

EXP NO: 1

AZURE DEVOPS ENVIRONMENT SETUP

AIM

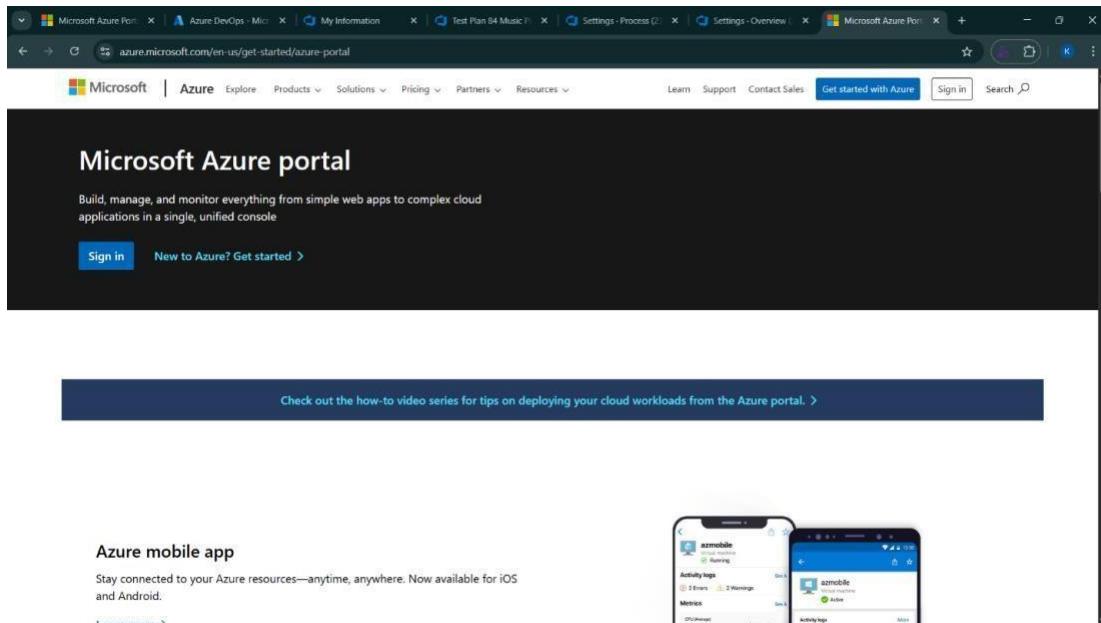
To set up and access the Azure DevOps environment by creating an organization through the Azure portal.

INSTALLATION

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

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

Welcome to Azure!

Don't have a subscription? Check out the following options.

Start with an Azure free trial
Get \$200 free credit toward Azure products and services, plus 12 months of popular free services.

Manage Microsoft Entra ID
Manage access, set smart policies, and enhance security with Microsoft Entra ID.

Azure for Students
Get free software, Azure credit, or access Azure Dev Tools for Teaching after you verify your academic status.

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

azure devops

Welcome to Azure

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Get \$200 free credit toward Azure products and services, plus 12 months of popular free services.

Manage Microsoft Entra ID
Manage access, set smart policies, and enhance security with Microsoft Entra ID.

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Get free software, Azure credit, or access Azure Dev Tools for Teaching after you verify your academic status.

[Start](#) [View](#) [Learn more](#)

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 Microsoft Azure portal interface. At the top, the URL is `portal.azure.com/#view/AzureTfsExtension/OrganizationsTemplateBlade`. The header includes the Microsoft Azure logo, a search bar, and user information. Below the header, the page title is "Azure DevOps". A sub-header reads "Plan smarter, collaborate better, and ship faster with a set of modern dev services". On the left, 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". To the right of the text is a colorful illustration depicting teamwork and technology, such as people working on a board, a ladder, and server racks.

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

The screenshot shows the final step of creating an Azure DevOps organization. It includes fields for the organization name (dev.azure.com/ 23150113), location (India), and a CAPTCHA challenge (3LP JW). A 'Continue' button is at the bottom.

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.

The screenshot shows the Azure DevOps Organizations dashboard. On the left, there's a profile card for Roshni PK with a purple circular icon containing 'RP'. The card displays her name, email (231501137@rajalakshmi.edu.in), location (India), and contact information (231501137@rajalakshmi.edu.in). Below the profile is a section for 'Visual Studio Dev Essentials'. On the right, under 'Azure DevOps Organizations', there are several organization entries: dev.azure.com/231501137 (Owner), dev.azure.com/2315011370384 (Owner), and dev.azure.com/2315011370731 (Owner). The third entry is expanded, showing 'Projects' (ATM, Online Quiz System) and 'Actions' (Open in Visual Studio). A 'Create new organization' button is also visible.

4. Project dashboard

The screenshot shows the Azure DevOps project dashboard for 'Online Quiz System'. The left sidebar includes links for Overview, Summary (which is selected), Dashboards, Wiki, Boards, Repos, Pipelines, Test Plans, Artifacts, and Project settings. The main content area features a title 'Online Quiz System' with options to 'Private' or 'Invite'. Below this is a 'About this project' section with a detailed description of the application's purpose and technology stack. The 'Project stats' section shows 16 boards and 0 issues, with a filter for 'Period: Last 7 days'.

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 is collapsed, showing options like Overview, Boards, Work items, Boards, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, and Project settings. The main area displays the 'Backlog' tab under 'Online Quiz System Team'. It shows three backlog items:

Order	Work Item Type	Title	State	Effort	Business Area
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. At the top right, it displays the user's name 'Roshni PK', email '231501137@rajalakshmi.edu.in', and a 'Sign out' link. Below this, there is a purple circular profile picture with the letters 'RP'. To the right of the profile picture, there are links for 'My Microsoft account' and 'Switch directory'. At the bottom, there is a link for 'Sign in with a different account'.

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 a project backlog board titled "Online Quiz System Team". The backlog is organized into three main epics:

- Epic 1: User Management
 - Feature: User Registration & Login
 - User Story: As an admin, I want to login to manage quizzes and users...
 - User Story: As a player, I want to register and login so that I can play quizzes...
 - Feature: Role Management
 - User Story: As an admin, I want to give users the right access so that they can...
 - User Story: As a player, I want to see only my quizzes and progress...
- Epic 2: Quiz Creation & Management
 - Feature: Quiz Creation & Settings
 - User Story: As an admin, I want to create and configure quizzes with...
 - User Story: As a player, I want to know the quiz instructions and details...
 - Feature: Question Management
 - User Story: As an admin, I want to add questions to quizzes...
- Epic 3: Quiz Participation & Results
 - Feature: Quiz Participation
 - User Story: As a player, I want to participate in quizzes...
 - Feature: View Results
 - User Story: As a player, I want to view my results and scores...

1. Fill in Epics

The screenshot shows the details of an epic work item titled "User Management".

Work Item Details:

- Title:** User Management
- State:** New
- Area:** Online Quiz System
- Iteration:** Online Quiz System\Sprint 1

Description: Click to add Description.

Planning:

- Priority: 2
- Risk
- Effort
- Business Value
- Time Criticality

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 a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request.

2.Fill in Features

The screenshot shows a 'FEATURE 2' work item in the 'Online Quiz System' project. The 'Planning' section includes fields for State (New), Reason (New), Area (Online Quiz System), and Iteration (Online Quiz System\Sprint 1). The 'Deployment' section contains a note about tracking releases. The 'Development' section is collapsed.

Description	Planning	Deployment
Click to add Description.	Priority 2 Risk Effort Business Value Time Criticality	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

3.Fill in User Story Details

The screenshot shows a 'USER STORY 3' work item in the 'Online Quiz System' project. The 'Planning' section includes fields for State (New), Reason (New), Area (Online Quiz System), and Iteration (Online Quiz System\Sprint 1). The 'Deployment' section contains a note about tracking releases. The 'Development' section is collapsed.

Description	Planning	Deployment
Click to add Description.	Story Points Priority 2 Risk	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

RESULT

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

EX 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 DevOps Boards - Sprints page for the 'Online Quiz System' project. The left sidebar is visible with 'Boards' selected. The main area displays the 'Online Quiz System Team' board for 'Sprint 1'. The backlog contains three user stories:

- 3 As an admin, I want to login to manage quizzes and users.
- 4 As a player, I want to register and login so that I can access quizzes securely.
- 6 As an admin, I want to give users the right access so they can use the system properly.

The stories are all listed under the 'New' column. The sprint duration is shown as 'April 28 - May 12 11 work days'.

Sprint 2

This screenshot is identical to the one above, showing the 'Online Quiz System Team' board for 'Sprint 1'. The backlog contains the same three user stories: 3, 4, and 6. All stories are in the 'New' column, and the sprint duration is 'April 28 - May 12 11 work days'. The left sidebar shows 'Sprints' is also selected.

Sprint 3

The screenshot shows the Azure DevOps Taskboard for the Online Quiz System Team. The board is set to Sprint 1 and filters by Person: All. The columns are New, Active, Resolved, and Closed. There are three backlog items:

- 3** As an admin, I want to login to manage quizzes and users.
Status: New
Assignee: Unassigned
- 4** As a player, I want to register and login so that I can access quizzes securely.
Status: New
Assignee: Unassigned
- 6** As an admin, I want to give users the right access so they can use the system properly.
Status: New
Assignee: Unassigned

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 a 'USER STORY 16' creation screen. The story title is '16 As an admin, I want to manage a question bank so I can reuse questions easily.' The story state is 'New'. The area is 'Online Quiz System' and the iteration is 'Online Quiz System\Sprint 1'. The 'Description' section has a placeholder 'Click to add Description.'. The 'Acceptance Criteria' section has a placeholder 'Click to add Acceptance Criteria.'. The 'Discussion' section is empty. In the 'Planning' section, 'Story Points' are listed as '2'. The 'Priority' is '2' and 'Risk' is '0'. In the 'Classification' section, 'Value area' is listed. In the 'Deployment' section, there is a note: '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](#)'.

RESULT

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

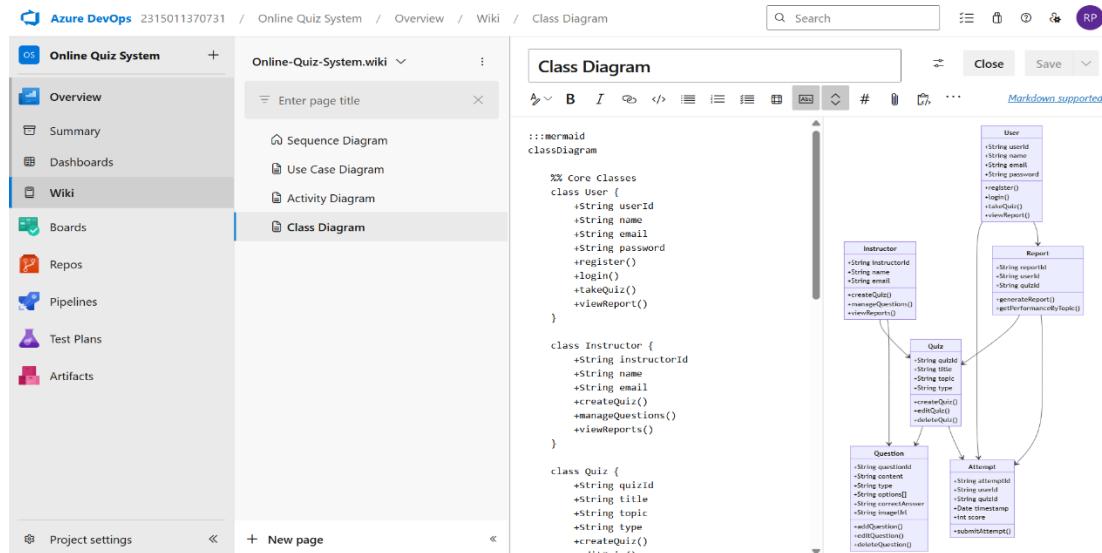
EXP NO: 6

DESIGNING CLASS AND SEQUENCE DIAGRAMS FOR PROJECT ARCHITECTURE

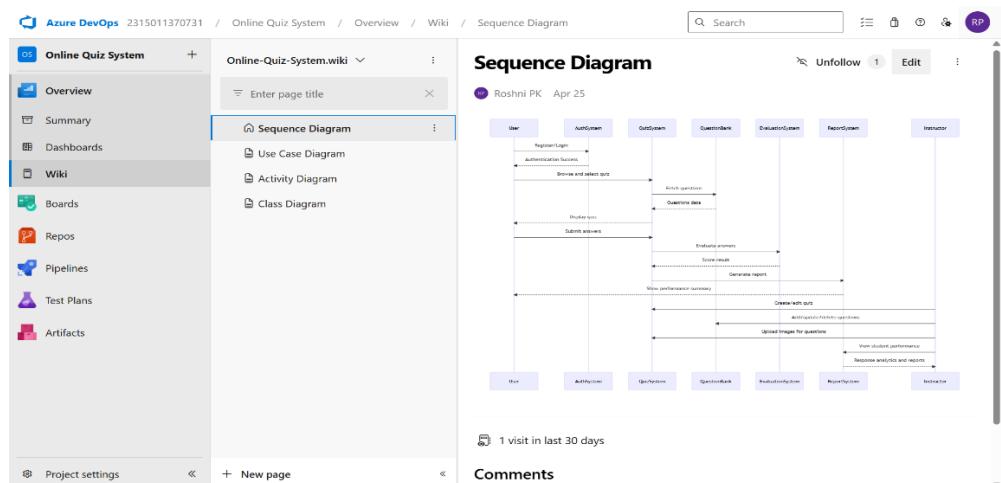
AIM

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.

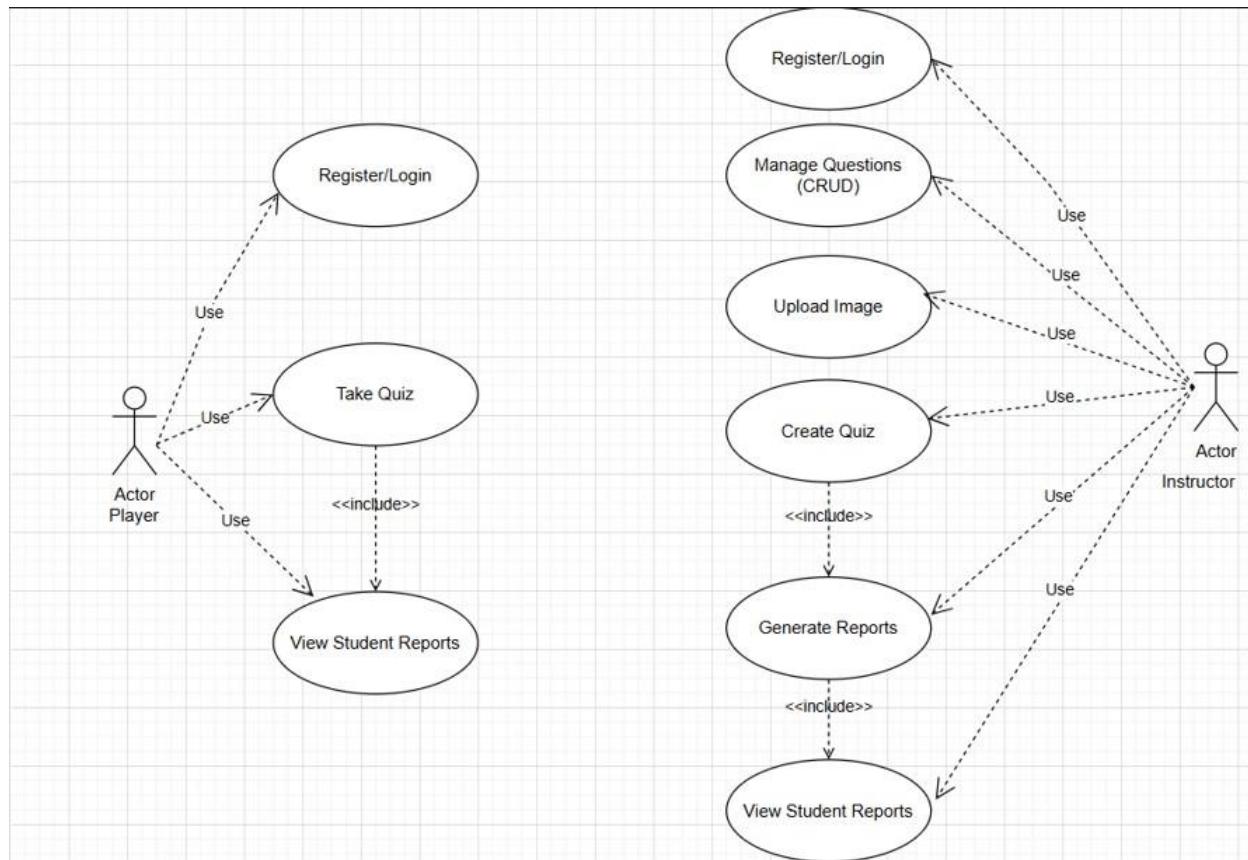
EXP NO: 7

DESIGNING USE-CASE AND ACTIVITY DIAGRAMS FOR PROJECT STRUCTURE

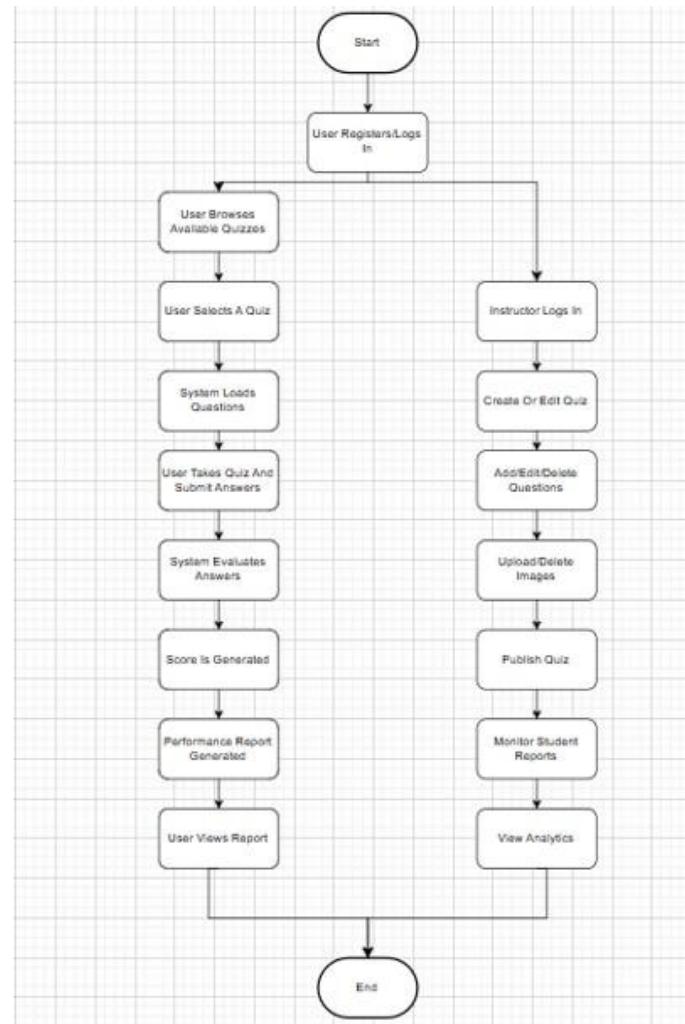
AIM

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.

EXP NO: 8	TESTING – TEST PLANS AND TEST CASES
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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 'New Test Plan' creation interface in Azure DevOps. The left sidebar lists project navigation options: Overview, Boards, Repos, Pipelines, Test Plans (selected), Test plans, Progress report, Parameters, Configurations, and Project settings. The main area displays the 'New Test Plan' form with the following fields:

- Name: Quiz Timer and Navigation
- Area Path: Online Quiz System
- Iteration: Online Quiz System\Sprint 1 (4/28/2025 - 5/12/2025)

At the bottom right are 'Create' and 'Cancel' buttons.

2. Test suite

The screenshot shows the 'Test plans' section of Azure DevOps. The left sidebar shows 'Test plans' selected. The main area displays the 'Login Verification' test suite details:

- Test Suite ID: 27
- Date Range: Apr 28 - May 12
- Status: 100% run, 100% passed
- Test Points (3 items):
 - Title (Passed)
 - Valid Login (Passed)
 - Invalid Username (Passed)
 - Invalid Password (Passed)

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

o Action:

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

o Expected Results:

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

o Type: Happy Path

2. TC02 – Invalid Username

o Action:

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

o 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

The screenshot shows the Azure DevOps interface for the "Online Quiz System" project. On the left, there's a sidebar with links like Overview, Boards, Repos, Pipelines, Test Plans, Test plans, Progress report, Parameters, Configurations, and Project settings. The main area is titled "Test Plans" and shows a table with three rows of data:

Title	Test Plan ID	State	Area Path	Iteration	Assigned To
Quiz Results	36	Active	Online Quiz System	Online Quiz System\Spr	Roshni PK
Quiz Creation	31	Active	Online Quiz System	Online Quiz System\Spr	Roshni PK
Login Verification	26	Active	Online Quiz System	Online Quiz System\Spr	Roshni PK

This screenshot shows a detailed view of a test case titled "Valid Login". The top bar includes the title, a user profile for "Roshni PK", and buttons for "Save and Close", "Follow", and "Edit". Below the title, there are fields for "Reason" (set to "New") and "Iteration" (set to "Online Quiz System\Sprint 1"). The main content is divided into "Steps" and "Deployment".

Steps:

- 1. Navigate to the login page.
- 2. Enter a valid username or email.
- 3. Enter a valid password.
- 4. Click the login button.
- 5. User is redirected to the dashboard/homepage.

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.

Azure DevOps 2315011370731 / Online Quiz System / Test Plans / Login Verification

Search RP

Online Quiz System

- Overview
- Boards
- Repos
- Pipelines
- Test Plans**
- Test plans
- Progress report
- Parameters
- Configurations
- Project settings

← Login Verification Past

Apr 28 - May 12
100% run, 100% passed. [View report](#)

Test Suites

Filter suites by name

Login Verification (3)

Login Verification (ID: 27)

Define Execute Chart

Test Points (3 items) Run for web application

Title	Outcome
<input checked="" type="checkbox"/> Valid Login	Passed
<input type="checkbox"/> Invalid Username	Passed
<input type="checkbox"/> Invalid Password	Passed

ACTFIBERNET Internet access

Azure DevOps 2315011370731 / Online Quiz System / Test Plans / Quiz Creation

Search RP

Online Quiz System

- Overview
- Boards
- Repos
- Pipelines
- Test Plans**
- Test plans
- Progress report
- Parameters
- Configurations
- Project settings

← Quiz Creation Past

Apr 28 - May 12
100% run, 66% passed. [View report](#)

Test Suites

Filter suites by name

Quiz Creation (3)

Quiz Creation (ID: 32)

Define Execute Chart

Test Points (3 items) Run for web application

Title	Outcome
<input type="checkbox"/> Title	Passed
<input type="checkbox"/> Valid Quiz Creation	Passed
<input type="checkbox"/> Missing Title	Passed
<input type="checkbox"/> Invalid Time Range	Passed

TEST CASE 33 Valid Quiz Creation

Roshni PK 0 Comments Add Tag Save and Close Follow

State: Design Area: Online Quiz System Updated by Roshni PK: 2h ago

Reason: New Iteration: Online Quiz System\Sprint 1

Steps Summary Associated Automation

Steps:

Step	Action	Expected result
1.	Login as admin/instructor.	
2.	Go to "Create Quiz" page.	
3.	Add questions with correct answers.	
4.	Click "Create or Save".	Quizzes created and listed
5.		

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.

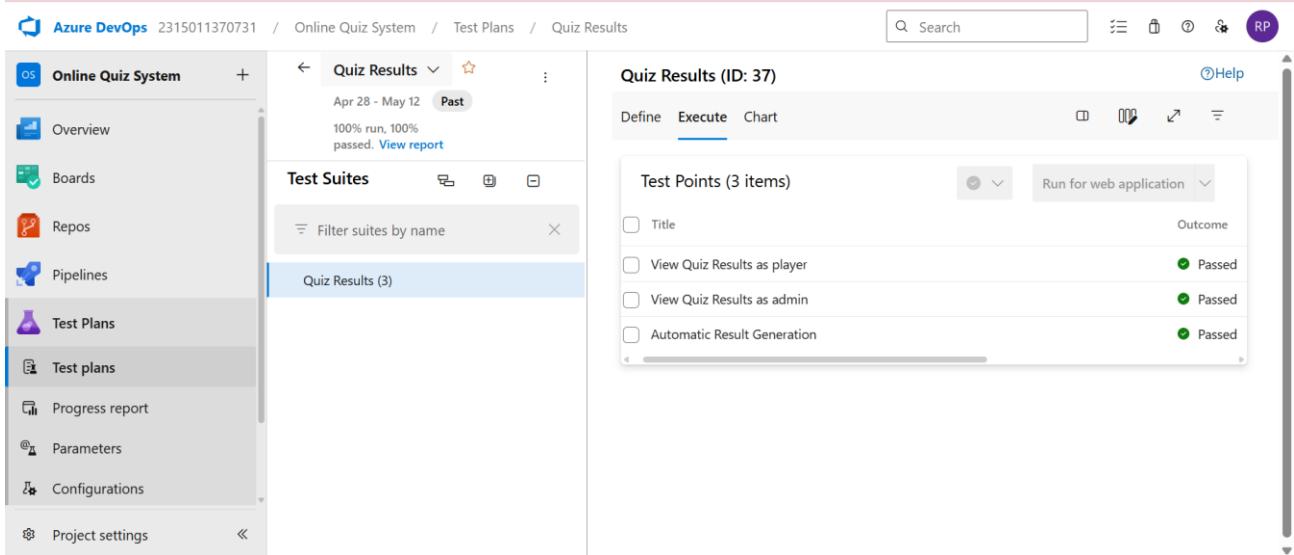
Azure DevOps 2315011370731 / Online Quiz System / Test Plans / Quiz Results

Quiz Results (ID: 37)

Test Points (3 items)

	Title	Outcome
<input type="checkbox"/>	View Quiz Results as player	Passed
<input type="checkbox"/>	View Quiz Results as admin	Passed
<input type="checkbox"/>	Automatic Result Generation	Passed

Run for web application



TEST CASE 38

38 View Quiz Results as player

Roshni PK 0 Comments Add Tag

Save and Close Follow

State: Design Area: Online Quiz System Updated by Roshni PK: 2h ago

Reason: New Iteration: Online Quiz System\Sprint 1

Steps Summary Associated Automation

Steps

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

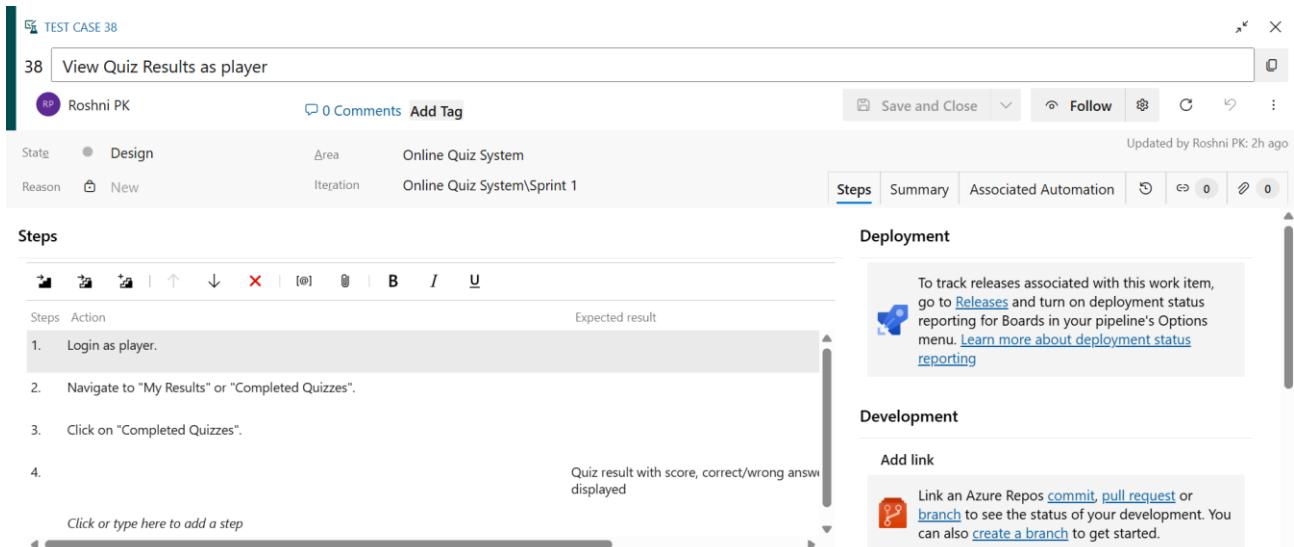
Deployment

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](#)

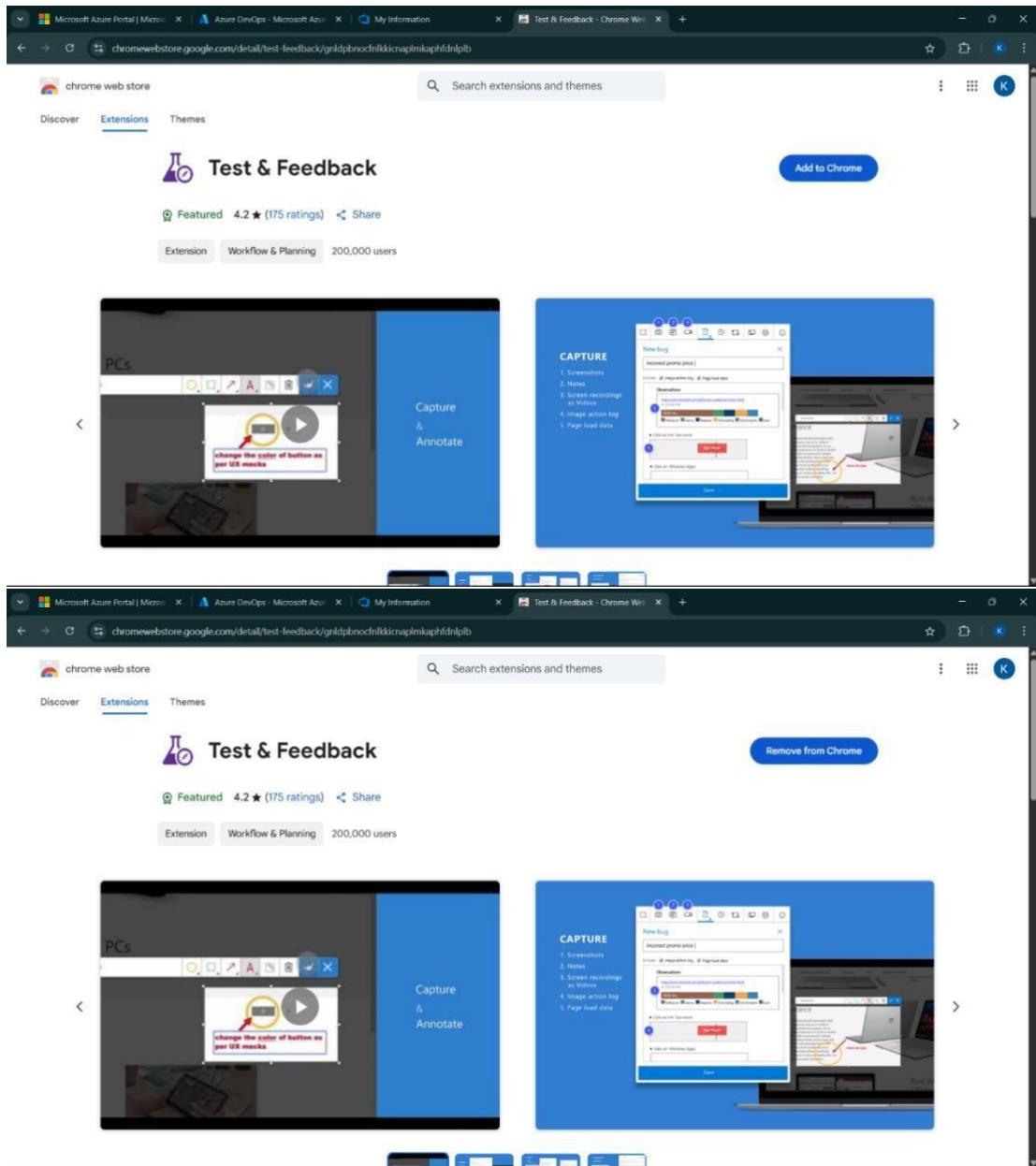
Development

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.



4. Installation of test

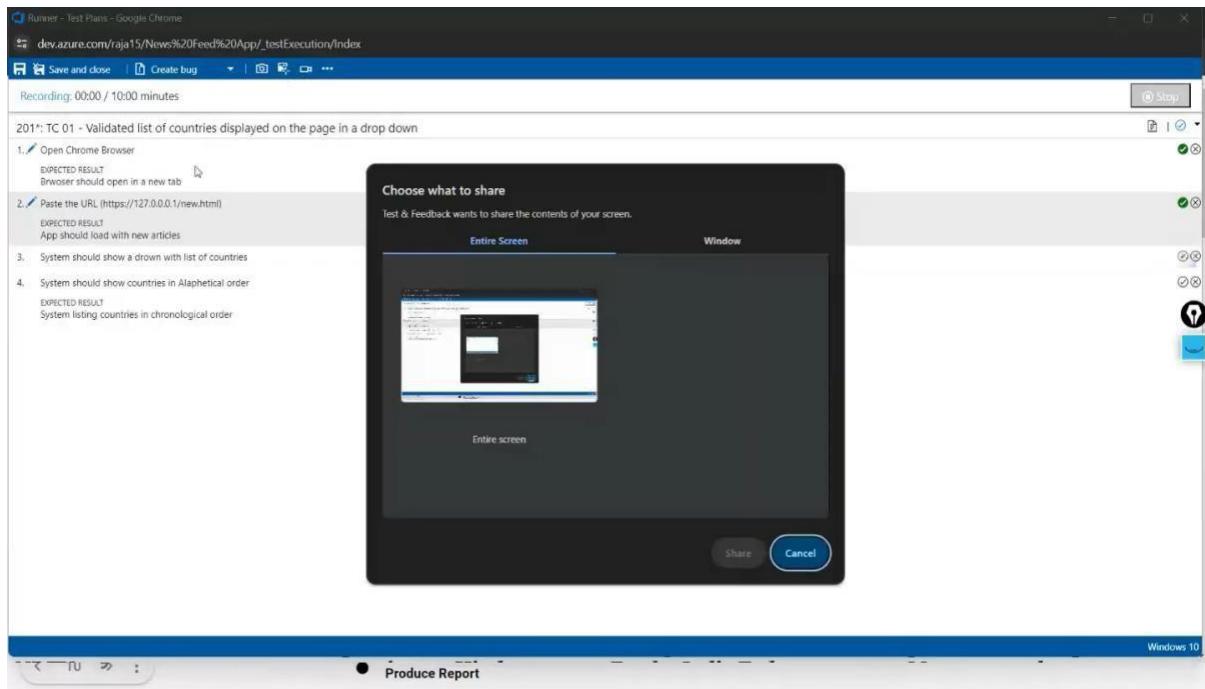


5. Running the test cases

The screenshot shows the Azure DevOps Test Plans interface. On the left, the navigation bar includes 'Online Quiz System', 'Overview', 'Boards', 'Repos', 'Pipelines', 'Test Plans' (selected), 'Test plans' (under 'Test Plans'), 'Progress report', 'Parameters', 'Configurations', and 'Project settings'. The main area displays the 'Login Verification' test plan, which was run from April 28 to May 12, resulting in a 100% pass rate. The 'Execute' tab is selected, showing 'Test Points (3 items)'. The first item, 'Valid Login', is checked and marked as passed. Other items include 'Invalid Username' and 'Invalid Password', both uncheckable. A context menu is open for the 'Valid Login' item, listing options like 'View execution history', 'Mark Outcome', 'Run', 'Reset test to active', 'Edit test case', 'Assign tester', and 'View test result'. The 'Run for web application' button is also visible.

The screenshot shows the 'Runner - Test Plans - Google Chrome' window. The URL is 'dev.azure.com/2315011300815/Online%20Quiz%20System/_testExecution/Index'. The test case is titled '24: Valid Login'. The steps are: 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. The status for each step is marked as 'PASSED' (indicated by a green circle with a checkmark).

6.Recording the test case



7.Creating the bug

A screenshot of the "New Bug" creation form in Azure DevOps. The title field contains "user should not login with invalid details". The "State" is "Unassigned" and "Reason" is "New". The "Area" is "Online Quiz System" and "Iteration" is "Online Quiz System\sprint 1". The "Repro Steps" section shows a single step: "5/17/2025 11:00 AM Bug filed on "Valid Login"". The "Planning" section includes fields for "Resolved Reason", "Story Points", "Priority" (set to 2), "Severity" (set to 3 - Medium), and "Activity". The "Deployment" section has a note about tracking releases. The "Development" section includes a link to Azure Repos. The "Effort (Hours)" section shows "Original Estimate" and "Remaining". The "Related Work" section has a button to add a link. At the bottom right, there is a note to "Add an existing work item as a parent".

NEW BUG *

user should not enter invalid details

Unassigned 0 comments Add tag

Save & Close Refresh More

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

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

Online Quiz System

Test Suites

Filter suites by name

Test Points (3 items)

- Valid Login
- Invalid Username
- Invalid Password

Valid Login

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' work item in the 'Online Quiz System' project. The work item details are as follows:

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

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.

Effort (Hours):

- Original Estimate:
- Remaining:

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 'Online Quiz System' project. The left sidebar includes options like Overview, Boards, Repos, Pipelines, Test Plans, Test plans, Progress report (which is selected), Parameters, Configurations, Runs, Artifacts, Project settings, and a back arrow.

The main area displays the following data:

- Summary:**
 - 1 Test plans
 - 3 Test points
 - 3 (3 / 3) Test points run (100% Run)
 - 100% Pass rate (3 / 3 Passed)
- Outcome trend:** A chart showing the number of tests over time from May 4 to May 18. The trend shows a sharp increase starting around May 15, with all tests marked as 'Passed' (green).

Azure DevOps 2315011370731 / Online Quiz System / Test Plans / Progress report

Search RP

Online Quiz System

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

Project settings

Summary

- 2 Test plans
- 6 Test points
- 6 (6 / 6) Test points run
- 100% Run
- 83% (5 / 6) Pass rate
- 5 Passed, 1 Failed

Outcome trend

Last 14 Days

Tests

2025-05-04 2025-05-05 2025-05-06 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

Passed Failed

Details

Azure DevOps 2315011370731 / Online Quiz System / Test Plans / Progress report

Search RP

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 ▾ X

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

2025-05-04 2025-05-05 2025-05-06 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

Passed

11.Changing the test template

Azure DevOps 2315011370731 / Settings / Process

Organization Settings 2315011370731

General

- Overview
- Projects
- Users
- Billing
- Global notifications
- Usage
- Extensions
- Microsoft Entra

Security

- Security overview
- Policies
- Permissions

Boards

Process

All processes

Processes Fields

Help Filter by process name

Name	Description	Team projects
Basic (default)	This template is flexible for any process and gr...	1
Agile	This template is flexible and will work great for ...	1
Scrum	This template is for teams who follow the Scru...	0
CMMI	This template is for more formal projects requi...	0

Azure DevOps 2315011370731 / Settings / Process

Organization Settings 2315011370731

General

- Overview
- Projects
- Users
- Billing
- Global notifications
- Usage
- Extensions
- Microsoft Entra

Security

- Security overview
- Policies
- Permissions

Boards

Process

All processes > Agile

Work item types Backlog levels Projects

Help Filter by work item type n...

System processes cannot be customized. To add customization [create an inherited process](#).

Name	Description
Bug	Describes a divergence between required and actual behavior, and tracks the work done t...
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.

Azure DevOps 2315011300815 / Online Quiz System / Pipelines

Pipelines

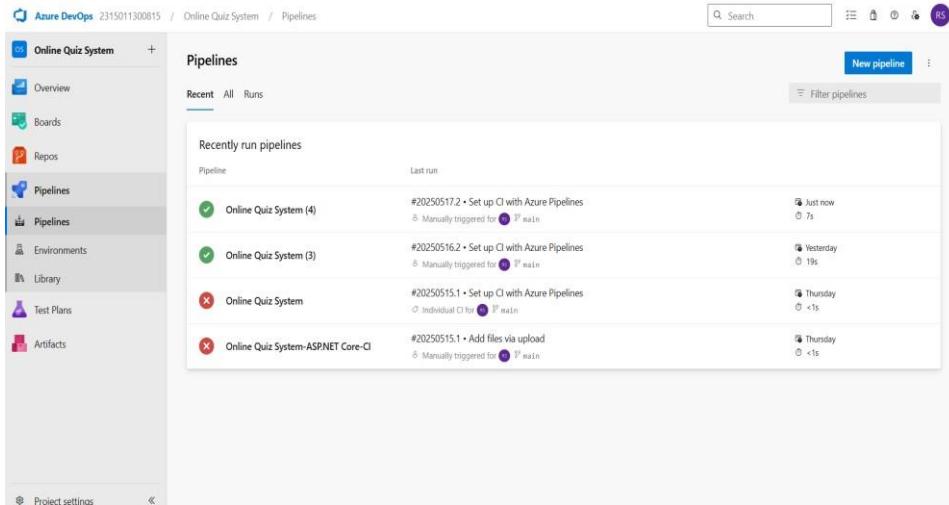
Recent All Runs

Recently run pipelines

Pipeline	Last run
Online Quiz System (4)	#20250517.2 • Set up CI with Azure Pipelines Manually triggered for main
Online Quiz System (3)	#20250516.2 • Set up CI with Azure Pipelines Manually triggered for main
Online Quiz System	#20250515.1 • Set up CI with Azure Pipelines Individual CI for main
Online Quiz System-ASP.NET Core-Cl	#20250515.1 • Add files via upload Manually triggered for main

New pipeline Filter pipelines

Project settings



Azure DevOps 2315011300815 / Online Quiz System / Pipelines / Online Quiz System (4) / 20250517.1

#20250517.1 • Set up CI with Azure Pipelines

This run is being retained as one of 3 recent runs by main (Branch).

View retention leases

Summary Code Coverage

Individual CI by Ranjani Sai

Repository and version

- Online Quiz System
- main 06a981f7

Time started and elapsed

- Just now
- 9s

Related

- 0 work items
- 0 artifacts

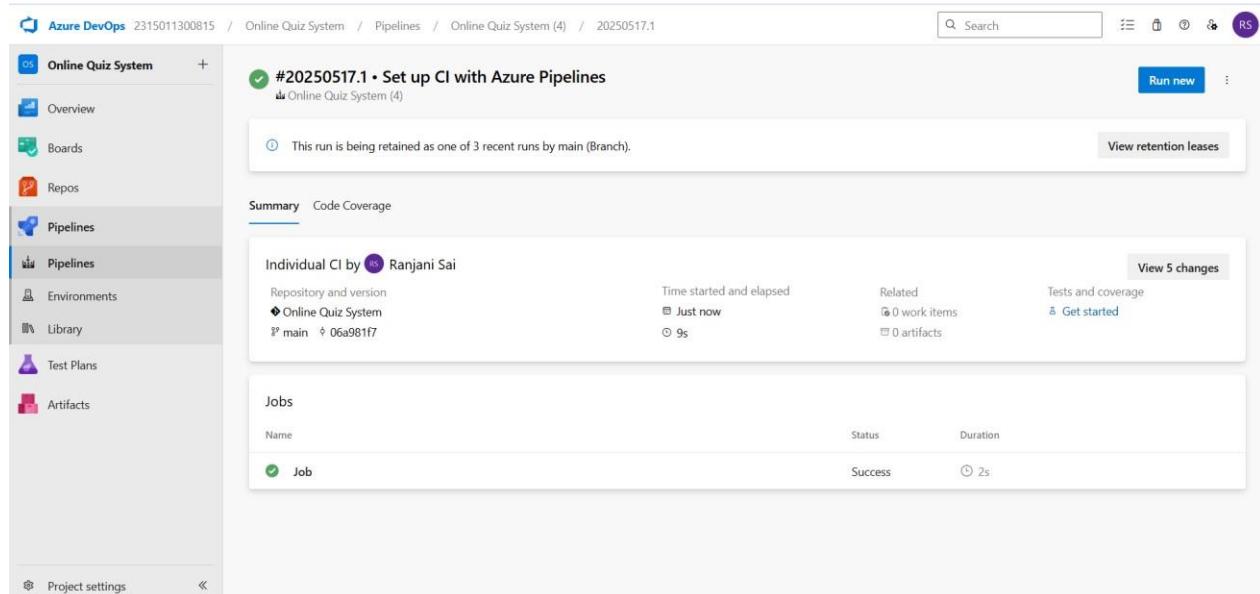
View 5 changes Tests and coverage

Get started

Jobs

Name	Status	Duration
Job	Success	2s

Project settings



The screenshot shows the Azure DevOps interface for the "Online Quiz System" project. The left sidebar has a "Pipelines" section selected. The main area displays a pipeline run titled "#20250517.2 • Set up CI with Azure Pipelines". It indicates that this run is retained as one of three recent runs by the main branch. The "Summary" tab is active, showing details like the runner (Ranjani Sai), repository (Online Quiz System, branch main, commit 06a981f7), and time started (Just now). The "Jobs" section shows a single job named "Job" that completed successfully in 2 seconds. There are also tabs for "Code Coverage", "Related" (0 work items, 0 artifacts), and "Tests and coverage" (Get started).

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. At the top, there is a navigation bar with links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The main area displays the repository details for 'Online-Quiz-System-Software-Construction'. It shows 1 branch and 0 tags. A list of commits is shown, with the most recent being 'Roshni-PK Update README.md' (8786f70 · now · 4 Commits). Other commits include 'Update README.md' (now), 'Add files via upload' (1 minute ago), and 'Add files via upload' (3 days ago). On the right side, there are sections for About (No description, website, or topics provided), Activity (0 stars, 1 watching, 0 forks), Releases (No releases published, Create a new release), Packages (No packages published, Publish your first package), and Languages (represented by a red progress bar).

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.