Visual Studio Team Services.

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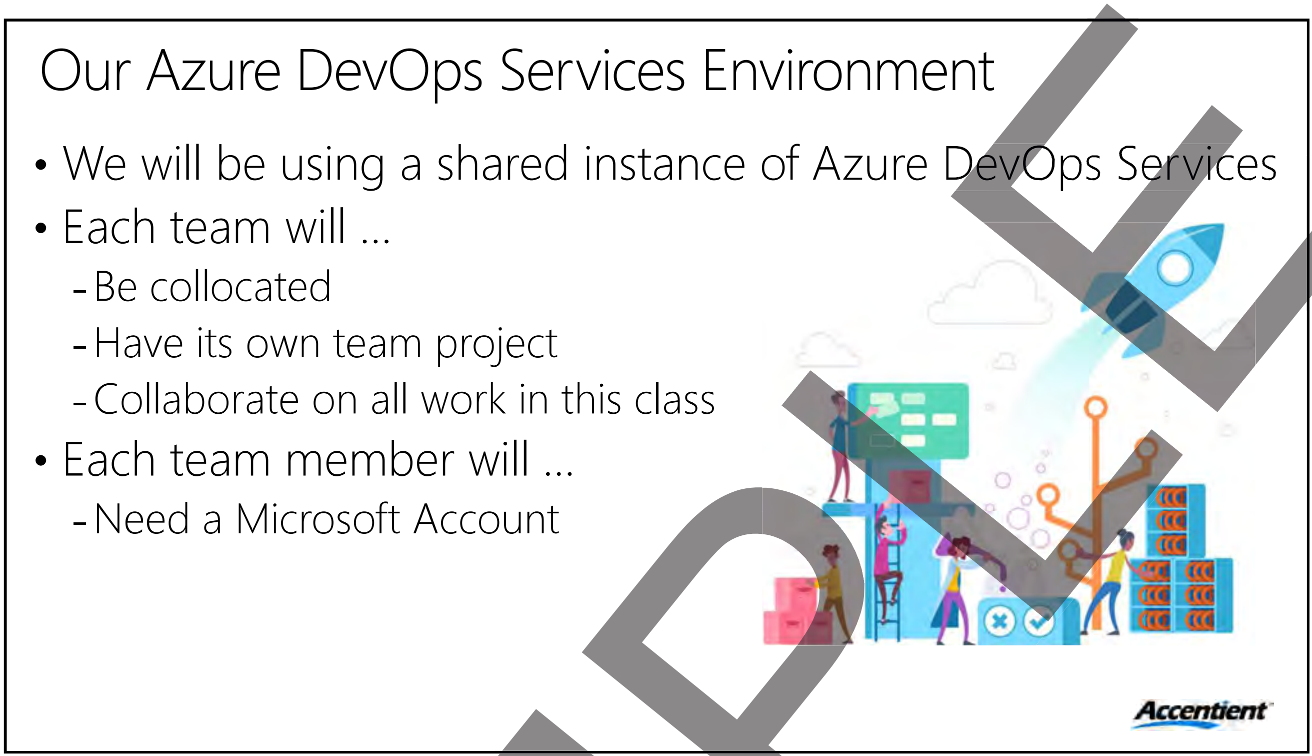
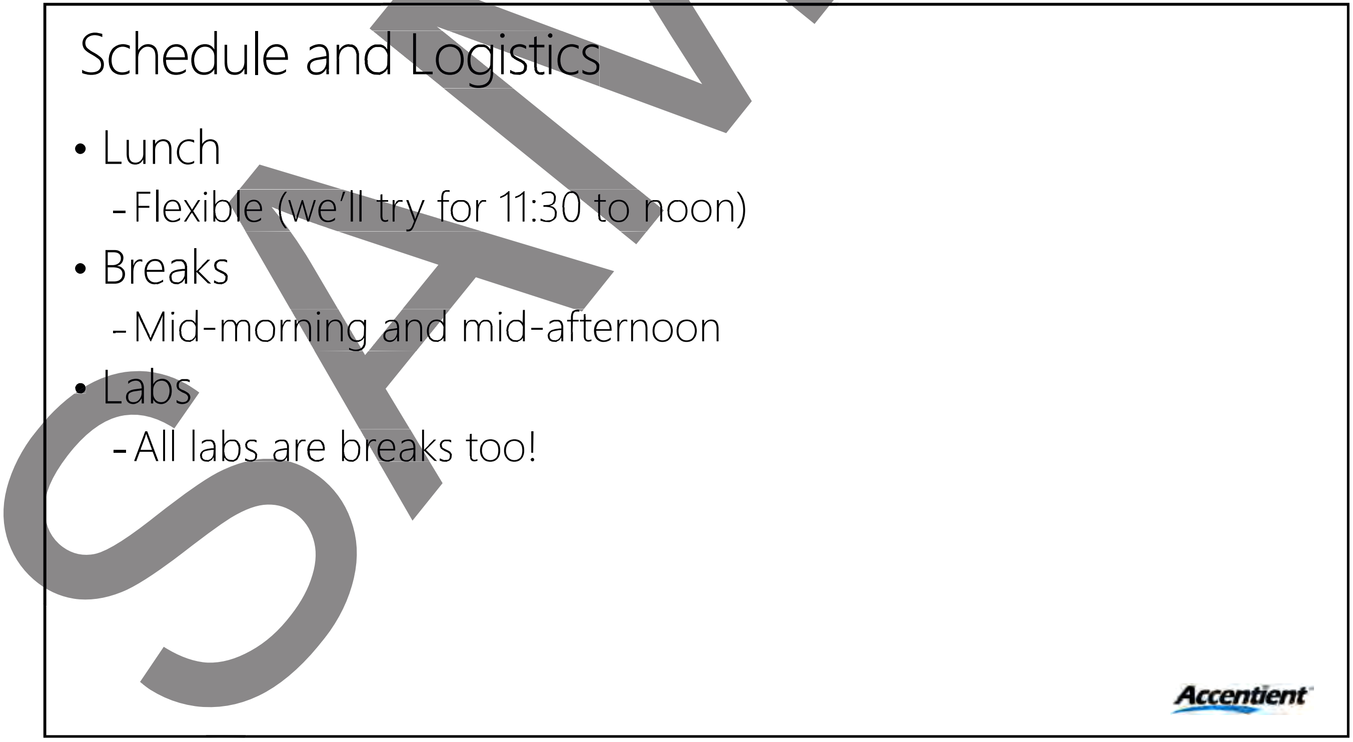


Our Azure DevOps Services Environment

- We will be using a shared instance of Azure DevOps Services
- Each team will …
  - Be collocated
  - Have its own team project
  - Collaborate on all work in this class
- Each team member will …
  - Need a Microsoft Account

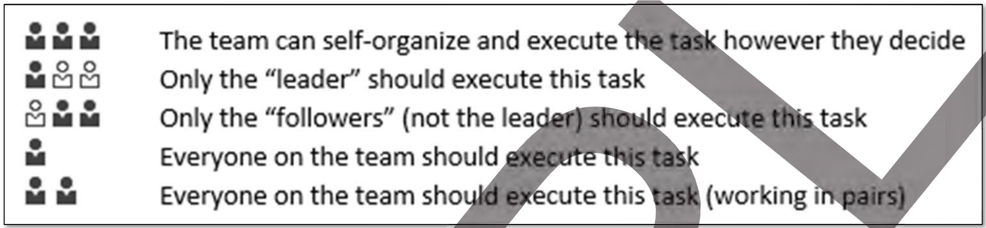


Schedule and Logistics

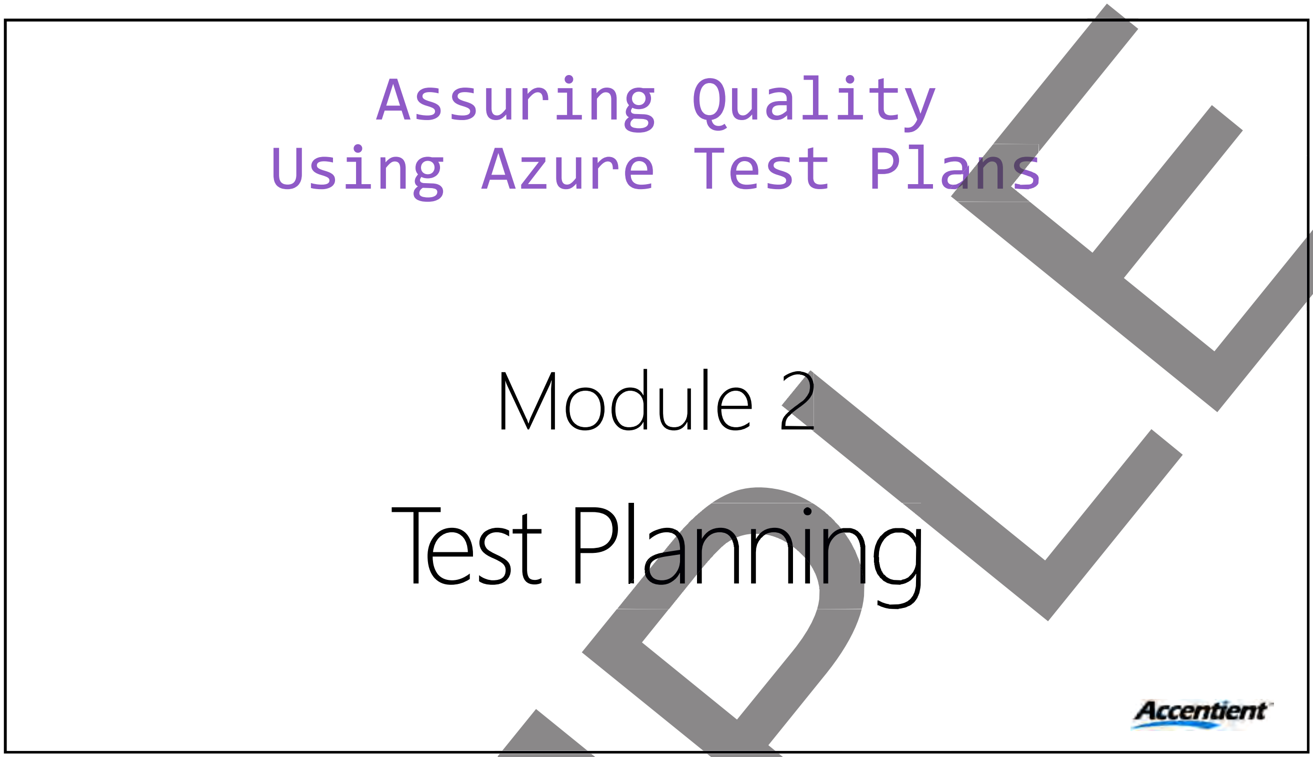
- Lunch
  - Flexible (we'll try for 11:30 to noon)
- Breaks
  - Mid-morning and mid-afternoon
- Labs
  - All labs are breaks too!

Collaborating as a Team

- There are many opportunities for collaboration in this course
  - Some tasks, however, must be performed by *one* team member
- All tasks will be marked with an appropriate icon …



●●●	The team can self-organize and execute the task however they decide
●○○	Only the "leader" should execute this task
○●●	Only the "followers" (not the leader) should execute this task
●	Everyone on the team should execute this task
● ●	Everyone on the team should execute this task (working in pairs)



Assuring Quality Using Azure Test Plans

Module 2

Test Planning

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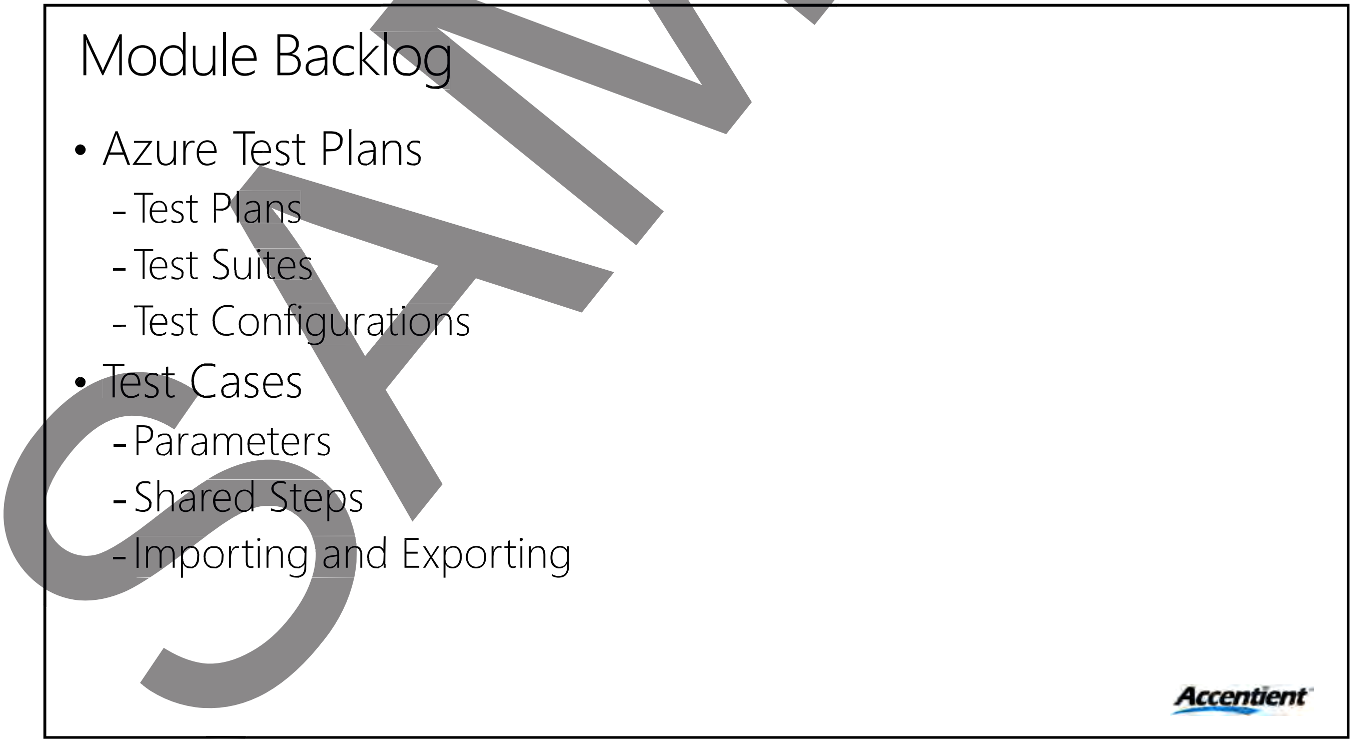

Module Backlog

- Azure Test Plans
  - Test Plans
  - Test Suites
  - Test Configurations
- Test Cases
  - Parameters
  - Shared Steps
  - Importing and Exporting

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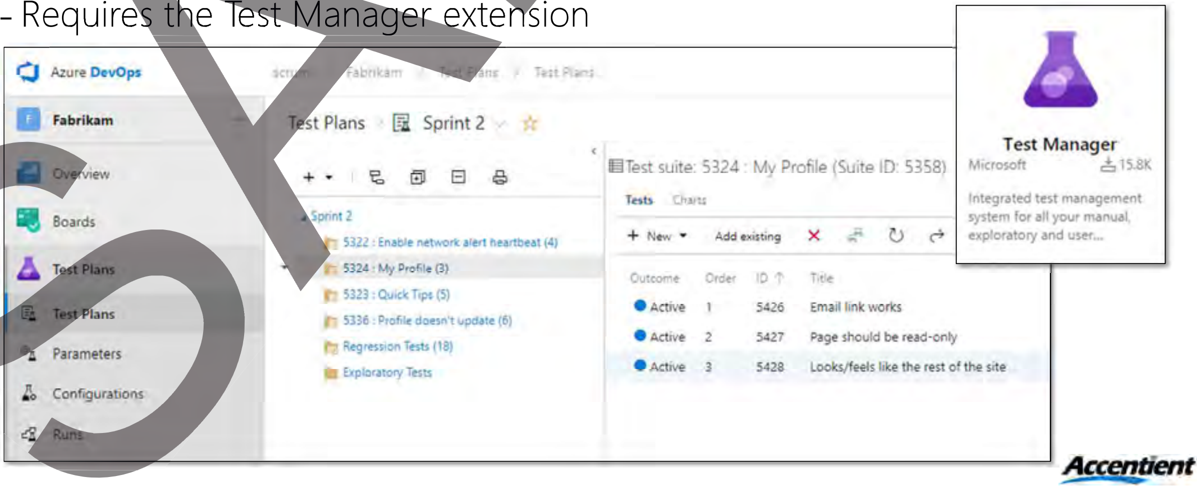
Azure Test Plans

Azure Test Plans

- The Test hub in the web portal offers a lightweight, browser-based way to create and manage the testing effort
  - Requires the Test Manager extension



Sprint 2
- 5322 : Enable network alert heartbeat (4)
- 5324 : My Profile (3)
- 5323 : Quick Tips (5)
- 5336 : Profile doesn't update (6)
- Regression Tests (18)
- Exploratory Tests

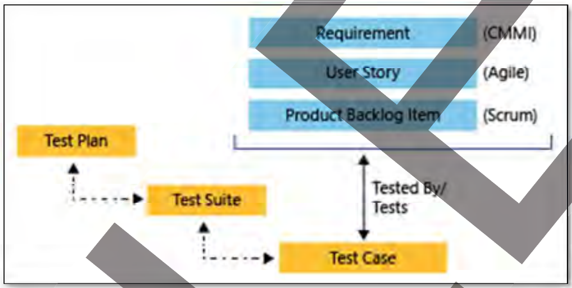
Test suite: 5324 : My Profile (Suite ID: 5358)

Outcome	Order	ID	Title
● Active	1	5426	Email link works
● Active	2	5427	Page should be read-only
● Active	3	5428	Looks/feels like the rest of the site

Integrated test management system for all your manual, exploratory and user...

Test Plans, Test Suites, and Test Cases

- Create a Test Plan
  - Alpha, Sprint 2, Regression
- Create one or more Test Suites
  - Requirements, query-based, etc.
- Create one or more Test Cases
  - Manual or automated
- Manage the settings and configurations
  - Used when you run the tests
- Track your results, progress, and quality



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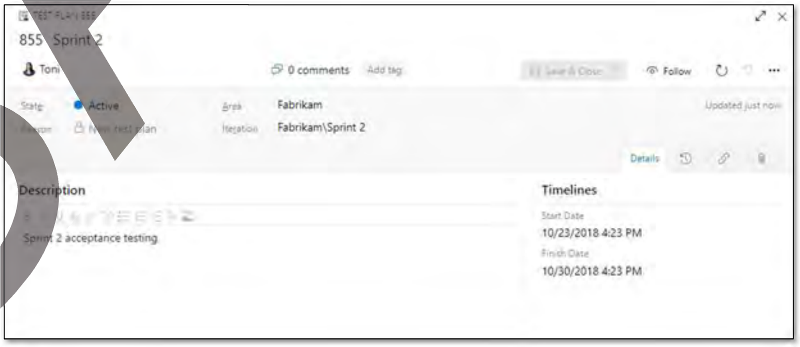
Test Plans

- A test plan lets you specify what you want to test and how to run those tests
  - You can associate an owner, area, iteration, dates, and description
  - A test plan is a work item


TEST PLAN 855

855 Sprint 2

Toni

0 comments Add tag

Save & Close Follow

State: Active

Reason: New test plan

Area: Fabrikam

Iteration: Fabrikam\Sprint 2

Updated just now

Details

Description

Sprint 2 acceptance testing

Timelines

Start Date

10/23/2018 4:23 PM

Finish Date

10/30/2018 4:23 PM

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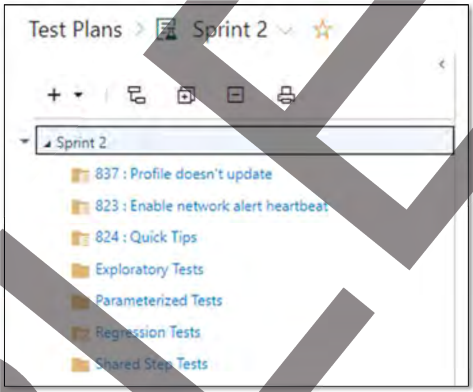
Test Suites

- Logically group test cases into suites
  - You can run all test cases within a suite
- Test suites can be …
  - Based on requirements
  - Based on a query
  - Created manually
- A test suite is a work item
- Note: Manually-created suites can contain other suites


Test Plans > Sprint 2

- Sprint 2
  - 837 : Profile doesn't update
  - 823 : Enable network alert heartbeat
  - 824 : Quick Tips
  - Exploratory Tests
  - Parameterized Tests
  - Regression Tests
  - Shared Step Tests

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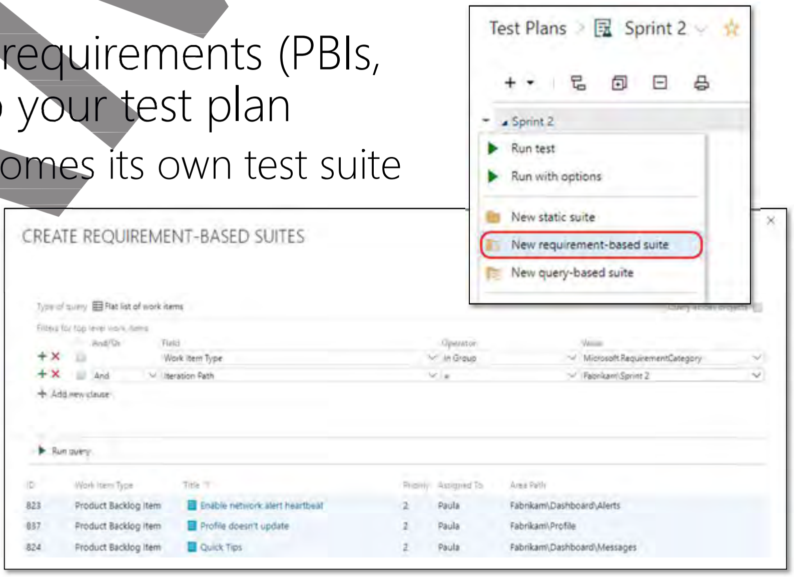
Adding Requirements to Test Plans

- You can add existing requirements (PBIs, Bugs, User Stories) to your test plan
  - Each requirement becomes its own test suite
- You can then add one or more test cases to each requirement


Test Plans > Sprint 2

Sprint 2

- Run test
- Run with options
- New static suite
- New requirement-based suite
- New query-based suite

CREATE REQUIREMENT-BASED SUITES

Type of query: Flat list of work items

Filters for top level work items

And/Or	Field	Operator	Value
	Work Item Type	In Group	Microsoft.RequirementCategory
And	Iteration Path	=	Fabrikam\Sprint 2

Add new clause

Run query

ID	Work Item Type	Title	Priority	Assigned To	Area Path
823	Product Backlog Item	Enable network alert heartbeat	2	Paula	Fabrikam\Dashboard\Alerts
837	Product Backlog Item	Profile doesn't update	2	Paula	Fabrikam\Profile
824	Product Backlog Item	Quick Tips	2	Paula	Fabrikam\Dashboard\Messages

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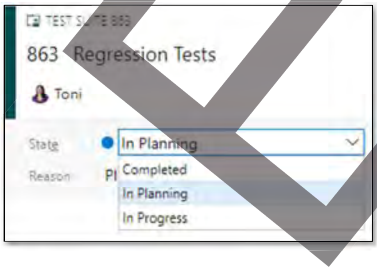
Test Suite States

- Indicate whether you are ready to run the tests or whether the tests have all completed
- *In Planning*
  - Test cases in the suite are not yet ready to run
- *In Progress*
  - Test cases in the suite can be run
- *Completed*
  - When you have finished running the tests in this test suite and the quality level reached meets your goals


TEST SUITE 863

863 Regression Tests

Toni

State: In Planning

Reason: Pl

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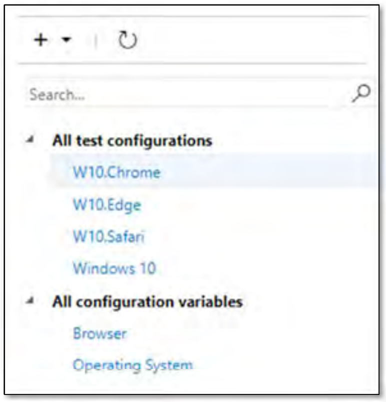
Test Configurations

- A test configuration is a set of configuration variables that specify the setup requirements for a test plan (o/s, browser, types, versions)
- Note: You cannot delete a configuration that is referenced in a test result or that is configured for a test plan/suite
  - Instead, you should change the state of the configuration to *inactive* so that it can no longer be selected as a default configuration



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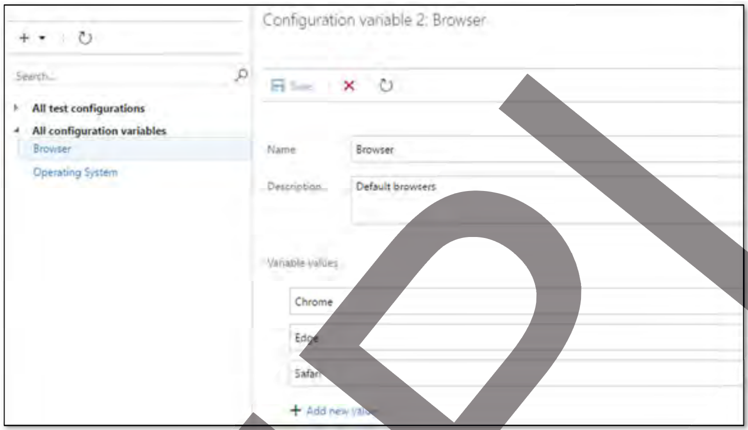
Configuration Variables

- You can add new variables and allowed values
  - Examples: Operating system, browser, language, hardware, architecture, service pack, etc.



Configuration variable 2: Browser

Name: Browser

Description: Default browsers

Variable values:

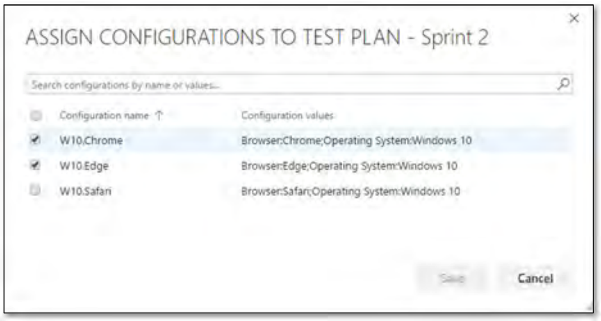
Chrome

Edge

Safari

Assigning Test Configurations

- Test configurations can be assigned to a test plan or suite so when you add test cases, those configurations are applied
  - These pairings are called "test points"
  - The defaults can be overridden for the individual test cases
  - If you add a new configuration, the test points are not created for existing test cases

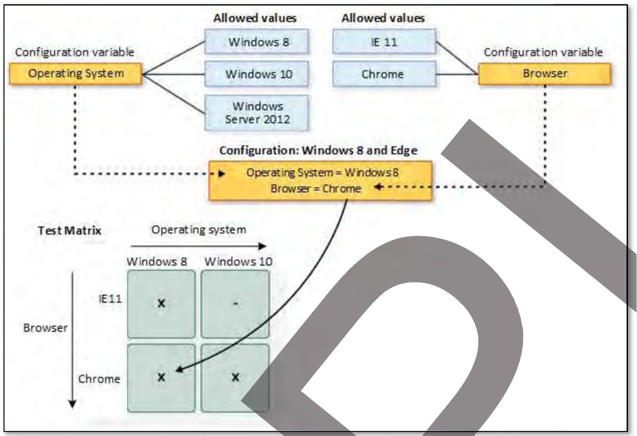


ASSIGN CONFIGURATIONS TO TEST PLAN - Sprint 2

☐	Configuration name ↑	Configuration values
☑	W10.Chrome	Browser:Chrome;Operating System:Windows 10
☑	W10.Edge	Browser:Edge;Operating System:Windows 10
☐	W10.Safari	Browser:Safari;Operating System:Windows 10

Defining Your Test Matrix

- Each test configuration can represent an entry in your test matrix



	Windows 8	Windows 10
IE11	x	-
Chrome	x	x

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Test Cases

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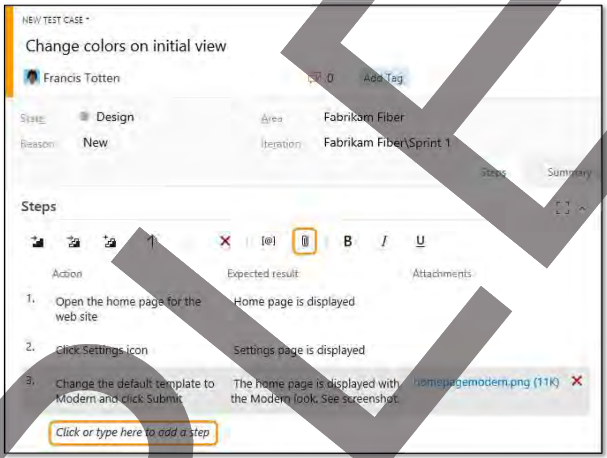
Test Cases

- Typically represent a manual test
  - Can be associated with automation
  - They are just work items
- Test Steps
  - Contain actions, expected results, and even attachments
  - Use parameters to run a test case multiple times with different data
  - Use Shared Steps to improve maintainability



Change colors on initial view

Francis Totten

State: Design
Reason: New
Area: Fabrikam Fiber
Iteration: Fabrikam Fiber\Sprint 1

Steps

	Action	Expected result	Attachments
1.	Open the home page for the web site	Home page is displayed	
2.	Click Settings icon	Settings page is displayed	
3.	Change the default template to Modern and click Submit	The home page is displayed with the Modern look. See screenshot.	homepagemodern.png (11K)

Click or type here to add a step

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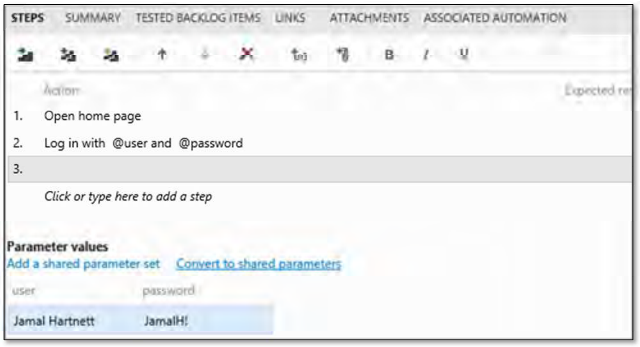
Parameters

- Enable a test to be repeated *n* times with different test data
  - Insert parameters (prefixed with “@”) in your test steps
  - Provide a table of parameter values with *n* sets of values
- You can use shared parameters to share data across multiple test cases
  - Convert existing parameters to shared parameters



	Action	Expected re
1.	Open home page	
2.	Log in with @user and @password	
3.		

Click or type here to add a step

Parameter values

user	password
Jamal Hartnett	JamalH!

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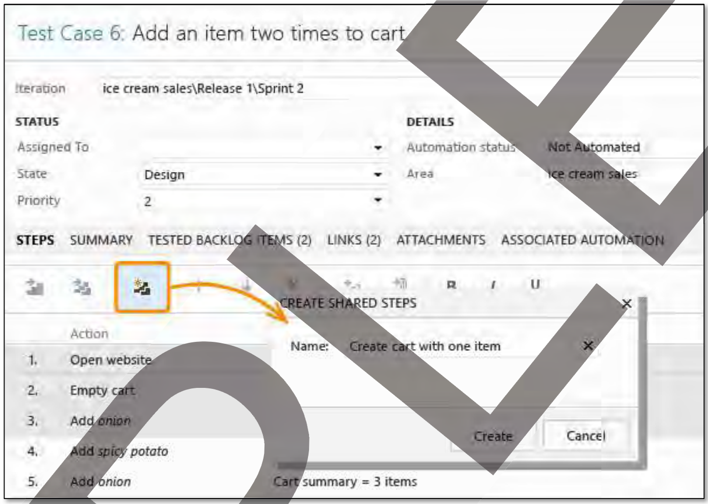
Shared Steps

- Shared steps allow you to define a sequence of steps once and reuse it from multiple test cases
  - Shared steps are created by converting existing test steps
- “Shared steps” is a hidden work item type
  - You can query and manage them in the Work hub



Test Case 6: Add an item two times to cart

Iteration: ice cream sales\Release 1\Sprint 2

STATUS

Assigned To:

State: Design

Priority: 2

DETAILS

Automation status: Not Automated

Area: ice cream sales

	Action	
1.	Open website	
2.	Empty cart	
3.	Add *onion*	
4.	Add *spicy potato*	
5.	Add *onion*	Cart summary = 3 items

CREATE SHARED STEPS

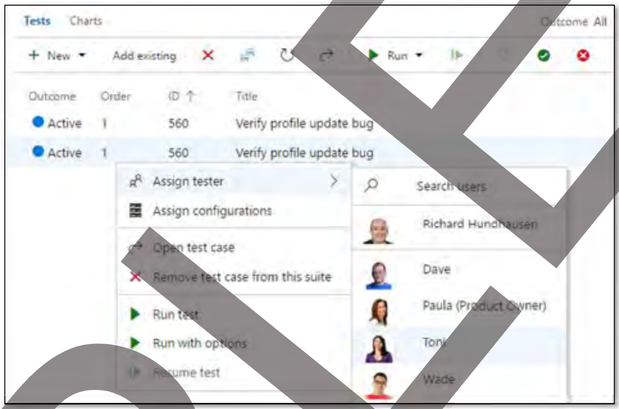
Name: Create cart with one item

Benefits of Using Shared Steps

- Shared Steps reduce test maintenance by sharing test steps across test cases
- You can add parameters to your shared steps to use them in test cases where you want to run the same test multiple times with different data

Assigning Testers

- By default, tests are assigned to be run by the user that is assigned to the test case
  - You can assign a different tester to one or more tests or test points (configurations)
  - This does not change the user who is assigned to the test case



Outcome	Order	ID ↑	Title
● Active	1	560	Verify profile update bug
● Active	1	560	Verify profile update bug

- Testers can also be assigned to the test plan or a test suite
  - Invitation emails can also be sent

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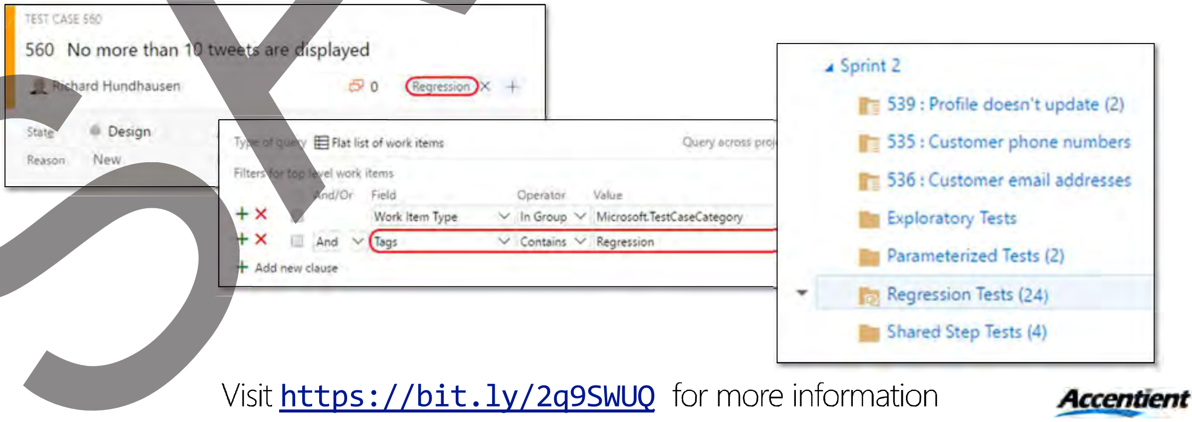
Regression Test Suites

- Use tags and a query-based suite for maximum control over what test cases are in your regression suite
  - Simply add or remove a tag to control what tests are in or out



560 No more than 10 tweets are displayed

State: Design
Reason: New

Type of query: Flat list of work items

Filters for top level work items

And/Or	Field	Operator	Value
	Work Item Type	In Group	Microsoft.TestCaseCategory
And	Tags	Contains	Regression

- Sprint 2
  - 539 : Profile doesn't update (2)
  - 535 : Customer phone numbers
  - 536 : Customer email addresses
  - Exploratory Tests
  - Parameterized Tests (2)
  - Regression Tests (24)
  - Shared Step Tests (4)

Visit https://bit.ly/2q9SWUQ for more information

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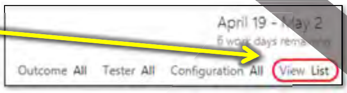
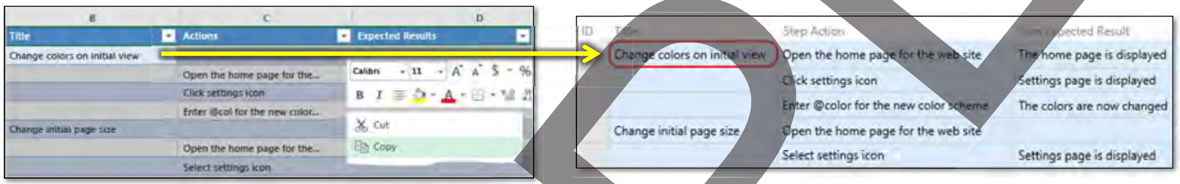
Importing Test Cases From Excel

- Grid View allows multiple test cases to be added at once
  - Click “List” to enter Grid view
  - Copy multiple rows with three columns that map to title, step action, and step expected results
  - Paste these columns into the Title column of a new/first row
  - No column formatting, other than multiline, is copied


April 19 - May 2
6 work days remaining

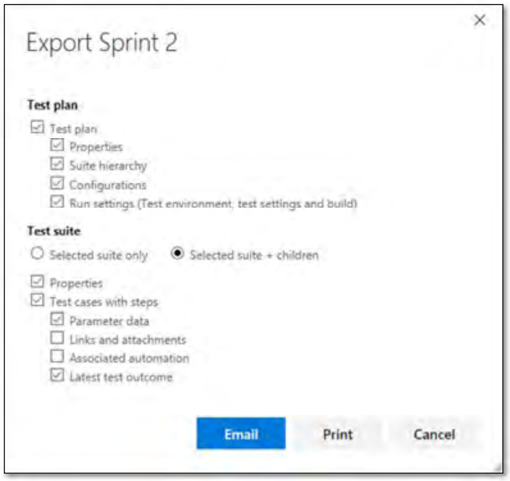


Title	Actions	Expected Results
Change colors on initial view		
	Open the home page for the...	
	Click settings icon	
	Enter @col for the new color...	
Change initial page size		
	Open the home page for the...	
	Select settings icon	

ID	Title	Step Action	Step Expected Result
	Change colors on initial view	Open the home page for the web site	The home page is displayed
		Click settings icon	Settings page is displayed
		Enter @color for the new color scheme	The colors are now changed
	Change initial page size	Open the home page for the web site	
		Select settings icon	Settings page is displayed

Exporting Test Artifacts

- Many artifacts can be exported
  - Test plan
  - Test suites
  - Test cases
- Right-click on the test plan or any test suite and select Export
  - Choose the artifacts and properties
  - Email or print options


Export Sprint 2

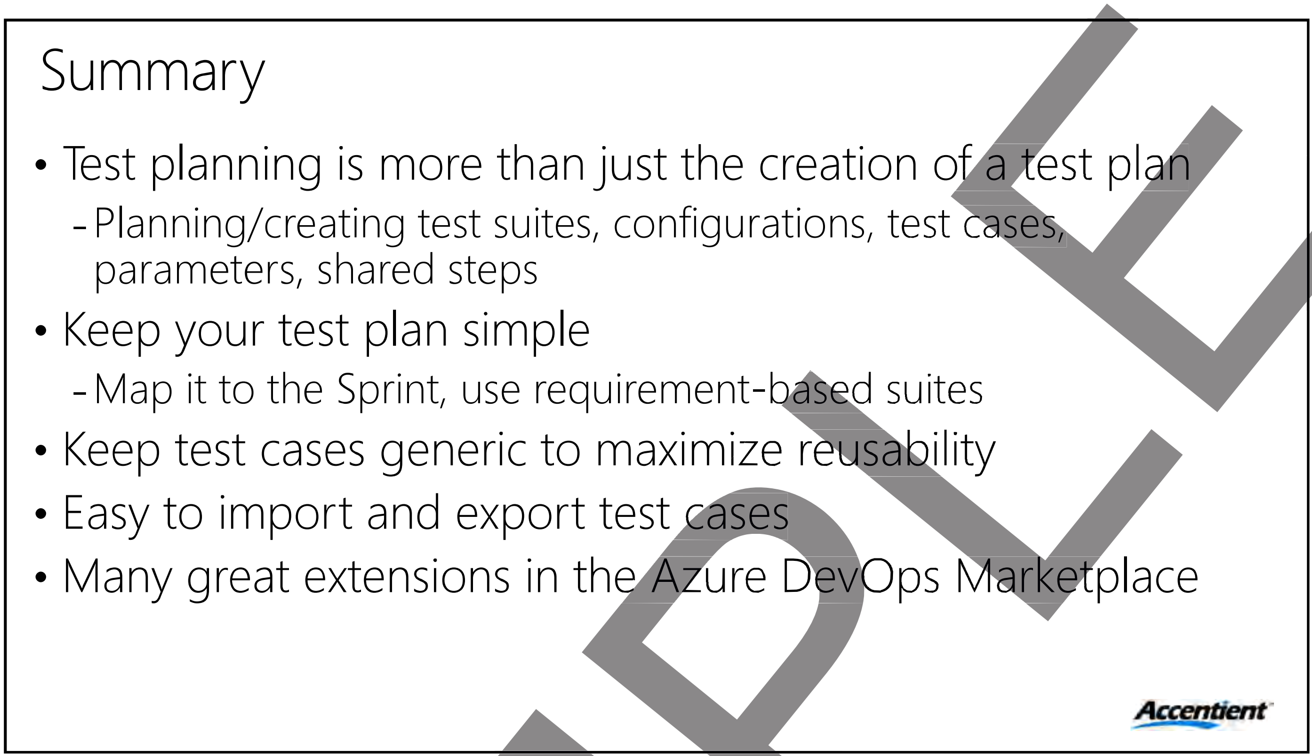
Test plan

☑ Test plan
- ☑ Properties
- ☑ Suite hierarchy
- ☑ Configurations
- ☑ Run settings (Test environment, test settings and build)

Test suite

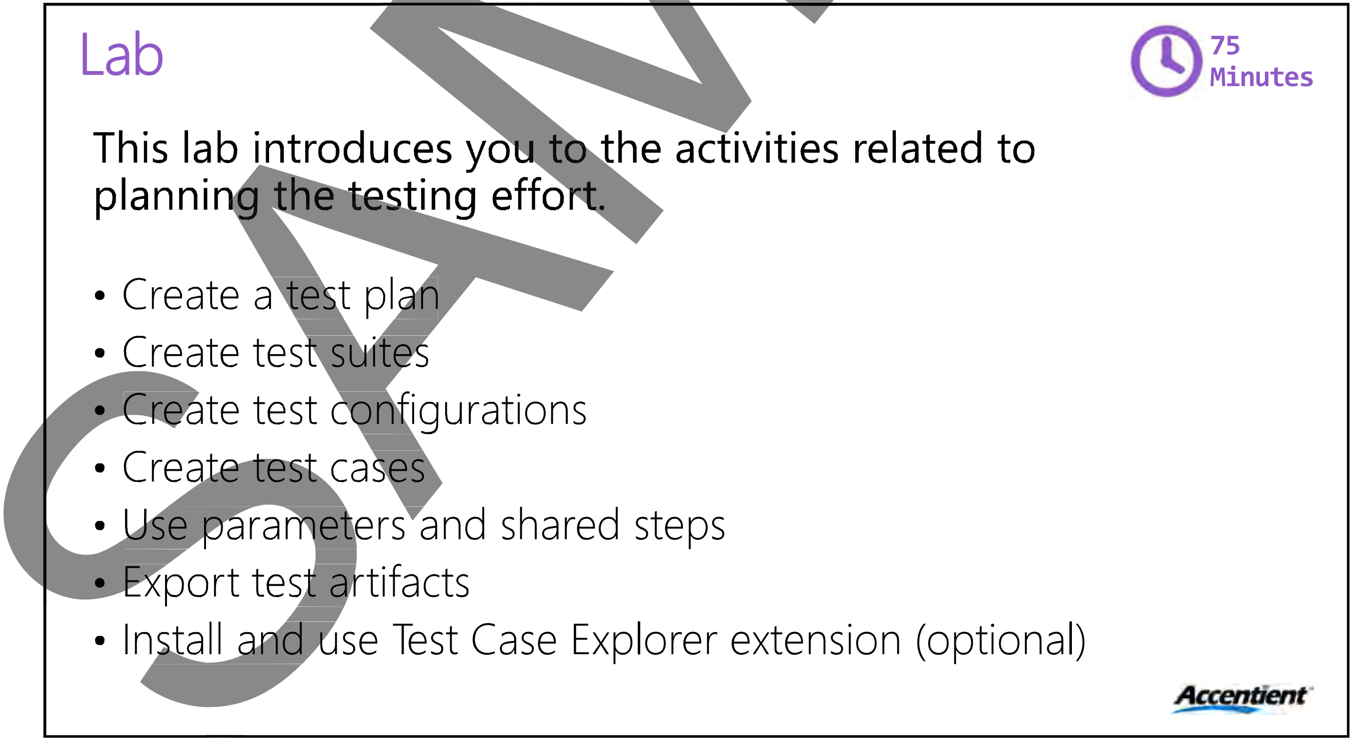
○ Selected suite only ● Selected suite + children

☑ Properties
☑ Test cases with steps
- ☑ Parameter data
- □ Links and attachments
- □ Associated automation
- ☑ Latest test outcome



Summary

- Test planning is more than just the creation of a test plan
  - Planning/creating test suites, configurations, test cases, parameters, shared steps
- Keep your test plan simple
  - Map it to the Sprint, use requirement-based suites
- Keep test cases generic to maximize reusability
- Easy to import and export test cases
- Many great extensions in the Azure DevOps Marketplace



Lab

75 Minutes

This lab introduces you to the activities related to planning the testing effort.

- Create a test plan
- Create test suites
- Create test configurations
- Create test cases
- Use parameters and shared steps
- Export test artifacts
- Install and use Test Case Explorer extension (optional)

Lab 2: Test Planning

Assuring Quality Using Azure Test Plans

LAB OVERVIEW

There are many steps to test planning. Besides the collaboration that you and your team will do, there are also a number of tasks inside Azure Test Plans that have to be performed before you can start executing tests and tracking results

In this lab you will create a test plan and test suites. You will create and associate a test configuration and then create a number of different test cases.

Estimated time to complete this lab: **75 minutes**

Task Execution

As this is a team-based training course, there are a number of opportunities for team members to learn to collaborate more effectively. Unfortunately, there is a possibility for team members to accidentally impede, block, or otherwise cause unintentional conflicts. To minimize the possibility of conflicts, critical tasks in this course have been marked with an icon indicating who on the team should execute the task:

- ●●● The team can self-organize and execute the task however they decide
- ●○○ Only the "leader" should execute this task
- ○●● Only the "followers" (not the leader) should execute this task
- ● Everyone on the team should execute this task
- ●● Everyone on the team should execute this task (working in pairs)

Tip: Look for the "leader" ●○○ tasks and ensure that they are only performed once per team. Also, ensure that the "follower" ○●● tasks are only performed by everyone else (not the leader).

Teams of One

If you are working by yourself and not on a team, make sure to perform all of the "leader" ●○○ tasks, and none of the "follower" ○●● tasks. This scenario is common for students learning remotely.

EXERCISE 1 – CREATE THE TEST PLAN

Task: Install Test Manager Extension

In this task the user who created the Azure DevOps Services organization will install the **Test Manager** extension and start the free trial period.

Who will be installing this extension? ____

<u>Note</u>: This task can be skipped if everyone on the team has a *Visual Studio Enterprise* subscription.

1. If necessary, launch **Chrome** and navigate to your team project.

2. Click the icon in the upper right and select **Browse Marketplace**.

3. Search for and select the **Test Manager** extension by **Microsoft**.

   The *Test Manager* extension provides a comprehensive set of testing features in your Azure DevOps organization, including the use of Visual Studio Test Professional 2015 or later. Coordinate all test management activities, including test planning, authoring, execution and tracking - from a central location. The Test hub gives your team critical insight into progress against defined acceptance criteria and quality metrics.

4. **Get** the extension and then **Start** the free trial for your Azure DevOps Services organization.

   When will your free trial end? ____

5. Return to your team project and press **F5**.

Task: Create a Test Plan

In this task someone on your team will create a test plan for Sprint 2.

A test plan lets you specify what you want to test and how to run those tests. A test plan can be applied to a specific iteration (Sprint) of your project.

Who will be creating the test plan for your team? ____

1. If necessary, launch **Chrome**, navigate to your team project, and press F5.

2. From the **Test Plans** hub, go to the **Test Plans** page.

3. On the **Test Plans** page, click **+ New Test Plan**.

4. Name the plan **Sprint 2**, ensure the Iteration is set to **Fabrikam\Sprint 2**, and click **Create**.

Task: Create Test Suites

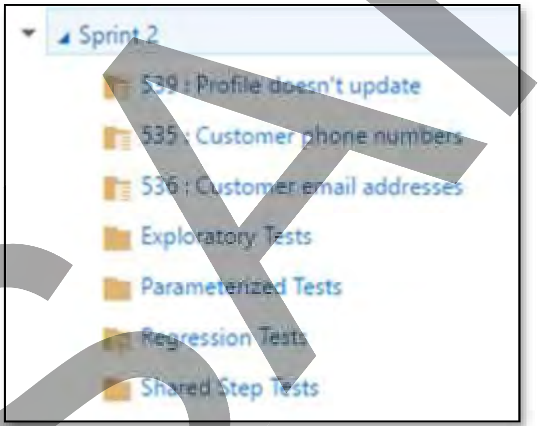
In this task your team will self-organize and create some test suites in the new test plan.

1. If necessary, launch **Chrome** and navigate to the **Test Plans** page in the Test Plans hub.

2. On the **Test Plans** page, right-click on the **Sprint 2** test plan and create the following suites:

Type of Suite	Name	Details
Requirement-based	n/a	• Remove the **Area Path** clause • Add a new clause **Iteration Path = Fabrikam\Sprint 2** • Run the query, select all the Product Backlog Items, and create the suites
Requirement-based	n/a	• Change the group to **Microsoft.BugCategory** • Remove the **Area Path** clause • Add a new clause **Iteration Path = Fabrikam\Sprint 2** • Run the query, select all the Bug work items, and create the suites Note: You may not have any Bug work items to add.
Static	**Exploratory Tests**	n/a
Static	**Parameterized Tests**	n/a
Static	**Shared Step Tests**	n/a
Query-based	**Regression Tests**	• Remove the **Area Path** clause • Add a new clause **Tags Contains Regression**

After the test suites are created, your test plan should look something like this example:



Sprint 2
- 539 : Profile doesn't update
- 535 : Customer phone numbers
- 536 : Customer email addresses
- Exploratory Tests
- Parameterized Tests
- Regression Tests
- Shared Step Tests

Tip: You can drag and drop test suites to change their order.

Task: Review Test Configurations 👤 or 👤👤

In this task each team member, or pair of team members, will review the default test configurations and configuration variables.

1. Navigate to the **Configurations** page in the Test Plans hub.

1. Go to the **Configurations** page.

   What test configuration(s) are listed? ____

   What configuration variable(s) are listed? ____

2. Click the **Browser** configuration variable.

   How many values are listed? ____

3. Click the **Operating System** configuration variable.

   How many values are listed? ____

4. Click the **Windows 10** test configuration.

   What configuration variables are listed at the bottom? ______________________________________

Task: Create New Test Configurations 👤👤👤

In this task your team will self-organize and make updates to the configuration variables and create two new test configurations.

1. Make the necessary changes to the **Browser** configuration variables so that these are the only values listed:

   - **Chrome**
   - **Edge** (you can drop the "Microsoft")
   - **Safari**

2. Make the necessary changes to the **Operating System** configuration variables so that these are the only values listed:

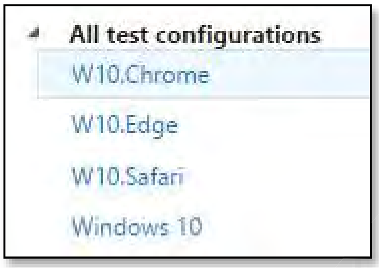
   - **Windows 10**

3. Add three new Test Configurations:

Name	Description	Configuration Variables	Assign to new test plans?
W10.Chrome	**Windows 10 + Chrome**	- Operating System: **Windows 10** - Browser: **Chrome**	✓
W10.Edge	**Windows 10 + Edge**	- Operating System: **Windows 10** - Browser: **Edge**	
W10.Safari	**Windows 10 + Safari**	- Operating System: **Windows 10** - Browser: **Safari**	

4. Edit the original **Windows 10** configuration, set it **Inactive**, clear the **Assign to new test plans** option, and save your changes.

   You should now have three new, active configurations and an older, inactive one:



All test configurations
W10.Chrome
W10.Edge
W10.Safari
Windows 10

Task: Associate Test Configurations

In this task one member of your team will associate the new test configurations with the Sprint 2 test plan.

Who will be associating the test configurations? ____

1. Navigate to the **Test Plans** page in the Test Plans hub.

2. Right-click on the **Sprint 2** plan (root test suite) and select **Assign configurations to test plan**.

   What configuration(s) are currently selected? ____

3. Ensure that only the **W10.Chrome** and **W10.Edge** configurations are checked and click **Save**.

   At this point, any new test cases which are added to the Sprint 2 test plan will have these configurations enabled. A specific test suite may break this inheritance chain and use a different set of configurations however.

EXERCISE 2 – CREATE TEST CASES

Task: Create a Test Case 👤 or 👤👤

In this task each team member, or pair of team members, will create a test case.

Important: Each team member, or pair of team members, will be creating the *same* test case. The only difference will be the name of the test case.

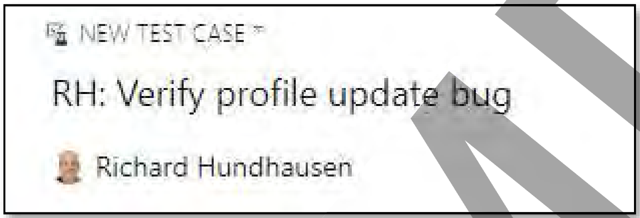
1. If necessary, navigate to the **Test Plans** page in the Test Plans hub.

2. On the **Test Plans** page, select the **Profile doesn't update** test suite on the left.

3. Click + **New** and select **New test case**.

4. Specify a **Title** of **XX: Verify profile update bug**.

   Where XX = your initials. Make sure the initials are unique on your team. Here is an example:



NEW TEST CASE *

RH: Verify profile update bug

Richard Hundhausen

5. On the **Summary** tab, enter the following **Description**:

   When changing my profile information through the Employees link, any changes to my first or last name are not reflected in the profile.

6. Click **Save & Close**.

   At this point, the test case has enough information that a competent tester should be able to go about verifying the existence of the bug. You're going to make it more understandable and provide the actual test steps in the next task.

   Do you see two copies of the new test case? ____

   Azure Test Plans has created two test points, one for each configuration (Chrome and Edge).

Task: Create Test Steps 👤 or 👤👤

In this task each team member, or pair of team members, will specify the actual test steps for the new test case.

1. Double-click your **XX: Verify profile update bug** test case to open it.

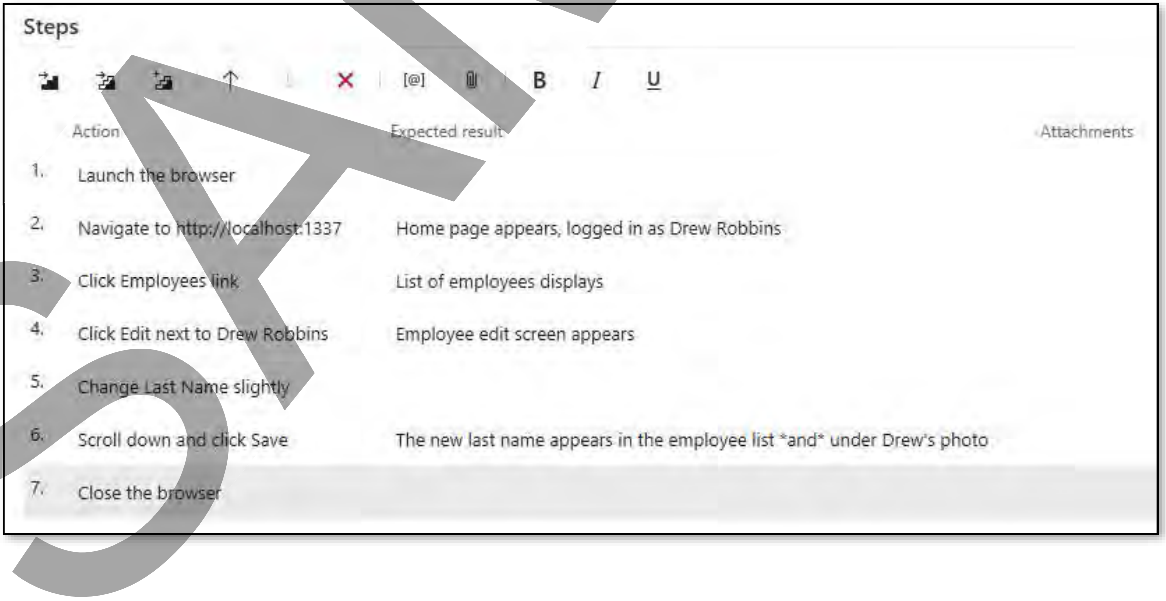
   Note: You can double-click either test point. It will open the same underlying test case.

2. In the **Steps** field, enter the following actions and expected results:

   Tip: Press enter after entering the *Expected Result* to automatically go to the next step.

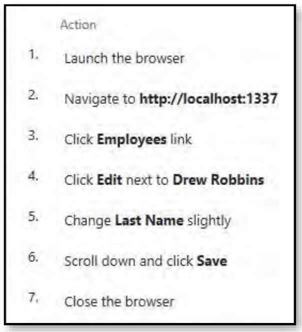
Action	Expected Result
`Launch the browser`	
`Navigate to http://localhost:1337`	`Home page appears, logged in as Drew Robbins`
`Click Employees link`	`List of employees displays`
`Click Edit next to Drew Robbins`	`Employee edit screen appears`
`Change Last Name slightly`	
`Scroll down and click Save`	`The new last name appears in the employee list *and* under Drew’s photo`
`Close the browser`	

After entering the information, the steps should look like this:



	Action	Expected result	Attachments
1.	Launch the browser		
2.	Navigate to http://localhost:1337	Home page appears, logged in as Drew Robbins	
3.	Click Employees link	List of employees displays	
4.	Click Edit next to Drew Robbins	Employee edit screen appears	
5.	Change Last Name slightly		
6.	Scroll down and click Save	The new last name appears in the employee list *and* under Drew's photo	
7.	Close the browser		

3. Make the important items appear in bold, something like this:



Action

1. Launch the browser
2. Navigate to **http://localhost:1337**
3. Click **Employees** link
4. Click **Edit** next to **Drew Robbins**
5. Change **Last Name** slightly
6. Scroll down and click **Save**
7. Close the browser

There are a number of rich formatting options available to make the step text more interesting.

4. Click **Save & Close**.

Task: Create a Parameterized Test Case 👤 or 👥

If you want to run a manual test case multiple times with different data, you do not have to create multiple copies of the test case. You can add parameters to the actions or expected results for any test step in your test case.

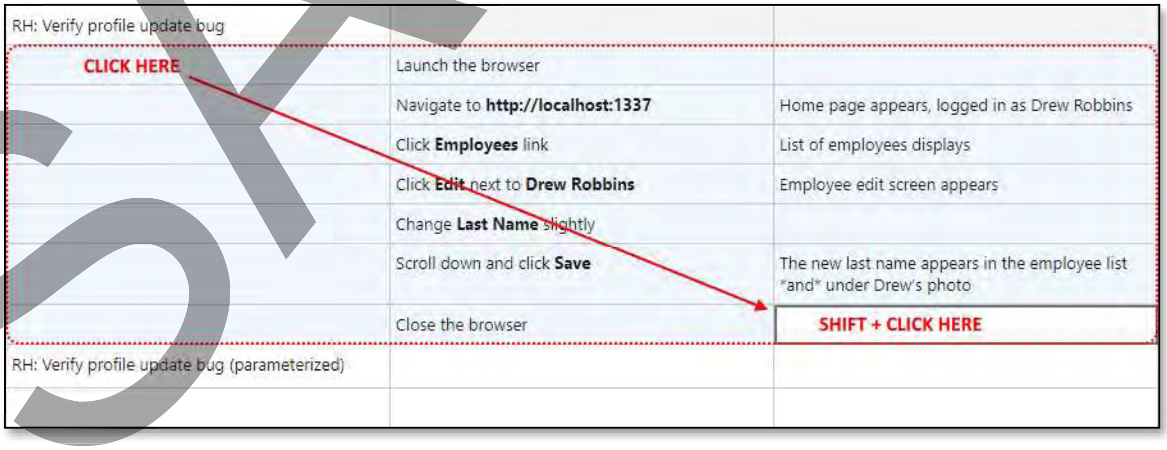
In this task each team member, or pair of team members, will **create a copy** of the test case you just created, edit it, and add a parameter in order to simplify testing across a diverse testing environment.

1. Change to **Grid** view by clicking **List** in the upper right.

2. In the next available row, enter the Title ***XX*: Verify profile update bug (parameterized)** where *XX* = your initials.

3. Find your **XX: Verify profile update bug** test case in the grid and select all of the steps.

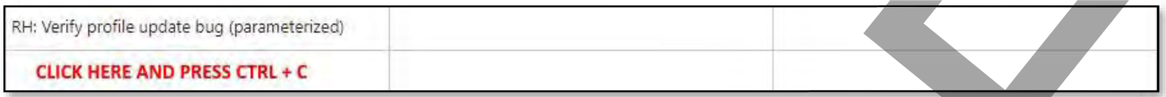
   You can do this by clicking on the step row and column and then shift + clicking on the last step row and column, as in this example:



RH: Verify profile update bug		
	Launch the browser	
	Navigate to **http://localhost:1337**	Home page appears, logged in as Drew Robbins
	Click **Employees** link	List of employees displays
	Click **Edit** next to **Drew Robbins**	Employee edit screen appears
	Change **Last Name** slightly	
	Scroll down and click **Save**	The new last name appears in the employee list *and* under Drew's photo
	Close the browser	
RH: Verify profile update bug (parameterized)		

4. Press **Ctrl + C** to copy the steps to the clipboard.

5. In the first row below your new ***XX*****: Verify profile update bug (parameterized)** test case title, put the cursor in the first column and press **Ctrl + V** to paste the copied cells.



RH: Verify profile update bug (parameterized)

CLICK HERE AND PRESS CTRL + C

This is an easy way to duplicate test steps. Shared steps is another way, which we'll be learning about shortly.

6. Click 💾 to save the test case.

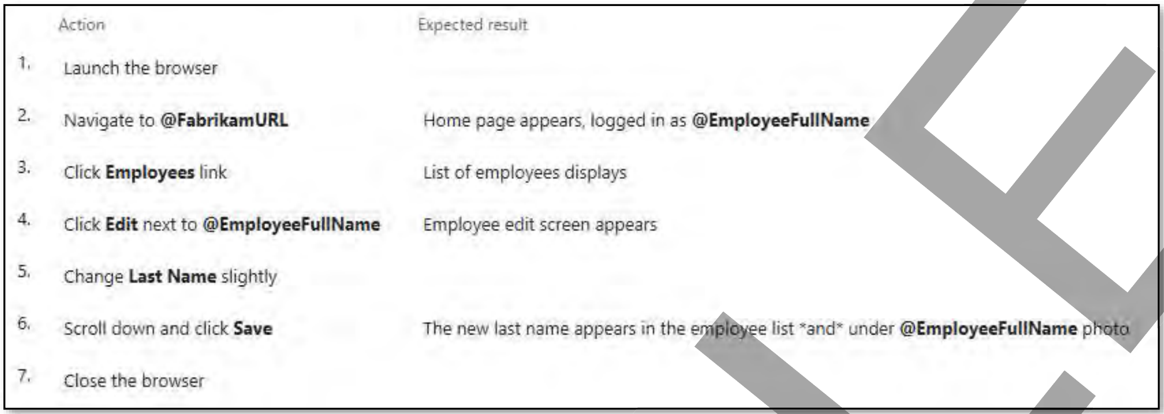
7. Return to the **List** view.

   How many test points do you have now? ____

8. Double-click the **XX: Verify profile update bug (parameterized)** test case and update the steps, replacing the hard-coded values with parameters:

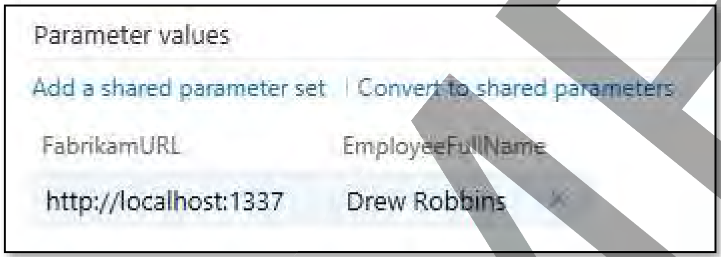
Action	Expected Result
Launch the browser	
Navigate to **@FabrikamURL**	Home page appears logged in as **@EmployeeFullName**
Click Employees link	List of employees displays
Click Edit next to **@EmployeeFullName**	Employee edit screen appears
Change Last Name slightly	
Scroll down and click Save	The new last name appears in the employee list *and* under **@EmployeeFullName** photo
Close the browser	

After entering the information, the steps should look something like this:



	Action	Expected result
1.	Launch the browser	
2.	Navigate to **@FabrikamURL**	Home page appears, logged in as **@EmployeeFullName**
3.	Click **Employees** link	List of employees displays
4.	Click **Edit** next to **@EmployeeFullName**	Employee edit screen appears
5.	Change **Last Name** slightly	
6.	Scroll down and click **Save**	The new last name appears in the employee list *and* under **@EmployeeFullName** photo
7.	Close the browser	

9. Below the steps, enter **`http://localhost:1337`** and **Drew Robbins** parameter values respectively:



Parameter values

FabrikamURL	EmployeeFullName
http://localhost:1337	Drew Robbins

You can add multiple sets of values for the parameters that you have defined. Each set of values for the parameters is run as an individual iteration of the test.

You can also convert your parameters to *shared parameters*. This gives your team the ability to re-use the same parameter data combinations in multiple test cases. When you update shared parameters, it's reflected in all referenced test cases automatically.

10. Click **Save & Close**.

11. Drag the **XX: Verify profile update bug (parameterized)** test case to the **Parameterized Tests** suite on the left.

Note: You won't be executing this test during class.

EXERCISE 3 – CREATE SHARED STEPS

Task: Create Shared Steps 👤 or 👤👤

You can share steps between manual test cases by creating shared steps. For example, the test steps to log on to an application under test might have to be run in several test cases.

In this task each team member, or pair of team members, will replace some repetitive steps in your test case with shared steps.

1. If necessary, navigate to the **Test Plans** page in the Test Plans hub.

2. Select the **Profile doesn't update** test suite.

3. Change to **Grid** view by clicking **List** in the upper right.

4. Find your **XX: Verify profile update bug** test case in the grid, select all of the test step columns and rows, and press **Ctrl + C**.

   You can do this by clicking on the first column of the first row under the title and then shift + clicking on the last column of the last step. Be careful not to include any test case titles.

5. In the next available row in the grid, enter the Title ***XX*: Verify profile update bug (shared steps)** where *XX* = your initials.

6. In the first row below the new title, put the cursor in the first column and press **Ctrl + V** to paste the copied cells.

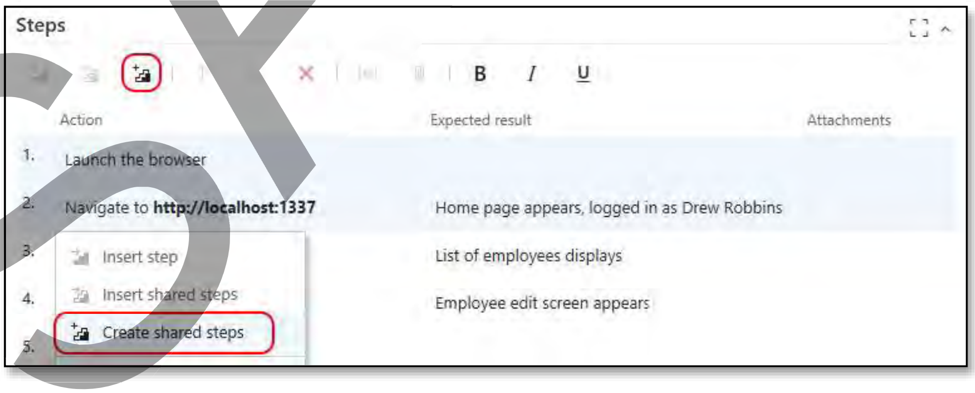
7. Click to save the test case.

8. Return to the **List** view.

9. Double-click the **XX: Verify profile update bug (shared steps)** test case.

10. Select the first two steps, right-click on those selected rows, and select **Create shared steps**.

    You could also have clicked the Create shared steps icon.

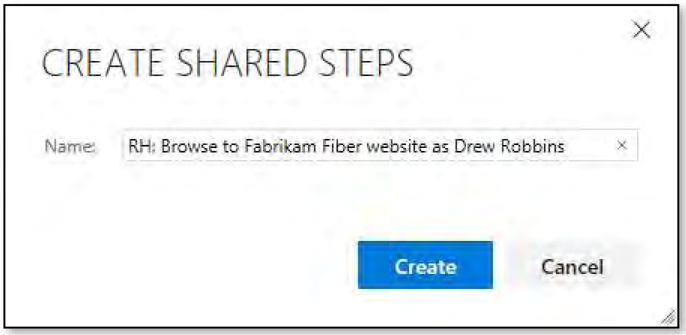


Steps

	Action	Expected result	Attachments
1.	Launch the browser		
2.	Navigate to **http://localhost:1337**	Home page appears, logged in as Drew Robbins	
3.		List of employees displays	
4.		Employee edit screen appears	
5.			

11. Name it ***XX*: Browse to Fabrikam Fiber website as Drew Robbins** and click **Create**.

    Where *XX* = your initials, like in this example:



CREATE SHARED STEPS

Name: RH: Browse to Fabrikam Fiber website as Drew Robbins

    What happened to those selected steps? ____

    The two steps have been replaced with a shared step. **You can also use parameters** within the shared steps. The actual parameter values are typically provided in the test cases that use the shared steps.

12. Click **Save & Close**.

13. Drag the new **XX: Verify profile update bug (shared steps)** test case to the **Shared Step Tests** suite.

Task: Create a Shared Steps Query

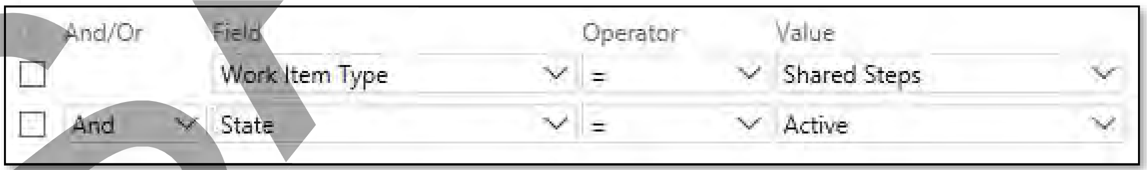
In this task one member of your team will create a new work item query that returns all shared step work items.

Who will be creating the query? ____

1. From the **Boards** hub, select **Queries**.

2. Create a **New query** with two criteria:

   - **Work Item Type = Shared Steps**
   - **State = Active**



	And/Or	Field	Operator	Value
□		Work Item Type	=	Shared Steps
□	And	State	=	Active

3. Click **Save query** at the top.

4. Name the query **Shared Steps** and save it to the **Shared Queries** folder.

   This query is now available for anyone on the team to use, which they will do in the next task.

Task: View, Manage, and Use Shared Steps 👤 or 👤👤

In this task each team member, or pair of team members, will view, manage, and use their shared steps.

1. If necessary, go to **Queries** page on the **Boards** hub.

2. Click **All** at the top to view all queries.

3. Find the **Shared Steps** query and click it to run the query.

   How many *Shared Steps* work items are listed? ____

4. Double-click your shared step.

   This will open the shared steps work item for viewing or editing.

5. Change step 1's Action to **Launch the browser *from the Windows Start page*** and then click **Save**.

6. Click ☆ at the top to add this query to your favorites.

   Favorite queries will appear in the *Mine* list of queries.

7. Return to the **Test Plans** page in the Test Plans hub.

8. Select the **Shared Step Tests** test suite.

9. Click + **New** and select **New test case**.

10. Specify a Title of ***XX*: Verify some other critical bug** where *XX* = your initials.

11. In the **Steps** field, right-click in the first row and select **Insert shared steps**.

12. Click ▶ **Run query** to run the default query.

13. Select your shared steps and click **Insert shared steps**.

14. Double-click on the **XX: Browse to Fabrikam Fiber website as Drew Robbins** step.

    This will open the shared steps work item that you just updated.

    Do you see the new action for step 1 ("from the Windows Start page")? _______________________

15. Close the **Shared Steps** work item without saving any changes.

16. Click **Save & Close**.

    Note: You won't be executing this test during class.

EXERCISE 4 – EXPORT TESTING ARTIFACTS

Task: Export Testing Artifacts 👤 or 👥

You can export test plans, test suites, and test cases. Select the details that you want in the report and then email or print this report for review.

In this task each team member, or pair of team members, will explore the various exporting options.

1. If necessary, navigate to the **Test Plans** page in the Test Plans hub.

2. Right-click on the **Sprint 2** test plan and select 🖶 **Export**.

   You could have also clicked the 🖶 icon on the toolbar. You can also export individual test suites.

   Take a moment and review the various exporting options.

3. Choose the **Selected suite + children** option and click **Email**.

   You can also choose the *Print* option in the Export dialog box. This displays the data in the report allowing you to select all the text, then copy and paste it into another document or email. All the formatting in the report is retained.

4. (Optional) Select yourself as the **To** recipient and click **Send**.

   You can only email this report to existing users as they will need to have access to click any links in the body of the email. If you haven't configured email, or don't want to, then you can skip this step and click *Cancel* instead.

   Also, consider installing and using the *Enhanced Export* extension created by fellow MVP Mattias Sköld. You can find it on the Azure DevOps Marketplace: http://bit.ly/2oAwdTH.

Enhanced Export

Mattias Sköld 6.3K

Export Work Item Queries and Test Plans to word using customizable templates...

EXERCISE 5 – INSTALL THE TEST CASE EXPLORER EXTENSION (OPTIONAL)

Task: Install the Test Case Explorer Extension 👤👤👤

In this task the user who created the Azure DevOps Services organization will install the Test Case Explorer extension.

Who will be installing this extension? ____

1. If necessary, launch **Chrome** and navigate to your team project.

2. Click the icon in the upper right and select **Browse Marketplace**.

3. Search for and select the **Test Case Explorer** extension by **Microsoft DevLabs**.

   The *Test Case Explorer* extension manages your test cases better. You can find, filter, analyze usage of test cases, and more.

4. Install the **Test Case Explorer** extension into your Azure DevOps Services organization and then return to the team project**.**

Task: Use the Test Case Explorer 👤 or 👤👤

In this task each team member, or pair of team members, will use some of the features of the Test Case Explorer extension.

1. From the **Test Plans** hub, go to the **Test Cases** page.

   You may need to press F5 to refresh the hub to see the new extension.

2. Change the *Pivot by* option to **Test plan** in the upper left.

   This view should look similar to the *Test Plans* page. Notice that you can pivot by many dimensions: area path, iteration path, priority, state, as well as test plan.

3. Select the **Profile doesn't update** test suite on the left.

   This will display the test cases (without configurations) found in this test suite.

   Notice that you can change the columns and filter the test cases. You can also show/hide a details pane showing all of the test suites that this test case belongs to. Very nice.

4. Change the Pivot by option to **Area Path** in the upper left.

5. Ensure that the **Fabrikam** (root) area is selected.

6. Drag any test case(s) to the **Profile** area on the left.

   This is quick way to assign multiple test cases to an area, iteration, state, etc.