**Lab: Sharing Team Knowledge using Azure Project Wikis**

**Student lab manual**

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**Lab overview**

In this lab, you will create and configure wiki in an Azure DevOps, including managing markdown content and creating a Mermaid diagram.

**Objectives**

After you complete this lab, you will be able to:

* Create a wiki in an Azure Project
* Add and edit markdown
* Create a Mermaid diagram

**Lab duration**

* Estimated time: **45 minutes**

**Instructions**

**Before you start**

**Review the installed applications**

Find the taskbar on your Windows desktop. The taskbar contains the icons for the applications that you'll use in this lab:

* Microsoft Edge

**Set up an Azure DevOps organization.**

If you don't already have an Azure DevOps organization that you can use for this lab, create one by following the instructions available at [Create an organization or project collection](https://docs.microsoft.com/en-us/azure/devops/organizations/accounts/create-organization?view=azure-devops).

**Exercise 0: Configure the lab prerequisites**

In this exercise, you will set up the prerequisites for the lab, which consist of the preconfigured **Tailwind Traders** team project based on an Azure DevOps Demo Generator template and a team created in Microsoft Teams.

**Task 1: Configure the team project**

In this task, you will use Azure DevOps Demo Generator to generate a new project based on the **Tailwind Traders** template.

1. On your lab computer, start a web browser and navigate to [Azure DevOps Demo Generator](https://azuredevopsdemogenerator.azurewebsites.net/). This utility site will automate the process of creating a new Azure DevOps project within your account that is prepopulated with content (work items, repos, etc.) required for the lab.

**Note**: For more information on the site, see <https://docs.microsoft.com/en-us/azure/devops/demo-gen>.

1. Click **Sign in** and sign in using the Microsoft account associated with your Azure DevOps subscription.
2. If required, on the **Azure DevOps Demo Generator** page, click **Accept** to accept the permission requests for accessing your Azure DevOps subscription.
3. On the **Create New Project** page, in the **New Project Name** textbox, type **Sharing Team Knowledge using Azure Project Wikis**, in the **Select organization** dropdown list, select your Azure DevOps organization, and then click **Choose template**.
4. In the list of templates, select the **Tailwind Traders** template and click **Select Template**.
5. Back on the **Create New Project** page, if prompted to install a missing extension, select the checkbox below the **ARM Outputs** and click **Create Project**.

**Note**: Wait for the process to complete. This should take about 2 minutes. In case the process fails, navigate to your DevOps organization, delete the project, and try again.

1. On the **Create New Project** page, click **Navigate to project**.

**Exercise 1: Publish code as wiki**

In this exercise, you will step through publishing an Azure DevOps repository as wiki and managing the published wiki.

**Note**: Content that you maintain in a Git repository can be published to an Azure DevOps wiki. For example, content written to support a software development kit, product documentation, or README files can be published directly to a wiki. You have the option of publishing multiple wikis within the same Azure DevOps team project.

**Task 1: Publish a branch of an Azure DevOps repo as wiki**

In this task, you will publish a branch of an Azure DevOps repo as wiki.

**Note**: If your published wiki corresponds to a product version, you can publish new branches as you release new versions of your product.

1. On you lab computer, in the Azure DevOps portal displaying the **Sharing Team Knowledge using Azure Project Wikis** project, in the vertical menu on the left side, in the **Overview** section, click **Wiki** and review the existing content.
2. In the vertical menu on the left side, click **Repos**, in the upper section of the **Files** pane, make sure you have the **TailwindTraders-Website** repo selected (choose it from the dropdown on the top with Git icon). In the branch dropdown list (on top of "Files" with the branch icon), select **main**, and review the content of the main branch.
3. To the left of the **Files** pane, in the listing of the repo folder and file hierarchy, expand the **Documents** folder and its **Images** subfolder, in the **Images** subfolder, locate the **Website.png** entry, hover with the mouse pointer over its right end to reveal the vertical ellipsis (three dots) symbol representing the **More** menu, click **More**, and, in the dropdown menu, click **Download** to download the **Website.png** file to the local **Downloads** folder on your lab computer.

**Note**: You will use this image in the next exercise of this lab.

1. In the vertical menu on the left side, click **Overview**, in the **Overview** section, select **Wiki**, in the upper section of the pane, select the **Tailwind Traders** dropdown menu header, and, in the dropdown list, select **Publish code as wiki**.
2. On the **Publish code as wiki** pane, specify the following settings and click **Publish**.

| **Setting** | **Value** |
| --- | --- |
| Repository | **TailwindTraders-Website** |
| Branch | **main** |
| Folder | **/Documents** |
| Wiki name | **Tailwind Traders (Documents)** |

1. **Note**: This will automatically display the content of the **README** file.
2. Review the content of **GitHubActions** file and note the overall structure of the wiki, matching the structure of the underlying repo.
3. In the upper section of the pane, select the **Tailwind Traders (Documents)** dropdown menu header and note that you can easily switch between this and previously published wiki.

**Task 2: Manage content of a published wiki**

In this task, you will manage content of the wiki you published in the previous task.

1. In the vertical menu on the left side, click **Repos**, ensure that the dropdown menu in the upper section of the **Files** pane displays the **TailwindTraders-Website** repo and **main** branch, in the repo folder hierarchy, select the **Documents** folder, in the upper right corner, click **+ New** and, in the dropdown menu, click **File**.
2. In the **New file** panel, in the **New file name**, after the **/Documents/** prefix, type **.order**, and click **Create**.
3. On the **Contents** tab of the **.order** pane, type the following and click **Commit**.
4. GitHubActions
5. Images
6. On the **Commit** pane, click **Commit**.
7. In the vertical menu on the left side, click **Overview**, in the **Overview** section, select **Wiki**, verify that **Tailwind Traders (Documents)** appears in the upper section of the pane, and review the ordering of wiki content.

**Note**: The order of wiki content should match the sequence of files and folders listed in the **.order** file.

1. In the vertical menu on the left side, click **Repos**, ensure that the dropdown menu in the upper section of the **Files** pane displays the **TailwindTraders-Website** repo and **main** branch, in the listing of files, under **Documents**, select **GitHubActions.md**, and on the **GitHubActions.md** pane, click **Edit**.
2. On the **GitHubActions.md** pane, directly below the #GitHub Actions header, add the following markdown element referencing one of the images within the **Documents** folder:
3. ![Tailwind Traders Website](Images/Website.png)
4. On the **GitHubActions.md** pane, click **Commit** and, on the **Commit** pane, click **Commit**.
5. On the **Preview** tab of the **GitHubActions.md** pane, verify that the image is being displayed.
6. In the vertical menu on the left side, click **Overview**, in the **Overview** section, select **Wiki**, verify that **Tailwind Traders (Documents)** appears in the upper section of the pane, and that the content of the **GitHubActions** pane includes the newly referenced image.

**Exercise 2: Create and manage a project wiki**

In this exercise, you will step through creating and managing a project wiki.

**Note**: You can create and manage wiki independently of the existing repos.

**Task 1: Create a project wiki including a Mermaid diagram and an image**

In this task, you will create a project wiki and add to it a Mermaid diagram and an image.

1. On your lab computer, in the Azure DevOps portal displaying the Wiki pane of the **Sharing Team Knowledge using Azure Project Wikis** project, with the content of the **Tailwind Traders (Documents)** wiki selected, at the top of the pane, click the **Tailwind Traders (Documents)** dropdown list header, and, in the drop down list, select **Create new project wiki**.
2. In the **Page title** text box, type **Project Design**.
3. Place the cursor in the body of the page, click the left-most icon in the toolbar representing the header setting and, in the dropdown list, click **Header 1**. This will automatically add the hash character (**#**) at the beginning of the line.
4. Directly after the newly added **#** character, type **Authentication and Authorization** and press the **Enter** key.
5. Click the left-most icon in the toolbar representing the header setting and, in the dropdown list, click **Header 2**. This will automatically add the hash character (**##**) at the beginning of the line.
6. Directly after the newly added **##** character, type **Azure DevOps OAuth 2.0 Authorization Flow** and press the **Enter** key.
7. **Copy and paste** the following code to insert a mermaid diagram on your wiki.
8. ::: mermaid
9. sequenceDiagram
10. participant U as User
11. participant A as Your app
12. participant D as Azure DevOps
13. U->>A: Use your app
14. A->>D: Request authorization for user
15. D-->>U: Request authorization
16. U->>D: Grant authorization
17. D-->>A: Send authorization code
18. A->>D: Get access token
19. D-->>A: Send access token
20. A->>D: Call REST API with access token
21. D-->>A: Respond to REST API
22. A-->>U: Relay REST API response
23. :::

**Note**: For details regarding the Mermaid syntax, refer to [About Mermaid](https://mermaid-js.github.io/mermaid/#/)

1. To the right of the editor pane, in the preview pane, click **Load diagram** and review the outcome.

**Note**: The output should resemble the flowchart that illustrates how to [Authorize access to REST APIs with OAuth 2.0](https://docs.microsoft.com/en-us/azure/devops/integrate/get-started/authentication/oauth?view=azure-devops)

1. In the upper right corner of the editor pane, click the down-facing caret next to the **Save** button and, in the dropdown menu, click **Save with revision message**.
2. In the **Save page** dialog box, type **Authentication and authorization section with the OAuth 2.0 Mermaid diagram** and click **Save**.
3. On the **Project Design** editor pane, place the cursor at the end of the Mermaid element you added earlier in this task, press the **Enter** key to add an extra line, click the left-most icon in the toolbar representing the header setting and, in the dropdown list, click **Header 2**. This will automatically add the double hash character (**##**) at the beginning of the line.
4. Directly after the newly added **##** character, type **User Interface** and press the **Enter** key.
5. On the **Project Design** editor pane, in the toolbar, click the paper clip icon representing the **Insert a file** action, in the **Open** dialog box, navigate to the **Downloads** folder, select the **Website.png** file you downloaded in the previous exercise, and click **Open**.
6. Back on the **Project Design** editor pane, review the preview pane and verify that the image is properly displayed.
7. In the upper right corner of the editor pane, click the down-facing caret next to the **Save** button and, in the dropdown menu, click **Save with revision message**.
8. In the **Save page** dialog box, type **User Interface section with the Tailwind Traders image** and click **Save**.
9. Back on the editor pane, in the upper right corner, click **Close**.

**Task 2: Manage a project wiki**

In this task, you will manage the newly created project wiki.

**Note**: You will start by reverting the most recent change to the wiki page.

1. On you lab computer, in the Azure DevOps portal displaying the Wiki pane of the **Sharing Team Knowledge using Azure Project Wikis** project, with the content of the **Project Design** wiki selected, in the upper right corner, click the vertical ellipsis symbol and, in the dropdown menu, click **View revisions**.
2. On the **Revisions** pane, click the entry representing the most recent change.
3. On the resulting pane, review the comparison between the previous and the current version of the document, click **Revert**, when prompted for the confirmation, click **Revert** again, and then click **Browse Page**.
4. Back on the **Project Design** pane, verify that the change was successfully reverted.

**Note**: Now you will add another page to the project wiki and set it as the wiki home page.

1. On the **Project Design** pane, at the bottom left corner, click **+ New page**.
2. On the page editor pane, in the **Page title** text box, type **Project Design Overview**, click **Save**, and then click **Close**.
3. Back in the pane listing the pages within the **Project Design** project wiki, locate the **Project Design Overview** entry, select it with the mouse pointer, drag and drop it above the **Project Design** page entry.
4. Verify that the **Project Design Overview** entry is listed as the top level page with the home icon designating it as the wiki home page.

**Review**

In this lab, you created and configured Wiki in an Azure DevOps, including managing markdown content and creating a Mermaid diagram.