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EXP NO: 1

AZURE DEVOPS ENVIRONMENT SETUP

AIM

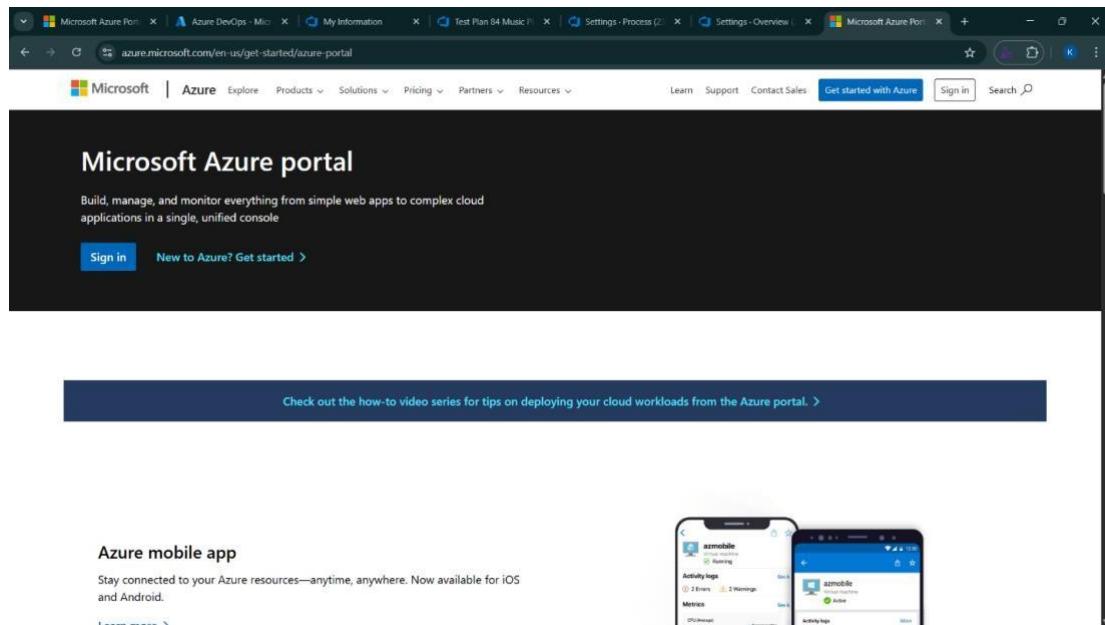
To set up and access the Azure DevOps environment by creating an organization through the Azure portal.

INSTALLATION

1. Open your web browser and go to the Azure website: <https://azure.microsoft.com/en-us/getstarted/azure-portal>.

Sign in using your Microsoft account credentials.

If you don't have a Microsoft account, you can create one here: <https://signup.live.com/?lic=1>



2. Azure home page

The screenshot shows the Microsoft Azure home page. At the top, there's a search bar with the placeholder "Search resources, services, and docs (G+)" and a user profile icon. Below the header, a "Welcome to Azure!" message is displayed, followed by a note about free trials and Microsoft Entra ID management. Three main service cards are shown: "Start with an Azure free trial" (blue key icon), "Manage Microsoft Entra ID" (shield and server icon), and "Azure for Students" (pencil and laptop icon). Below these are sections for "Azure services" (with icons for Create a resource, Azure DevOps organizations, Azure Cosmos DB, Quicksight Center, Azure AI services, Kubernetes services, Virtual machines, App Services, Storage accounts, and More services) and "Resources".

3. Open DevOps environment in the Azure platform by typing *Azure DevOps Organizations* in the search bar.

This screenshot shows the same Azure home page as above, but with a search overlay. The search bar at the top contains the text "azure devops". A dropdown menu below the search bar lists "All", "Services (99+)", "Resources", and "More (4)". Under "Services", items like "Azure DevOps organizations", "Azure Cosmos DB", and "Azure Database for MySQL servers" are listed. Under "Marketplace", items like "Build Agents for Azure DevOps" and "Azure DevOps Auditing" are listed. Under "Documentation", items like "Billing overview - Azure DevOps" and "Deploying to Azure VMs using deployment groups in Azure Pipelines - Azure Pip..." are listed. The rest of the page layout remains consistent with the first screenshot.

4. Click on the ***My Azure DevOps Organization*** link and create an organization and you should be taken to the Azure DevOps Organization Home page.

The screenshot shows the Azure DevOps Organization Home page. At the top, there's a navigation bar with 'Home > Azure DevOps ...' and a close button ('X'). Below the navigation is a banner stating: 'We've made it easier to manage Azure DevOps billing and subscriptions. You can [set up billing](#), [change your subscription](#) or pay for more users and resources within Azure DevOps. [Learn more](#)'.

The main content area features the 'Azure DevOps' logo and the tagline: 'Plan smarter, collaborate better, and ship faster with a set of modern dev services'. Below this, there are links for 'My Azure DevOps Organizations', 'Get started using Azure DevOps', 'Billing management for Azure DevOps', 'Give feedback', and 'Tell us about your experience with the Azure DevOps page'.

The central part of the page is a colorful illustration depicting teamwork and technology. It shows several stylized human figures interacting with various icons: a rocket launching, clouds, a green board with a grid, a stack of pink boxes, a blue server rack, and a blue checkmark icon. The overall theme is innovation and cloud-based development.

RESULT

Successfully accessed the Azure DevOps environment and created a new organization through the Azure portal.

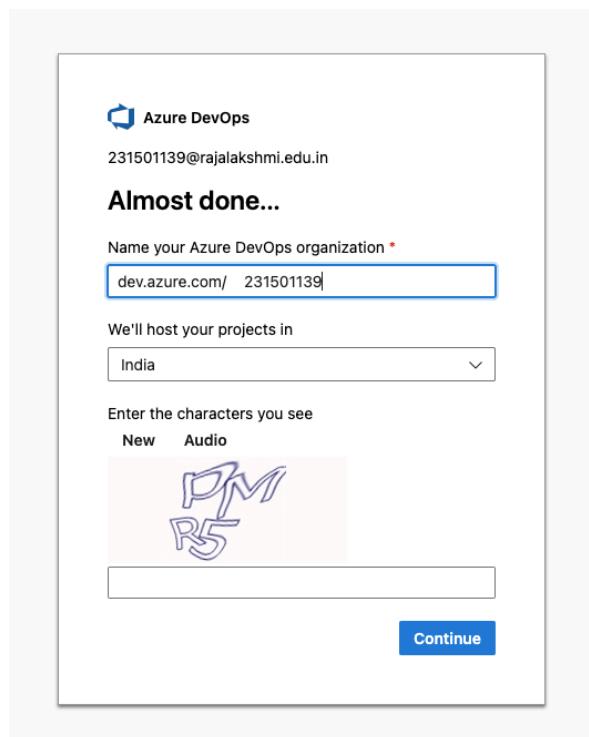
EXP NO: 2

AZURE DEVOPS PROJECT SETUP AND USER STORY MANAGEMENT

AIM

To set up an Azure DevOps project for efficient collaboration and agile work management.

1.Create An Azure Account



2.Create the First Project in Your Organization

a. After the organization is set up, you'll need to create your first **project**. This is where you'll begin to manage code, pipelines, work items, and more.

b. On the organization's **Home page**, click on the **New Project** button.

c. Enter the project name, description, and visibility options:

Name: Choose a name for the project (e.g., **LMS**).

Description: Optionally, add a description to provide more context about the project.

Visibility: Choose whether you want the project to be **Private** (accessible only to those invited) or **Public** (accessible to anyone).

d. Once you've filled out the details, click **Create** to set up your first project.

Create new project

X

Project name *

OQS

Description

Visibility



Public

Anyone on the internet can view the project. Certain features like TFVC are not supported.



Private

Only people you give access to will be able to view this project.



Public projects are disabled for your organization. You can turn on public visibility with [organization policies](#).

Advanced

Version control

Git

Work item process

Basic

Cancel

Create

3. Once logged in, ensure you are in the correct organization. If you're part of multiple organizations, you can switch between them from the top left corner (next to your user profile). Click on the Organization name, and you should be taken to the Azure DevOps Organization Home page.

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Visual Studio Dev Essentials

Get everything you need to build and deploy your app on any platform.

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Azure DevOps Organizations

Create new organization

Projects

- Sahana
- ATM
- online quiz system

New project

Actions

Open in Visual Studio

dev.azure.com/2315011390104 (Owner)

dev.azure.com/2315011390197 (Owner)

dev.azure.com/2315011390572 (Owner)

4. Project dashboard

Azure DevOps 2315011390197 / Online Quiz System / Overview / Summary

Search

OS Online Quiz System

Private Invite

Online Quiz System

About this project

The Online Quiz System is a web-based application developed to provide a simple and effective platform for conducting quizzes over the internet. It allows users to log in, attempt multiple-choice questions, and receive instant feedback on their performance. The system ensures secure access through a login mechanism and maintains user session integrity. Once logged in, users can start the quiz, answer a predefined set of questions, and submit their responses. The system then automatically evaluates the answers and displays the final score. Developed using JSP, Servlets, and MySQL, the project applies core principles of software construction such as modularity, reusability, and maintainability. It emphasizes structured design, clean code practices, and efficient interaction between frontend and backend components to ensure a smooth and reliable user experience.

Project stats

Period: Last 7 days

Boards

26 Work items created

0 Work items completed

Members

SM

5.To manage user stories:

- From the **left-hand navigation menu**, click on **Boards**. This will take you to the main **Boards** page, where you can manage work items, backlogs, and sprints.
- On the **work items** page, you'll see the option to **Add a work item** at the top. Alternatively, you can find a + button or **Add New Work Item** depending on the view you're in. From the **Add a work item** dropdown, select **User Story**. This will open a form to enter details for the new User Story.

The screenshot shows the Azure DevOps Boards backlog page for the 'Online Quiz System' project. The left sidebar includes options like Overview, Boards, Work items, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Artifacts. The main area displays a backlog of three epics:

Order	Work Item Type	Title	State	Effort	Business Area	Tags
1	Epic	> User Management	New		Business	
2	Epic	> Quiz Creation & Management	New		Business	
3	Epic	> Quiz Participation & Results	New		Business	

The screenshot shows the Microsoft sign-in page. It features a purple circular profile picture with the letters 'SM'. The user information displayed is:

Sahana Munusamy
231501139@rajalakshmi.edu.in
[My Microsoft account](#)
[Switch directory](#)

Below this, there is a link to 'Sign in with a different account' next to a user icon.

RESULT

Successfully created an Azure DevOps project with user story management and agile workflow setup.

EXP NO: 3

SETTING UP EPICS, FEATURES, AND USER STORIES FOR PROJECT PLANNING

AIM

To learn about how to create epics, user story, features, backlogs for your assigned project.

Create Epic, Features, User Stories, Task

The screenshot shows the Azure DevOps Boards Backlog view for the 'Online Quiz System' team. The backlog is organized into three epics:

- Epic 1: User Management**
 - Feature: User Registration & Login
 - Feature: Role Management
 - User Story: As an admin, I want to give users the right access s...
 - User Story: As a player, I want to see only my quizzes and prog...
- Epic 2: Quiz Creation & Management**
 - Feature: Quiz Creation & Setting
 - User Story: As an admin, I want to create and configure quizze...
 - User Story: As a player, I want to know the quiz instructions an...
 - Feature: Question Management
- Epic 3: Quiz Participation & Results**
 - Feature: Quiz Participation
 - Feature: View Results

1. Fill in Epics

The screenshot shows the 'User Management' work item creation dialog in Azure DevOps. The work item type is selected as 'User Management'. The details include:

- Description:** Click to add Description.
- Planning:** Priority: 2, Risk: , Effort: , Business Value: , Time Criticality: , Start Date: , Select a date..., Target Date: , Select a date..., Add link: Link an Azure Repos commit, pull request or branch to see the status of your development. You can also create a branch to get started.
- Classification:** Value area: Business
- Related Work:** Add link: Add an existing work item as a parent

2.Fill in Features

A screenshot of the Azure DevOps Backlogs interface. A feature card titled "FEATURE 4" is selected. The card includes fields for "Description" (with placeholder text "Click to add Description."), "Planning" (Priority set to 2), "Deployment" (instructions to track releases via Releases and deployment status reporting), "Development" (instructions to link to Azure Repos commit or pull request), and "Classification" (Value area set to Business). The sidebar on the left shows project navigation options like Boards, Backlogs, and Analytics.

3.Fill in User Story Details

A screenshot of the Azure DevOps Backlogs interface. A user story card titled "USER STORY 12" is selected. The card includes fields for "Description" (placeholder text "Click to add Description."), "Acceptance Criteria" (placeholder text "Click to add Acceptance Criteria."), "Planning" (Story Points, Priority set to 2, Risk), "Deployment" (instructions to track releases via Releases and deployment status reporting), "Development" (instructions to link to Azure Repos commit, pull request, or branch), and "Classification" (Value area set to Business). The sidebar on the left shows project navigation options like Boards, Backlogs, and Analytics.

RESULT

Thus, the creation of epics, features, user story and task has been created successfully.

EXP NO: 4

SPRINT PLANNING

AIM

To assign user story to specific sprint for the Online Quiz System.

Sprint Planning

Sprint 1

The screenshot shows the Azure Boards interface for the 'Online Quiz System' project. The left sidebar is collapsed, and the main area displays the 'Sprints' board for 'Sprint 1'. The board has columns for New, Active, Resolved, and Closed. There are four user stories listed under the New column:

- 10 As an admin, I want to log in to manage quizzes and users.
- 11 As a player, I want to register and log in so that I can access quizzes securely.
- 12 As an admin, I want to give users the right access so they can use the system properly.
- 13 As a player, I want

The top right corner of the board shows the sprint details: 18 May - 31 May, 11 work days remaining.

Sprint 2

The screenshot shows the Azure Boards interface for the 'Online Quiz System' project. The left sidebar is collapsed, and the main area displays the 'Sprints' board for 'Sprint 2'. The board has columns for New, Active, Resolved, and Closed. There are three user stories listed under the New column:

- 13 As a player, I want to see only my quizzes and progress so that it's easy to use.
- 14 As an admin, I want to create and configure quizzes with time limits so I can control quiz flow.
- 15 As a player, I want to know the quiz instructions and duration before starting so I can prepare.

The top right corner of the board shows the sprint details: 18 May - 31 May, 11 work days remaining.

Sprint 3

The screenshot shows the Azure DevOps Boards interface for the 'Online Quiz System' project. The left sidebar is collapsed, and the main area displays the 'Online Quiz System Team' backlog under 'Sprint 1'. The backlog is organized into columns: New, Active, Resolved, and Closed. Three work items are visible in the 'New' column:

- 16** As an admin, I want to manage a question bank so I can reuse questions easily.
 - New
 - Unassigned
- 17** As a player, I want each question to load quickly so I can answer without delays.
 - New
 - Unassigned
- 18** As an admin, I want to track active quiz sessions so I can monitor participation during the quiz.
 - New
 - Unassigned

The top right corner shows the sprint details: '18 May - 31 May' and '11 work days remaining'. A 'New Work Item' button and 'Column Options' menu are also visible.

RESULT

The Sprints have been created for Online Quiz System.

EXP NO: 5

POKER ESTIMATION

AIM

Create Poker Estimation for the user stories – Online Quiz System.

Poker Estimation

The screenshot shows the Azure DevOps interface for a User Story titled "16 As an admin, I want to manage a question bank so I can reuse questions easily." The story is in the "New" state and is assigned to the "Online Quiz System" area. The "Iteration" is "Online Quiz System|Sprint 1". The "Description" field contains placeholder text: "Click to add Description.". The "Acceptance Criteria" field also contains placeholder text: "Click to add Acceptance Criteria.". The "Discussion" section has a comment box with the placeholder: "Add a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request." The "switch to Markdown editor" link is visible at the bottom of the discussion box. The "Planning" section includes fields for "Story Points", "Priority" (set to 2), and "Risk". The "Deployment" section includes a note about tracking releases via the "Releases" menu. The "Classification" section lists "Value area" and "Business". The "Development" section includes an "Add link" button and a note about linking to Azure Repos commits or pull requests. The "Related Work" section has an "Add link" button and a "Parent" dropdown. The bottom navigation bar shows the project settings, a back arrow, the number 3, the word "Epic", a forward arrow, and the text "Quiz Participation & Results". The status bar indicates "New" and "Business".

RESULT

The Estimation/Story Points is created for the project using Poker Estimation.

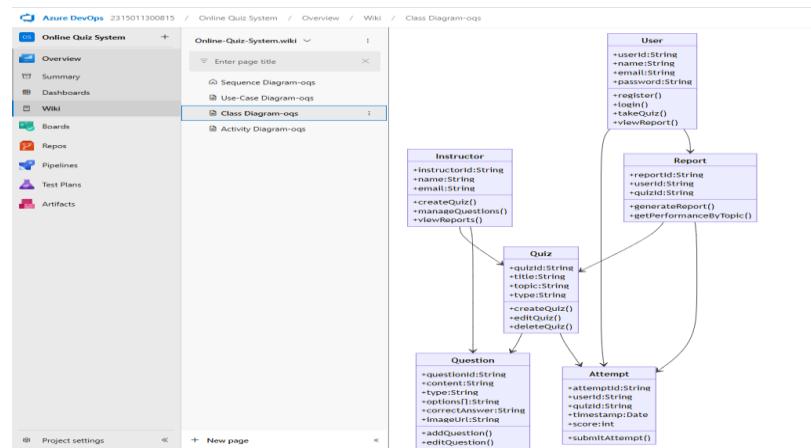
EXP NO: 6

DESIGNING CLASS AND SEQUENCE DIAGRAMS FOR PROJECT ARCHITECTURE

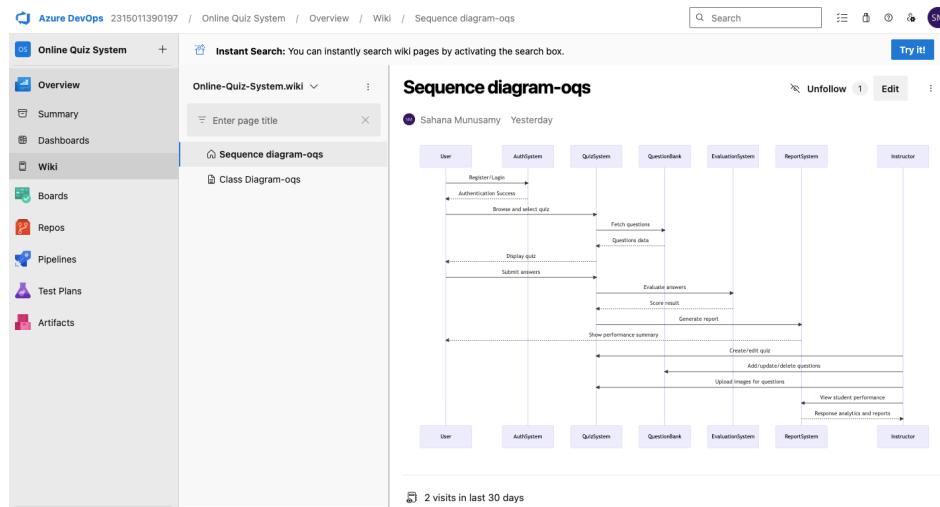
AIM

To Design a Class Diagram and Sequence Diagram for the given Project.

6A. Class Diagram



6B. Sequence Diagram



RESULT

The Class Diagram and Sequence Diagram is designed Successfully for the Online Quiz System.

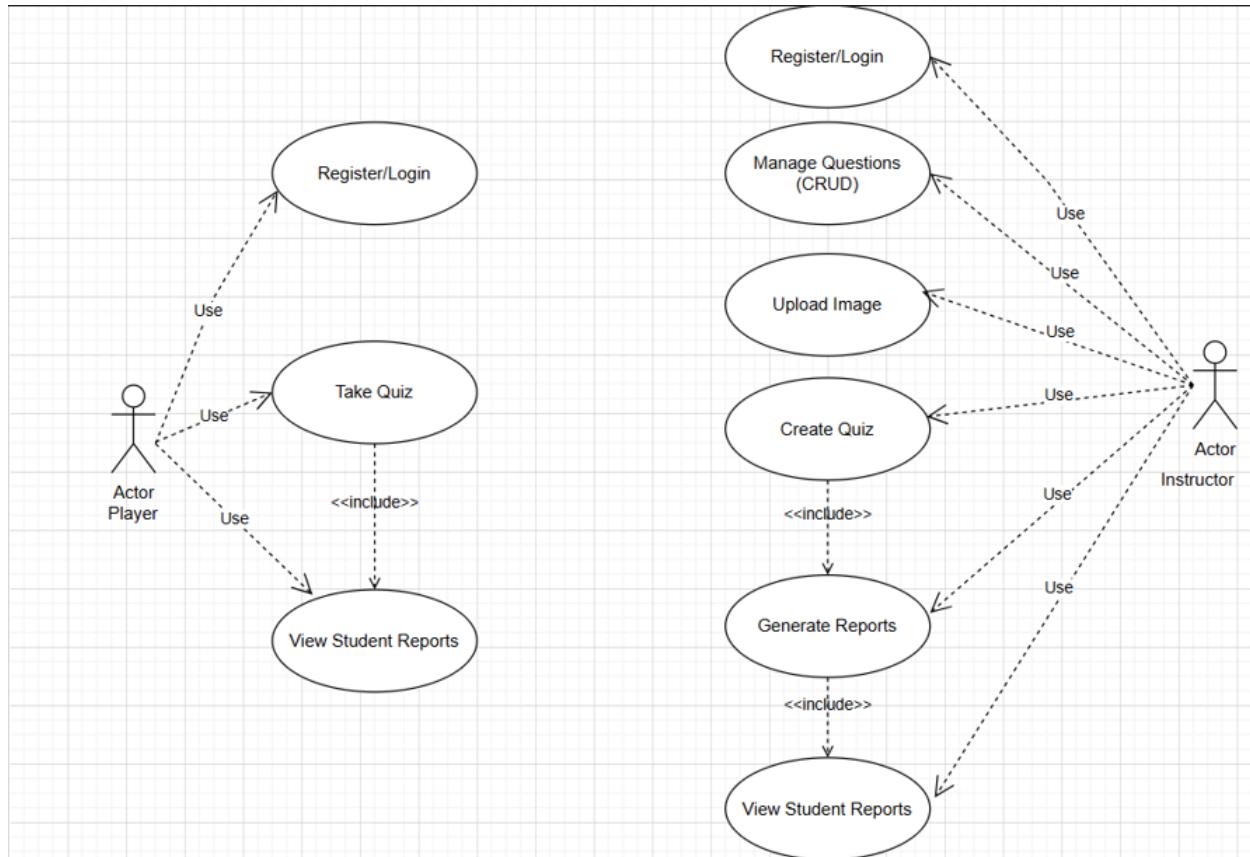
EXP NO: 7

DESIGNING USE-CASE AND ACTIVITY DIAGRAMS FOR PROJECT STRUCTURE

AIM

To Design an Use-Case Diagram and Activity Diagram for the given Project.

7A. Use-Case Diagram



7B. Activity Diagram



RESULT

The Use-Case Diagram and Activity Diagram is designed Successfully for the Online Quiz System.

AIM

Test Plans and Test Case and write two test cases for at least five user stories showcasing the happy path and error scenarios in azure DevOps platform.

Test Planning and Test Case

Test Case Design Procedure

1. Understand Core Features of the Application

- User Login
-

2. Define User Interactions

- Each test case simulates a real user behaviour (e.g., logging in, submitting quizzes, viewing results)

3. Design Happy Path Test Cases

- Focused on validating that all core functionalities work correctly under normal conditions
- Example: Player registers and logs in, submits quizzes and views results

4. Design Error Path Test Cases

- Simulate invalid inputs, system issues or failed actions to ensure proper error handling.
- Example: Login with invalid credentials, submission without attachments, unauthorized access to admin panel.

5. Break Down Steps and Expected Results

- Each test case includes a clear sequence of actions and expected results.
- Ensures both manual testers and automation tools can follow the process easily.

6. Use Clear Naming and IDs

- Test cases are uniquely identifies (e.g., TC01 – Valid Login, TC03 – Invalid Password).
- Facilities easy mapping to features and tracking in Azure DevOps.

7. Separate Test

- Grouped by functionality such as:
 - Login and Registration
 - Quizzes Submission
 - Viewing Results
 - Admin Functions
- Improves organization and enables focused execution in Azure DevOps.

8. Prioritize and Review

- High-priority assigned to critical workflows like login, quizzes and results.
- Reviewed for completeness, accuracy and alignment with user stories and features definition.

1. New test plan

The screenshot shows the 'Test Plans' section of the Azure DevOps interface. On the left, there's a sidebar with options like Overview, Boards, Repos, Pipelines, Test Plans, and Artifacts. The 'Test Plans' option is selected. In the main area, a 'New Test Plan' dialog is open. It has fields for 'Name' (set to 'Quiz Timer And Navigation'), 'Area Path' (set to 'Online Quiz System'), and 'Iteration' (set to 'Online Quiz System|Sprint 1'). At the bottom right of the dialog are 'Create' and 'Cancel' buttons.

2. Test suite

The screenshot shows the 'Test Suites' section of the Azure DevOps interface. The sidebar on the left is identical to the previous screenshot. In the main area, a 'Login verification' test suite is selected. The interface shows a summary bar at the top indicating 'May 18 - May 31' and '100% run, 100% passed'. Below this, a 'Test Points (3 items)' table is displayed:

	Run for web application	Outcome	Order	Total
<input type="checkbox"/> Title		Passed	1	25
<input type="checkbox"/> Valid Login		Passed	2	38
<input type="checkbox"/> Invalid Username		Passed	3	39
<input type="checkbox"/> Invalid Password				

3.Test case

Give two test cases for at least five user stories showcasing the happy path and error scenarios in azure DevOps platform.

Online Quiz System– Test Plans

USER STORIES

- As an admin, I want to log in to manage quizzes and users (ID: 3).
- As a player, I want to register and log in so that I can access quizzes securely (ID: 4).
- As an admin, I want to give users the right access so they can use the system properly (ID: 6).
- As a player, I want to see only my quizzes and progress so that it's easy to use (ID: 7).
- As an admin, I want to create and configure quizzes with time limits so I can control quiz flow (ID: 10).

TEST SUITES

Test Suite: TS01 - Login Verification (ID: 23)

1. TC01 –Valid Login

○ Action:

- Go to the Sign-Up page.
- Enter valid name, email, and password.
- Click “Login” button.

○ Expected Results:

- Login form is displayed.
- Fields accept valid credentials without error.
- Account is successfully logged in and redirected to the dashboard.

○ Type: Happy Path

2. TC02 – Invalid Username

○ Action:

- Go to the Login page.
- Enter invalid or unregistered username.
- Click on "Login" button.

○ Expected Results:

- Login form is displayed.
- System displays an error message like “Invalid username”.
- User is not logged in and remains on the login page.

○ Type: Negative Path

3. TC03 – Invalid Password

- **Action:**

- Go to the Login page.
 - Enter a valid username or email.
 - Enter an incorrect or invalid password.
 - Click on "Login" button.

- **Expected Results:**

- Login form is displayed.
 - System shows an error message like "Invalid username or password."
 - User is not logged in and stays on the login page.

- **Type:** Error Path

4. TC04 – Login with Wrong Password

- **Action:**

- Go to the Login page.
 - Enter valid email and incorrect password.
 - Click on "Login".

- **Expected Results:**

- Input is accepted.
 - Error message "Invalid username or password" is shown.

- **Type:** Error Path

Test Suite: TS02 – Quiz Creation (ID: 28)

1. TC05 – Valid Quiz Creation

- **Action:**

- Navigate to the "Create Quiz" page.
 - Enter valid quiz details.
 - Click the "Create" or "Submit" button.

- **Expected Results:**

- Quiz is successfully saved in the database.

- **Type:** Happy Path

2. TC06 – Missing Title

- **Action:**

- Navigate to "Create Quiz" page.
 - Leave the title field empty and fill in valid questions and options.
 - Click the "Create" or "Submit" button.

- **Expected Results:**
 - System displays a validation error message like "Title is required".
 - Quiz is not submitted or saved in the database.
- **Type:** Error Path

Test Suite: TS03 – Quiz Results (ID: 32)

1. TC07 –View Quiz Results As Player

- **Action:**
 - Log in as a player.
 - Navigate to "My Results" or "Quiz Results" section.
 - Select a completed quiz to view the results.
- **Expected Results:**
 - Player sees their score and correct/incorrect answers for the selected quiz.
- **Type:** Happy Path

2 . TC08 – View Quiz Results As Admin

- **Action:**
 - Log in as an admin.
 - Navigate to the "Quiz Results" or "All Results" section.
 - Select a quiz to view all participants results.
- **Expected Results:**
 - Admin sees a list of participants with their scores and answers.
- **Type:** Happy Path

Test Suite: TS04 – Quiz Attempt (ID: 36)

1. TC09 –Submit Quiz With All Questions Answered

- **Action:**
 - Login and start an available quiz.
 - Answer all questions.
 - Click the "Submit" button.
- **Expected Results:**
 - Answers are recorded and score is calculated correctly.
- **Type:** Happy Path

2. TC10 – Submit Quiz without Answering Any Question

- **Action:**
 - Login and start a quiz.
 - Leave all questions unanswered.
 - Click the "Submit" button.

- **Expected Results:**
 - System displays a warning or prompt (e.g., "You have unanswered questions").
- **Type:** Error Path

Test Suite: TS05 – Question Navigation (ID: 41)

1. TC11 – Navigate Between Questions During Quiz

- **Action:**
 - Start a quiz with multiple questions.
 - Click "Next" and "Previous" to move between questions.
 - Return to previously answered question to modify the answer.
- **Expected Results:**
 - User can freely navigate between questions during the quiz.
- **Type:** Happy Path

2. TC12 – Attempt to Skip Required question With Navigation

- **Action:**
 - Start a quiz with required questions.
 - Attempt to click "Next" without answering the current question.
 - Try submitting the quiz with unanswered required questions.
- **Expected Results:**
 - Quiz cannot be submitted until required questions are answered.
- **Type:** Error Path

Test Cases

Title	Test Plan ID	State	Area Path	Iteration	Assigned To
Quiz Results	31	Active	Online Quiz System	Online Quiz System Sprint	Sahana Munusam
Quiz Creation	28	Active	Online Quiz System	Online Quiz System Sprint	Sahana Munusam
Login verification	23	Active	Online Quiz System	Online Quiz System Sprint	Sahana Munusam

TEST CASE 24

24 Valid Login

Ranjani Sai | 0 Comments | Add Tag

State: Design | Area: Online Quiz System | Iteration: Online Quiz System\sprint 1

Steps

Step	Action	Expected result
1.	Navigate to the login page.	
2.	enter a valid username/email.	
3.	enter valid password.	
4.	Click the login button.	User is redirected to the dashboard/homepage.
Click or type here to add a step		

Parameter values

Recent test results

- Passed by Windows 10 | Completed 7:26 AM, 5/15/2025
- Failed by Windows 10 | Completed 7:25 AM, 5/15/2025

[View all test result history](#)

Deployment

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

Development

Add link

Azure DevOps 2315011390197 / Online Quiz System / Test Plans / Login verification

Online Quiz System

Login verification (ID: 24)

Define Execute Chart

Test Points (3 items)

Title	Outcome	Order	Test
Valid Login	Passed	1	25
Valid Quiz Creation	Passed	2	26
View Quiz Results As Player	Active	3	27

https://dev.azure.com/2315011390197/Online%20Quiz%20System/_testPlans/execute?planId=23&suiteId=24

Azure DevOps 2315011390197 / Online Quiz System / Test Plans / Quiz Creation

Online Quiz System

Quiz Creation (ID: 29)

Define Execute Chart

Test Cases (3 items)

Title	Order	Test Case Id	Assigned
Valid Quiz Creation	1	30	Sahana
Missing Title	2	36	Sahana
Invalid Time Range	3	37	Sahana

https://dev.azure.com/2315011390197/Online%20Quiz%20System/_testPlans/execute?planId=23&suiteId=29

TEST CASE 26

26 Valid Quiz Creation

Sahana Munusamy 0 Comments Add Tag

State: Design Area: Online Quiz System
Reason: New Iteration: Online Quiz System|Sprint 1

Save and Close Follow Updated by Sahana Munusamy: 29m ago

Steps

Step	Action	Expected result
1.	Login as Admin/Instructor.	
2.	Go to "Creation Quiz" page.	
3.	Add questions with correct answers.	
4.	Click "Create/Save".	
5.		Quiz is created and listed.

Click or type here to add a step

Deployment

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

Development

Add link

Link an Azure Repos [commit](#), [pull request](#) or [branch](#) to see the status of your development. You can also [create a branch](#) to get started.

Related Work

Add link

[Add an existing work item as a parent](#)

Parameter values

Azure DevOps 2315011390197 / Online Quiz System / Test Plans / Quiz Results

Online Quiz System + Quiz Results Current May 18 - May 31 100% run, 100% passed. [View report](#)

Test Suites Filter suites by name Quiz Results (3)

Quiz Results (ID: 32)

Define Execute Chart

Test Cases (3 items)

	Order	Test Case Id	Assign
<input type="checkbox"/> Title	1	33	Sahan
<input type="checkbox"/> View Quiz Results As Player	2	34	Sahan
<input type="checkbox"/> View Quiz Results As Admin	3	35	Sahan
<input type="checkbox"/> Automatic Result Generation			

NEW TEST CASE *

View Quiz Results As Player

Sahana Munusamy 0 Comments Add Tag

Save and Close

State: Design Area: Online Quiz System
Reason: New Iteration: Online Quiz System|Sprint 1

Steps

Step	Action	Expected result
1.	Login as player.	
2.	Navigate to "My Results" or "Completed Quizzes".	
3.	Click on complete quiz.	
4.		Quiz result with score ,correct/wrong answer is displayed

Click or type here to add a step

Deployment

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

Development

Add link

Link an Azure Repos [commit](#), [pull request](#) or [branch](#) to see the status of your development. You can also [create a branch](#) to get started.

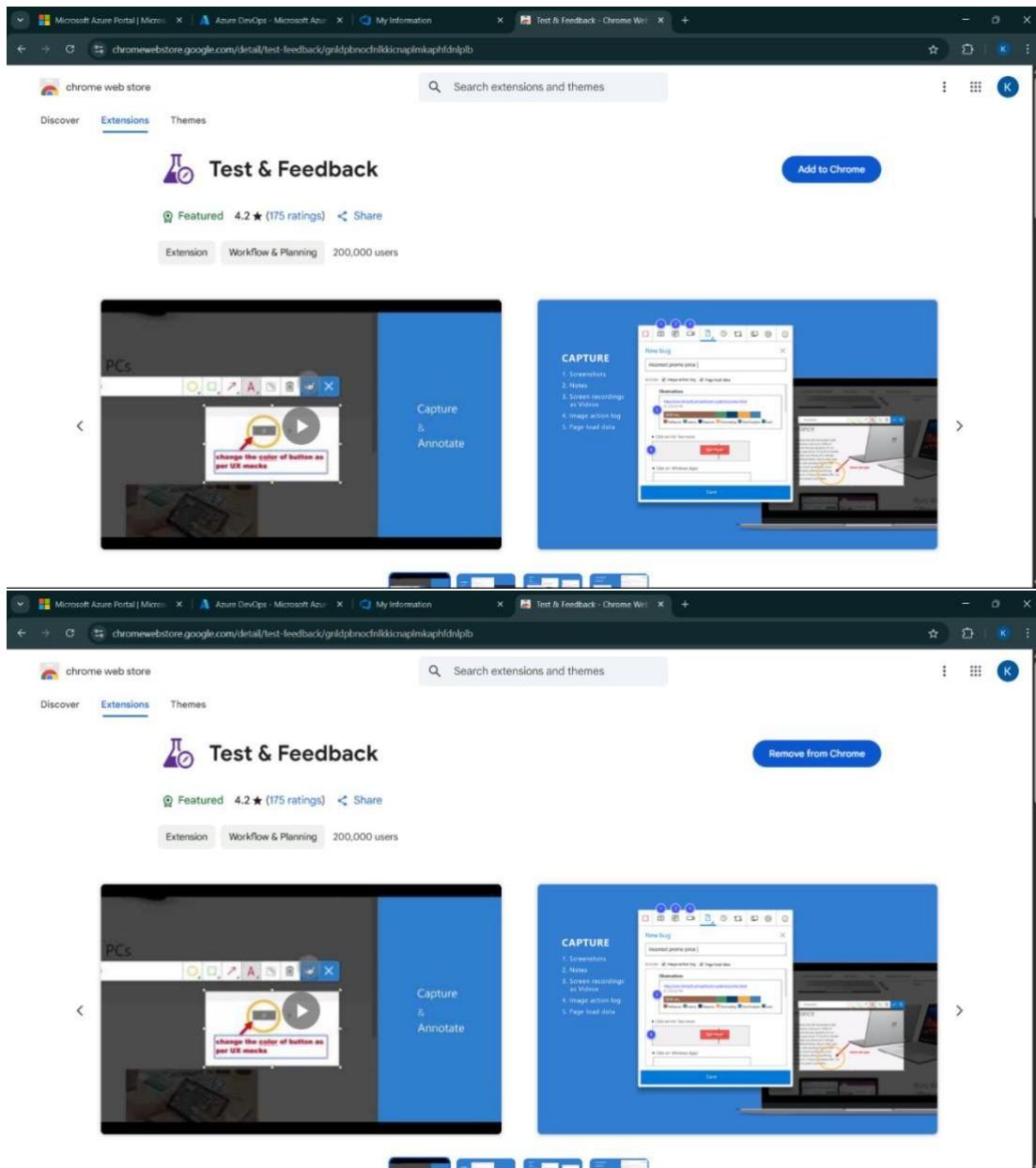
Related Work

Add link

[Add an existing work item as a parent](#)

Parameter values

4. Installation of test



5. Running the test cases

The screenshot shows the Azure DevOps Test Plans interface for the 'Online Quiz System' project. The left sidebar is collapsed, and the main area displays the 'Login verification' test plan. The title bar shows 'Azure DevOps 2315011390197 / Online Quiz System / Test Plans / Login verification'. The top navigation bar includes a search bar and various icons. The main content area is titled 'Login verification (ID: 24)' and shows a 'Test Suites' section with a single suite named 'Login verification (3)'. Below it is a 'Test Points (3 items)' table:

Test Point	Outcome	Order	Test ID
Valid Login	Passed	1	25
Invalid Username	Passed	2	38
Invalid Password	Passed	3	39

Contextual menu options are visible for the 'Valid Login' row, including 'View execution history', 'Mark Outcome', 'Run', 'Reset test to active', 'Edit test case', 'Assign tester', and 'View test result'.

The screenshot shows the test execution details for the 'Valid Login' test point. The URL is 'dev.azure.com/2315011390197/Online%20Quiz%20System/_testExecution/Index'. The page header includes 'Save and cl...', 'Create bug', and other navigation links. The main content area shows the test step details:

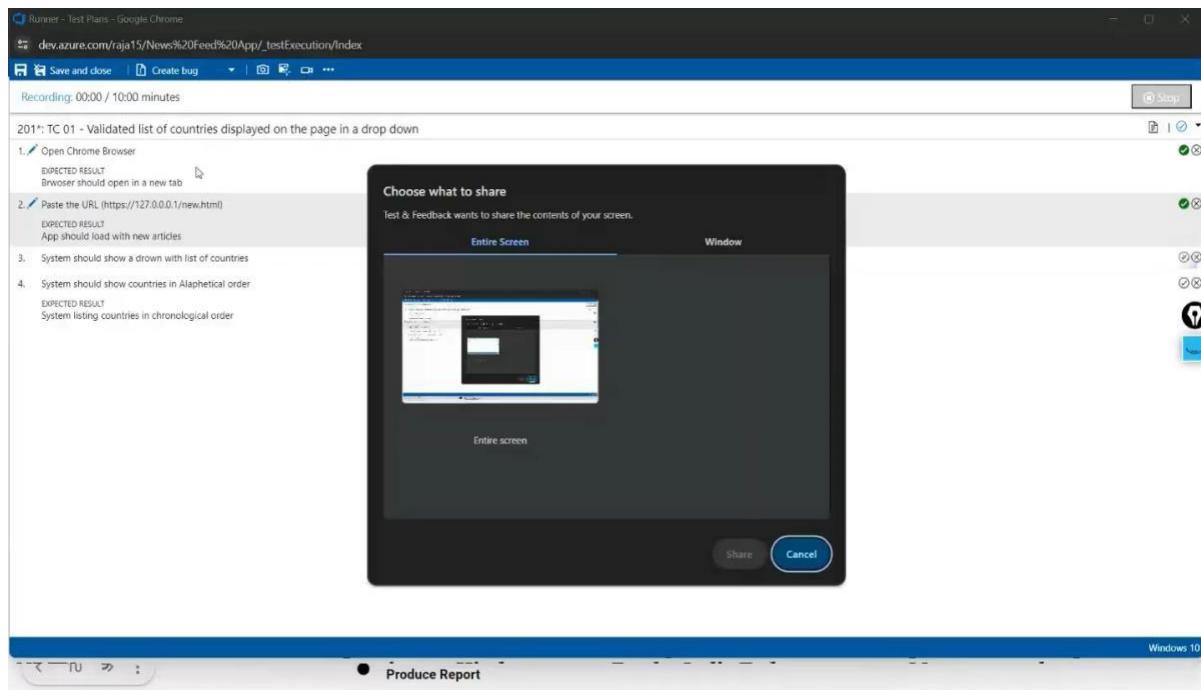
25*: Valid Login

1. Navigate to the login page.
2. enter a valid username/email.
3. enter valid password.
4. Click the login button.

5. EXPECTED RESULT
User is redirected to the dashboard/homepage

On the right side, there is a grid of green checkmarks and crossed-out symbols, likely indicating the status of the test steps.

6.Recording the test case



7.Creating the bug

A screenshot of the Azure DevOps "New Bug" creation page. The title bar says "NEW BUG *". The main area contains the following information:

- Title: user should not login with invalid details
- Assignee: Unassigned
- Comments: 0 comments
- Tags: Add tag
- Save & Close button

State: New	Area: Online Quiz System
Reason: New	Iteration: Online Quiz System\Sprint 1

Repro Steps:

5/17/2025 11:00 AM Bug filed on "Valid Login"

Step no.	Result	Title
1.	None	Navigate to the login page.
2.	None	enter a valid username/email.
3.	None	enter valid password.
4.	None	Click the login button.
5.	None	

Planning:

- Resolved Reason:
- Story Points:
- Priority: 2
- Severity: 3 - Medium
- Activity:

Deployment:

To track releases associated with this work item, go to Releases and turn on deployment status reporting for Boards in your pipeline's Options menu. Learn more about deployment status reporting.

Development:

+ Add link

Link an Azure Repos commit, pull request or branch to see the status of your development. You can also create a branch to get started.

Effort (Hours):

Original Estimate: Remaining:

Related Work:

+ Add link

Add an existing work item as a parent

NEW BUG *

user should not enter invalid details

Unassigned | 0 comments | Add tag | Save & Close | ...

System Info

Browser - Name	Google Chrome 136
Browser - Language	en-US
Browser - Height	816
Browser - Width	1536
Browser - User agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/136.0.0.0 Safari/537.36
Operating system - Name	Windows NT 10.0; Win64; x64
Operating system - Architecture	x86_64
Operating system - Processor model	12th Gen Intel(R) Core(TM) i5-12450H
Operating system - Number of processors	12
Memory - Available	6998618112
Memory - Capacity	16831893504
Display - Pixels per inch (X axis)	120
Display - Pixels per inch (Y axis)	120

Found in Build | Integrated in Build

8. Test case results

Azure DevOps 2315011300815 / Online Quiz System / Test Plans / Login Verification

Test Suites

- Filter suites by name
- Login Verification (3)

Login Verification (ID: 23)

Define Execute Chart

Test Points (3 items)

- Title
- Valid Login** (Selected)
- Invalid Username
- Invalid Password

Test Case Results

Outcome	TimeSta...	Configuration	Run by	Tester	Test Plan
Passed	Just now	Windows 10	Ranjani Sai	Ranjani Sai	Login V
Passed	4m ago	Windows 10	Ranjani Sai	Ranjani Sai	Login V
Paused	4m ago	Windows 10	Ranjani Sai	Ranjani Sai	Login V
Failed	6m ago	Windows 10	Ranjani Sai	Ranjani Sai	Login V
Passed	Thursd...	Windows 10	Ranjani Sai	Ranjani Sai	Login V
Failed	Thursd...	Windows 10	Ranjani Sai	Ranjani Sai	Login V

Open execution history for current test point

9. Test report summary

The screenshot shows a 'NEW BUG' card in the Azure DevOps interface. The card details are:

- Title:** User should not enter invalid details
- Assignee:** Unassigned
- State:** New
- Reason:** New
- Area:** Online Quiz System
- Iteration:** Online Quiz System\sprint 1
- Comments:** 0 comments
- Tags:** Add tag
- Buttons:** Save & Close, Refresh, More

Repro Steps:

5/17/2025 11:09 AM Bug filed on "Valid Login"

Step no. Result Title

1. **None** Navigate to the login page.
2. **None** enter a valid username/email.
3. **None** enter valid password.
4. **None** Click the login button.
5. **None**

Planning:

- Resolved Reason:
- Story Points:
- Priority: 2
- Severity: 3 - Medium
- Activity:

Deployment:

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

Development:

+ Add link

Link an Azure Repos [commit](#), [pull request](#) or [branch](#) to see the status of your development. You can also [create a branch](#) to get started.

Related Work:

+ Add link

Add an existing work item as a parent

- Assigning bug to the developer and changing state

10. Progress report

The screenshot shows the 'Progress report' section for the 'Login verification' test plan. The left sidebar shows the project navigation with 'Test Plans' selected. The main area displays the following data:

Summary:

- 1 Test plans
- 3 Test points
- 3 (3 / 3) Test points run
- 100% Run
- 100% (3 / 3) Pass rate
- 3 Passed

Outcome trend:

Last 14 Days

Tests

2025-05-07, 2025-05-08, 2025-05-09, 2025-05-10, 2025-05-11, 2025-05-12, 2025-05-13, 2025-05-14, 2025-05-15, 2025-05-16, 2025-05-17, 2025-05-18, 2025-05-19, 2025-05-20, 2025-05-21

Passed

Details:

Test plan name	Test points	Run %	Passed %	Failed %	Not run count
> Login verification	3	100	100	0	0

Azure DevOps 2315011390197 / Online Quiz System / Test Plans / Progress report

Search SM

Online Quiz System

- Overview
- Boards
- Repos
- Pipelines
- Test Plans**
- Test plans
- Progress report**
- Parameters
- Configurations
- Runs
- Artifacts

Project settings <<

Quiz Results (+1)

Test Suites Outcome Configuration Tester Priority Assigned To

Summary

2 Test plans 6 Test points

6 (6 / 6) Test points run 100% Run

100% (6 / 6) Pass rate 6 Passed

Outcome trend

Last 14 Days

Test plan name	Test points	Run %	Passed %	Failed %	Not run count
> Quiz Creation	3	100	100	0	0
> Quiz Results	3	100	100	0	0

Details

Test plan name	Test points	Run %	Passed %	Failed %	Not run count
> Quiz Results	3	100	100	0	0

Azure DevOps 2315011390197 / Online Quiz System / Test Plans / Progress report

Search SM

Online Quiz System

- Overview
- Boards
- Repos
- Pipelines
- Test Plans**
- Test plans
- Progress report**
- Parameters
- Configurations
- Runs
- Artifacts

Project settings <<

Progress report

Quiz Results Test Suites Outcome Configuration Tester Priority Assigned To

Summary

1 Test plans 3 Test points

3 (3 / 3) Test points run 100% Run

100% (3 / 3) Pass rate 3 Passed

Outcome trend

Last 14 Days

Test plan name	Test points	Run %	Passed %	Failed %	Not run count
> Quiz Results	3	100	100	0	0

11.Changing the test template

The screenshot shows the 'Organization Settings' page in Azure DevOps. The left sidebar has 'Process' selected under 'Boards'. The main area displays a table of available processes:

Name	Description	Team proj...
Basic (default)	This template is flexible for any process and great for teams getti...	0
Agile	This template is flexible and will work great for most teams using ...	1
Scrum	This template is for teams who follow the Scrum framework.	0
CMMI	This template is for more formal projects requiring a framework f...	0

The screenshot shows the 'All processes > Agile' page in Azure DevOps. The left sidebar has 'Process' selected under 'Boards'. A message at the top says 'System processes cannot be customized. To add customization create an inherited process.' The main area displays a table of work item types:

Name	Description
Bug	Describes a divergence between required and actual behavior, and tracks the work done to correct the defect and verify the correct...
Epic	Epics help teams effectively manage and groom their product backlog
Feature	Tracks a feature that will be released with the product
Issue	Tracks an obstacle to progress.
Task	Tracks work that needs to be done.
Test Case	Server-side data for a set of steps to be tested.
Test Plan	Tracks test activities for a specific milestone or release.
Test Suite	Tracks test activities for a specific feature, requirement, or user story.
User Story	Tracks an activity the user will be able to perform with the product

RESULT

The test plans and test cases for the user stories is created in Azure DevOps with Happy Path and Error Path.

EXP NO: 9

CI/CD PIPELINES IN AZURE

AIM

To implement a Continuous Integration and Continuous Deployment (CI/CD) pipeline in Azure DevOps for automating the build, testing, and deployment process of the Student Management System, ensuring faster delivery and improved software quality.

PROCEDURE

Steps to Create and implement pipelines in Azure:

1. Sign in to Azure DevOps and Navigate to Your Project
Log in to dev.azure.com, select your organization, and open the project where your Student Management System code resides.
2. Connect a Code Repository (Azure Repos or GitHub)
Ensure your application code is stored in a Git-based repository such as Azure Repos or GitHub. This will be the source for triggering builds and deployments in your pipeline.
3. Create a New Pipeline
Go to the Pipelines section on the left panel and click “Create Pipeline”. Choose your source (e.g., Azure Repos Git or GitHub), and then select the repository containing your project code.
4. Choose the Pipeline Configuration
You can select either the YAML-based pipeline (recommended for version control and automation) or the Classic Editor for a GUI-based setup.
If using YAML, Azure DevOps will suggest a template or allow you to define your own.
5. Define Build Stage (CI - Continuous Integration) from YAML file.
6. Install dependencies (e.g., npm install, dotnet restore).
7. Build the application (dotnet build, npm run build).
8. Run unit tests (dotnet test, npm test).
9. Publish build artifacts to be used in the release stage.

10. Save and Run the Pipeline for the First Time

Save the YAML or build definition and click “Run”.

Azure will fetch the latest code and execute the defined build and test stages.

11. Configure Continuous Deployment (CD)

Navigate to the Releases tab under Pipelines and click “New Release Pipeline”. Add an Artifact (from the build stage) and create a new Stage (e.g., Development, Production).

12. Configure the CD stage with deployment tasks such as deploying to Azure App Service, running database migrations or scripts, and restarting services using the Azure App Service Deploy task linked to your subscription and app details.

13. Set Triggers and Approvals

Enable continuous deployment trigger so the release pipeline runs automatically after a successful build. For production environments, configure pre-deployment approvals to ensure manual verification before release.

14. Monitor Pipelines and Manage Logs

View all pipeline runs under the Runs section.

Check logs for build/test/deploy stages to debug any errors.

You can also integrate email alerts or Microsoft Teams notifications for build failures.

15. Review and Maintain Pipelines

Regularly update your pipeline tasks or YAML configurations as your application grows.

Ensure pipeline runs are clean and artifacts are stored securely.

Integrate quality gates and code coverage policies to maintain code quality.

The screenshot shows the Azure DevOps Pipelines interface for the 'Online Quiz System' project. The left sidebar is visible with 'Pipelines' selected. The main area displays a table of recently run pipelines:

Pipeline	Last run
#20250517.2 • Set up CI with Azure Pipelines Manually triggered for main	Just now 7s
#20250516.2 • Set up CI with Azure Pipelines Manually triggered for main	Yesterday 19s
#20250515.1 • Set up CI with Azure Pipelines Individual CI for main	Thursday <1s
#20250515.1 • Add files via upload Manually triggered for main	Thursday <1s

Azure DevOps Pipeline details:

- Pipeline Name:** #20250517.1 • Set up CI with Azure Pipelines
- Repository:** Online Quiz System (4)
- Branch:** main
- Commit ID:** 06a981f7
- Run Status:** Success (9s ago)
- Jobs:** Job (Success, 2s)

Azure DevOps Pipeline details:

- Pipeline Name:** #20250517.2 • Set up CI with Azure Pipelines
- Repository:** Online Quiz System (4)
- Branch:** main
- Commit ID:** 06a981f7
- Run Status:** Success (7s ago)
- Jobs:** Job (Success, 2s)

RESULT

Thus the pipelines for the given project “**Online Quiz System**” has been executed successfully.

EXP NO: 10

GITHUB: PROJECT STRUCTURE & NAMING CONVENTIONS

Aim:

To provide a clear and organized view of the project's folder structure and file naming conventions, helping contributors and users easily understand, navigate, and extend the Online Quiz System.

GitHub Project Structure

The screenshot shows a GitHub repository page for 'Online-Quiz-System'. The repository is owned by 'sahanamunusamy' and is public. It has 1 branch ('main') and 0 tags. There is one commit, '119be9c · yesterday', which was added via upload. A file named 'quiz.html' was also added via upload yesterday. The repository has no description, website, or topics provided. It has 0 stars, 1 watching, and 0 forks. There are no releases published, and no packages are published. The languages used in the project are 100% HTML.

Result:

The GitHub repository clearly displays the organized project structure and consistent naming conventions, making it easy for users and contributors to understand and navigate the codebase.