

INDEX

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EXP NO: 1

AZURE DEVOPS ENVIRONMENT SETUP

Aim:

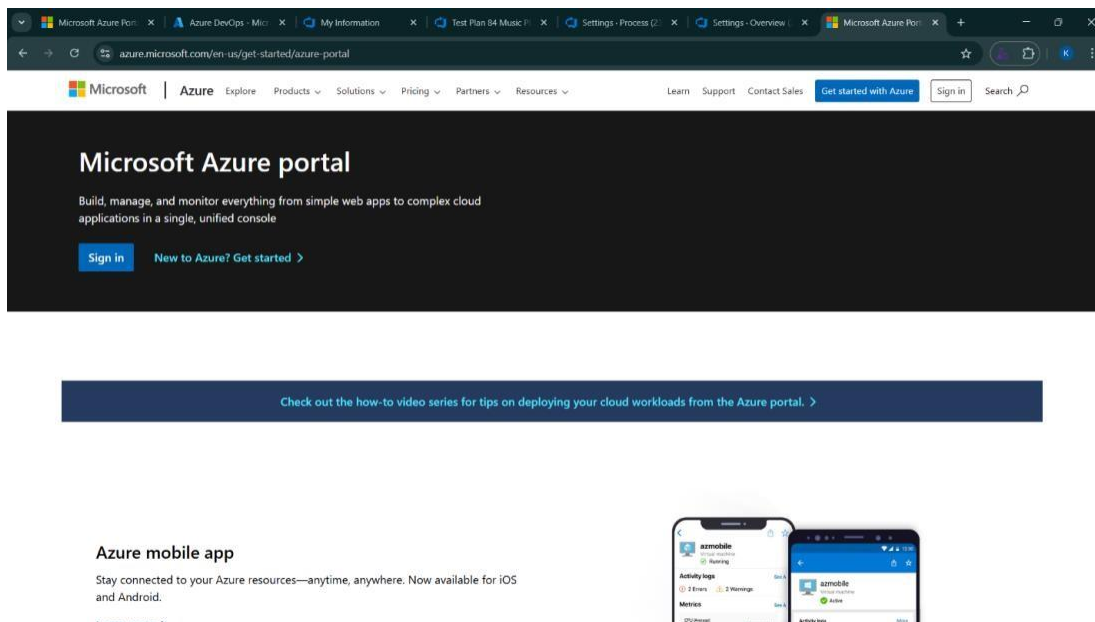
To set up and access the Azure DevOps environment by creating an organization through the Azure portal.

INSTALLATION

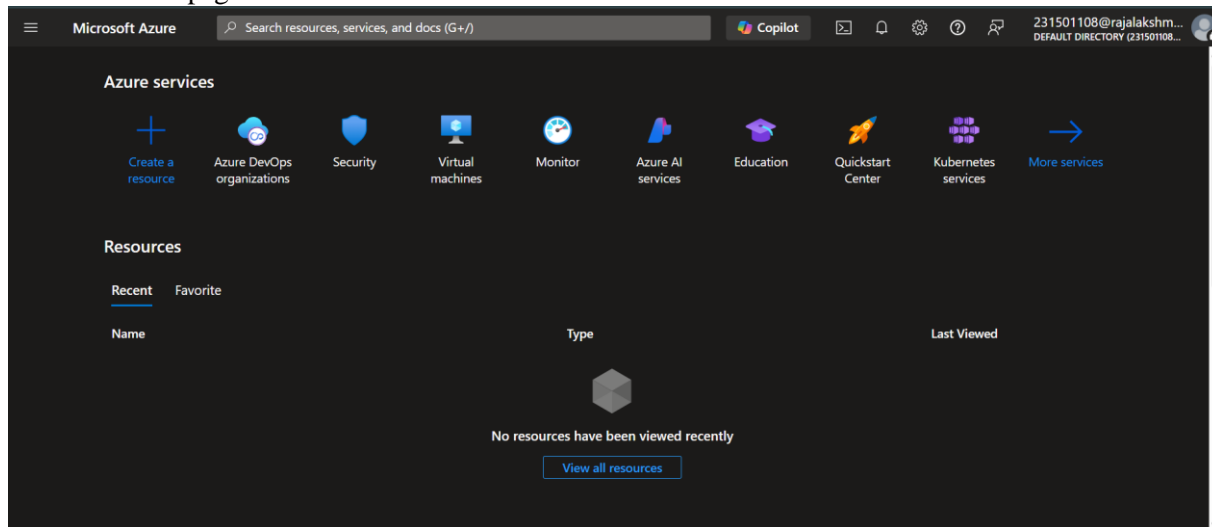
1. Open your web browser and go to the Azure website: <https://azure.microsoft.com/en-us/get-started/azure-portal>.

Sign in using your Microsoft account credentials.

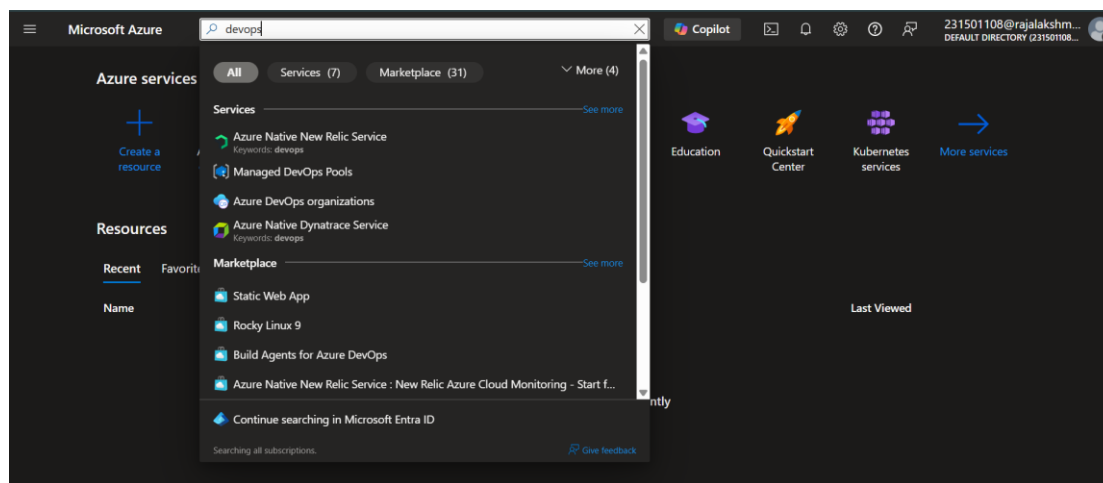
If you don't have a Microsoft account, you can create one here: <https://signup.live.com/?lic=1>



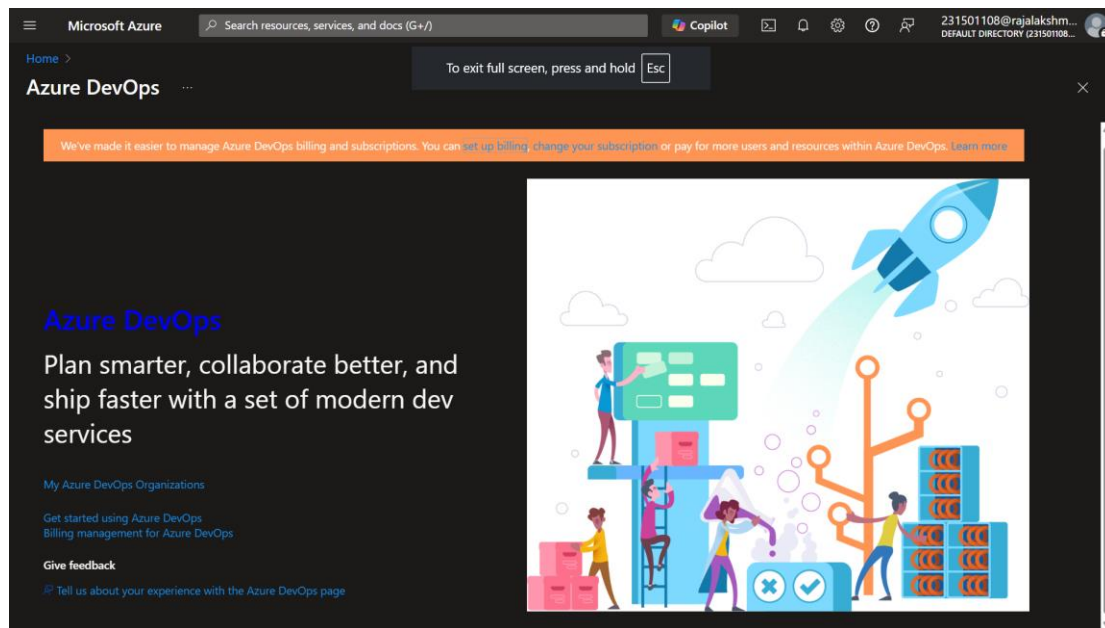
2. Azure home page



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



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.



Result:

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

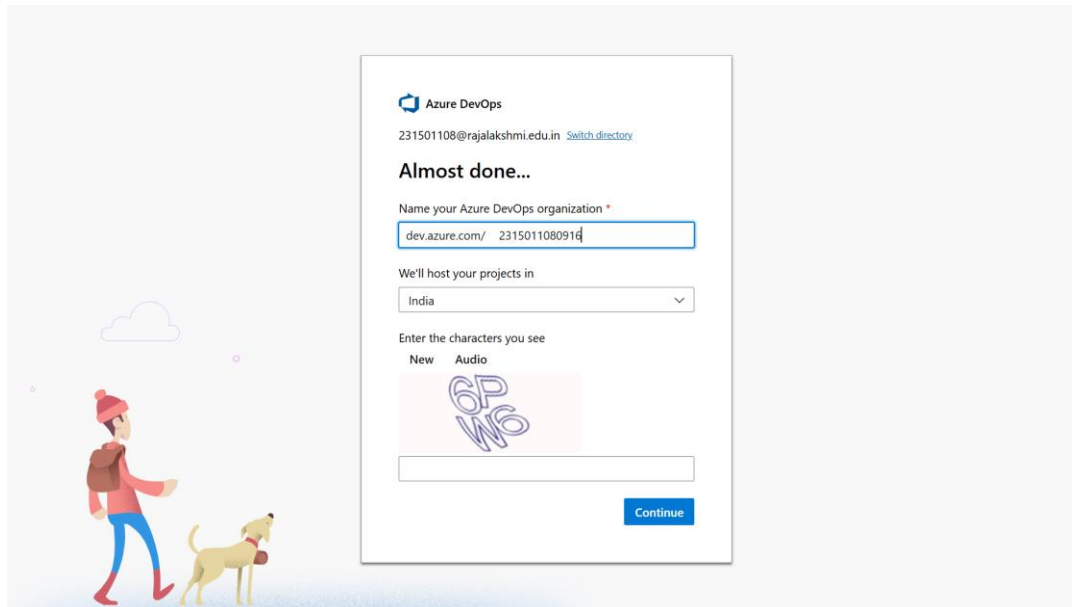
EXP NO: 2

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

- 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.
- On the organization's **Home page**, click on the **New Project** button.
- 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).
- Once you've filled out the details, click **Create** to set up your first project.

Create new project ✕

Project name *
Social Media

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.

By creating this project, you agree to the Azure DevOps [code of conduct](#)

^ Advanced

Version control ?
Git

Work item process ?
Agile

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.

Microsoft Nikash KG Sign out

To exit full screen, press and hold Esc

Azure DevOps Organizations [Create new organization](#)

dev.azure.com/231501108 (Owner)

Projects

- Socila Media
- ATM1
- [New project](#)

Actions

[Open in Visual Studio](#)

Organizations Pending Deletion - [Expand](#)

Nikash KG [Edit profile](#)

231501108@rajalakshmi.edu.in

Microsoft account

India

231501108@rajalakshmi.edu.in

Visual Studio Dev Essentials

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

[Use your benefits](#)

4. Project dashboard

Azure DevOps 231501108 / Socila Media / Overview / Summary

Search

Socila Media [Public](#) [Invite](#) [Star](#)

About this project

Help others to get on board!
Describe your project and make it easier for other people to understand it.

[+ Add Project Description](#)

Project stats [Period: Last 7 days](#)

Boards

- 0 Work items created
- 0 Work items completed

Members 4

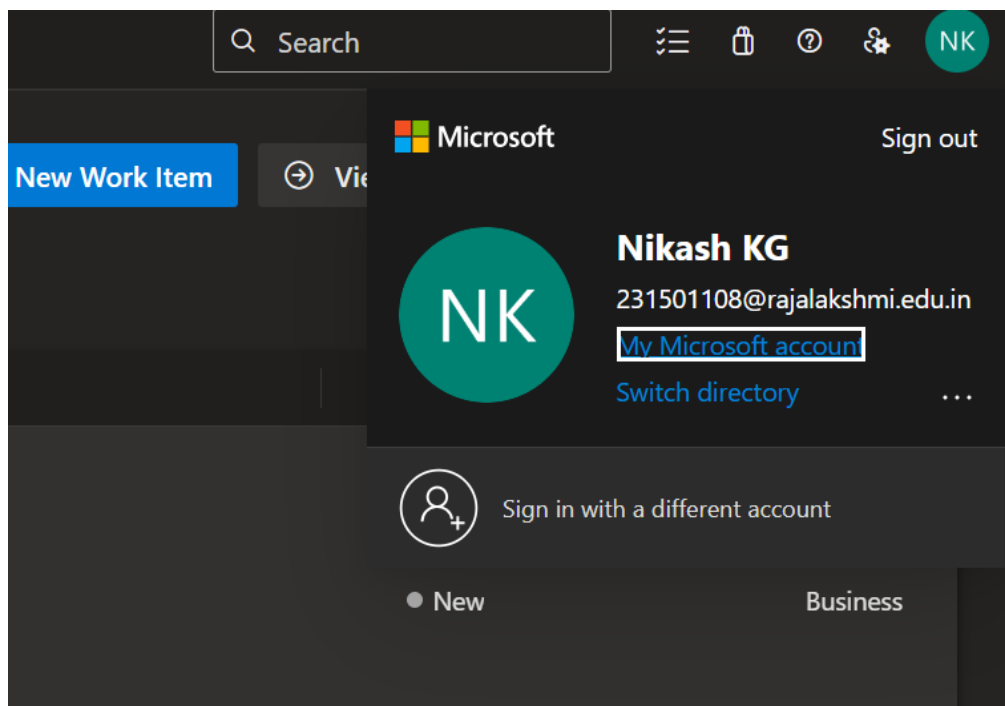
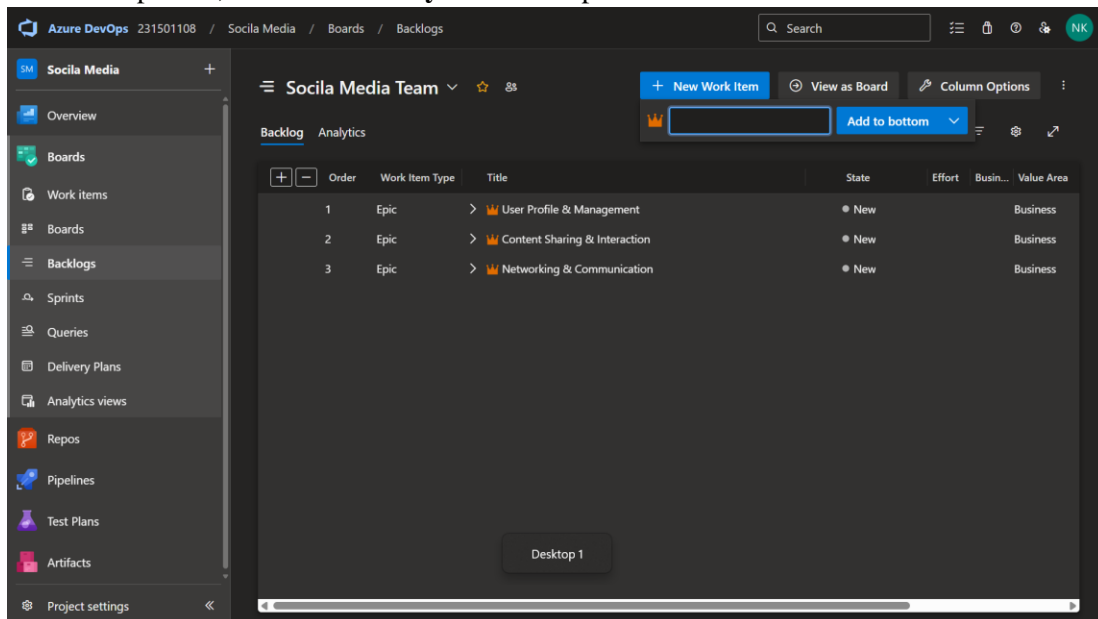
[Project settings](#)

5.

6. To manage user stories:

a. 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.

b. 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.



Result:

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

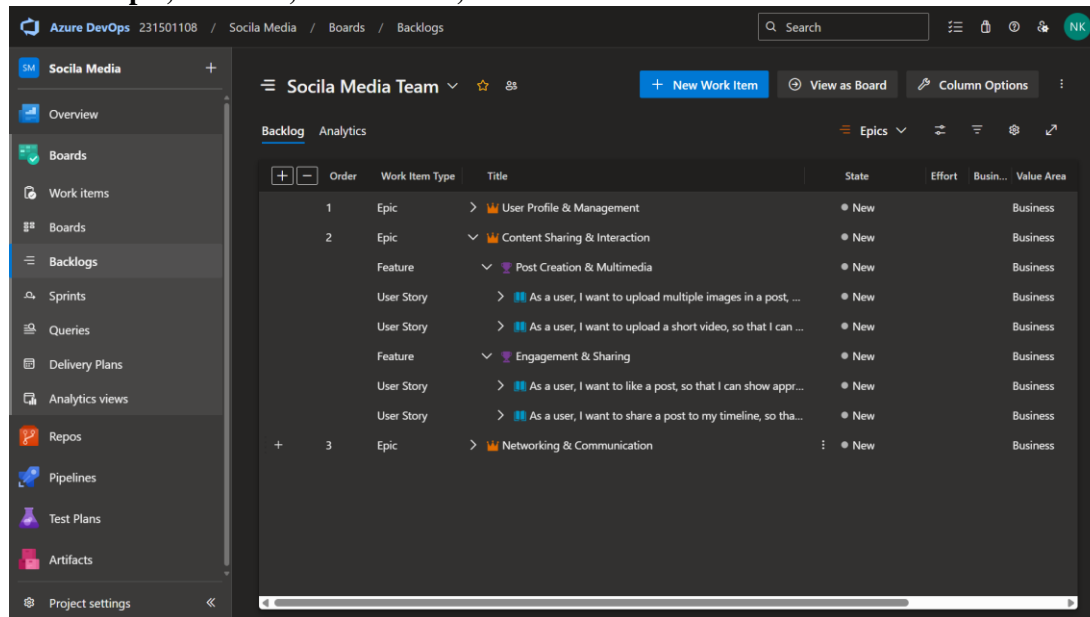
EXP NO: 3

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

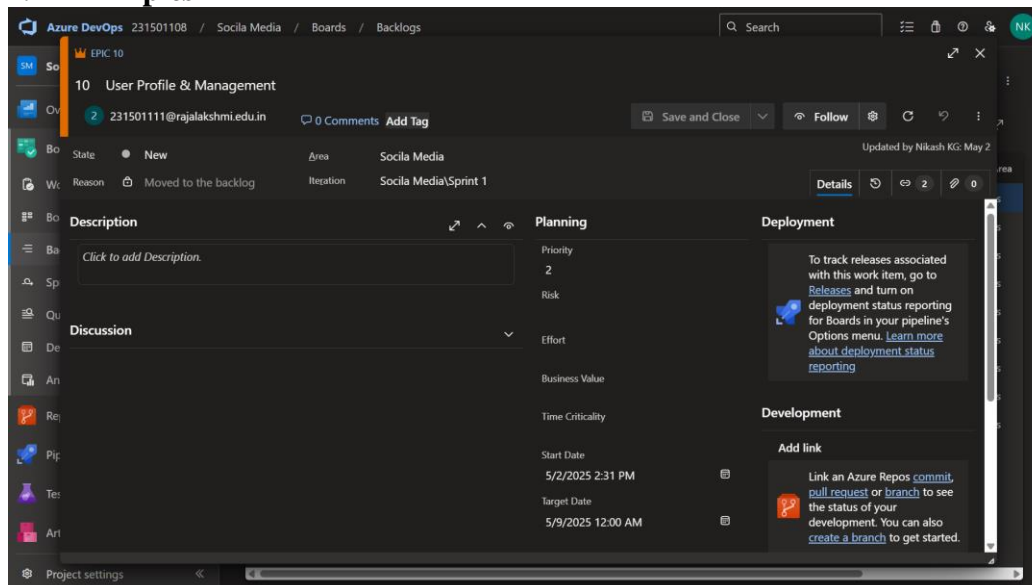
Aim:

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

Create Epic, Features, User Stories, Task



1.Fill in Epics



2.Fill in Features

The screenshot shows the Azure DevOps interface for a feature named "11 Profile Creation & Editing". The breadcrumb navigation at the top indicates the path: Azure DevOps > 231501108 > Socila Media > Boards > Backlogs. The feature is associated with the user "phoojithaajanathanan2005@gmail" and has 0 comments. The status is "Active", the area is "Socila Media", and the iteration is "Socila Media\Sprint 3". The feature is updated by "Nikash KG" on May 2. The left sidebar shows a list of feature types: Description, Discussion, Qu, De, An, Re, Pi, Te, and Art. The main content area is divided into three sections: Planning, Deployment, and Development. The Planning section includes fields for Priority (2), Risk, Effort, Business Value, Time Criticality, Start Date, and Target Date. The Deployment section includes a link to "Releases" and a button to "Add link". The Development section includes a link to "Add link" and a button to "Add link".

3.Fill in User Story Details

The screenshot shows the Azure DevOps interface for a user story named "12 As a user, I want to upload a profile picture, so that my profile is visually appealing.". The breadcrumb navigation at the top indicates the path: Azure DevOps > 231501108 > Socila Media > Boards > Backlogs. The user story is associated with the user "231501111@rajalakshmi.edu.in" and has 0 comments. The status is "New", the area is "Socila Media", and the iteration is "Socila Media\Sprint 1". The user story is updated by "Nikash KG" on Apr 10. The left sidebar shows a list of user story types: Description, Acceptance Criteria, Discussion, Re, Pi, Te, and Art. The main content area is divided into three sections: Planning, Deployment, and Development. The Planning section includes fields for Story Points, Priority (2), and Risk. The Deployment section includes a link to "Releases" and a button to "Add link". The Development section includes a link to "Add link" and a button to "Add link".

Result:

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

EXP NO: 4

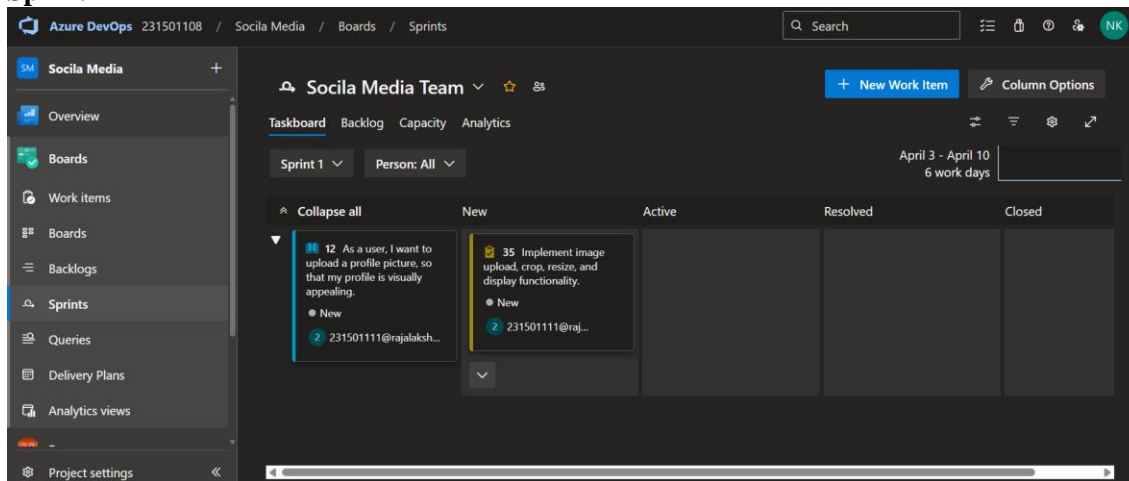
SPRINT PLANNING

Aim:

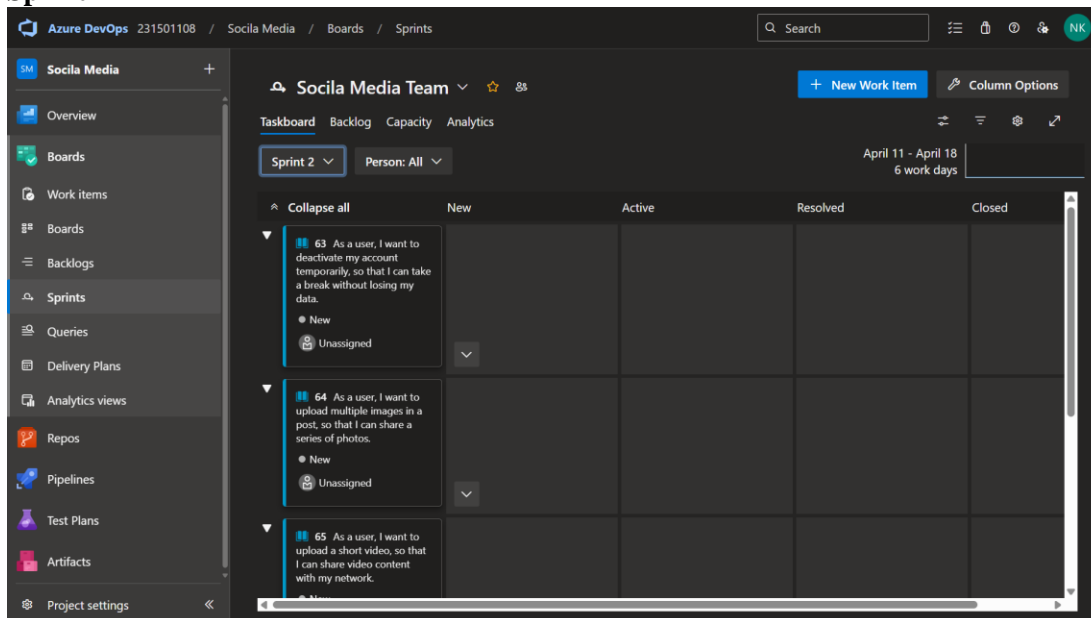
To assign user story to specific sprint for the Music Playlist Batch Creator Project.

Sprint Planning

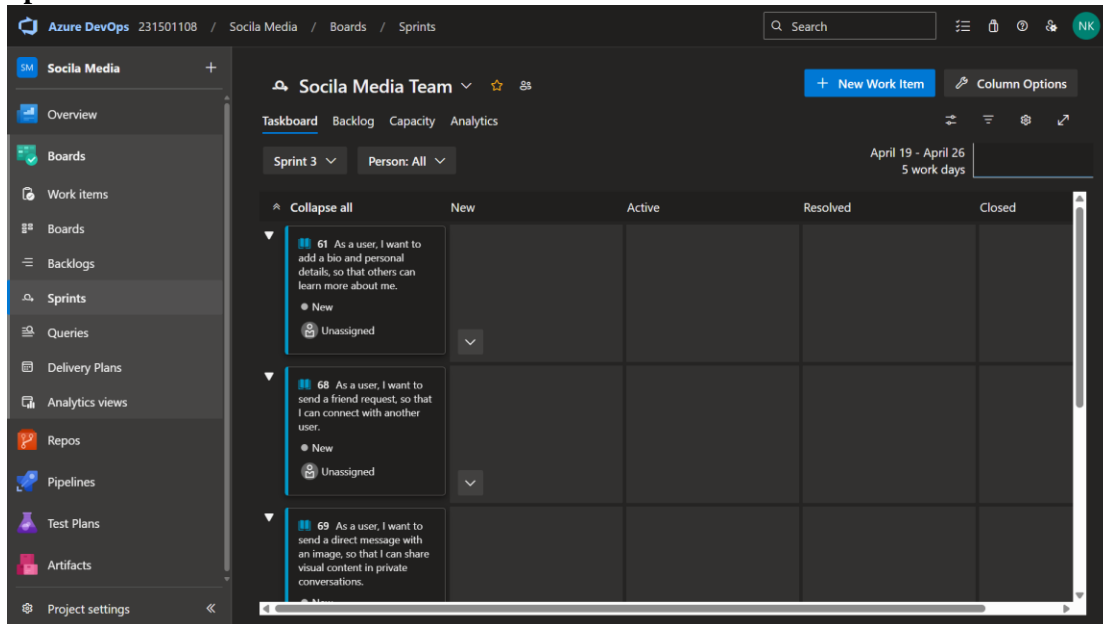
Sprint 1



Sprint 2



Sprint 3



Result:

The Sprints are created for the Music Playlist Batch Creator Project.

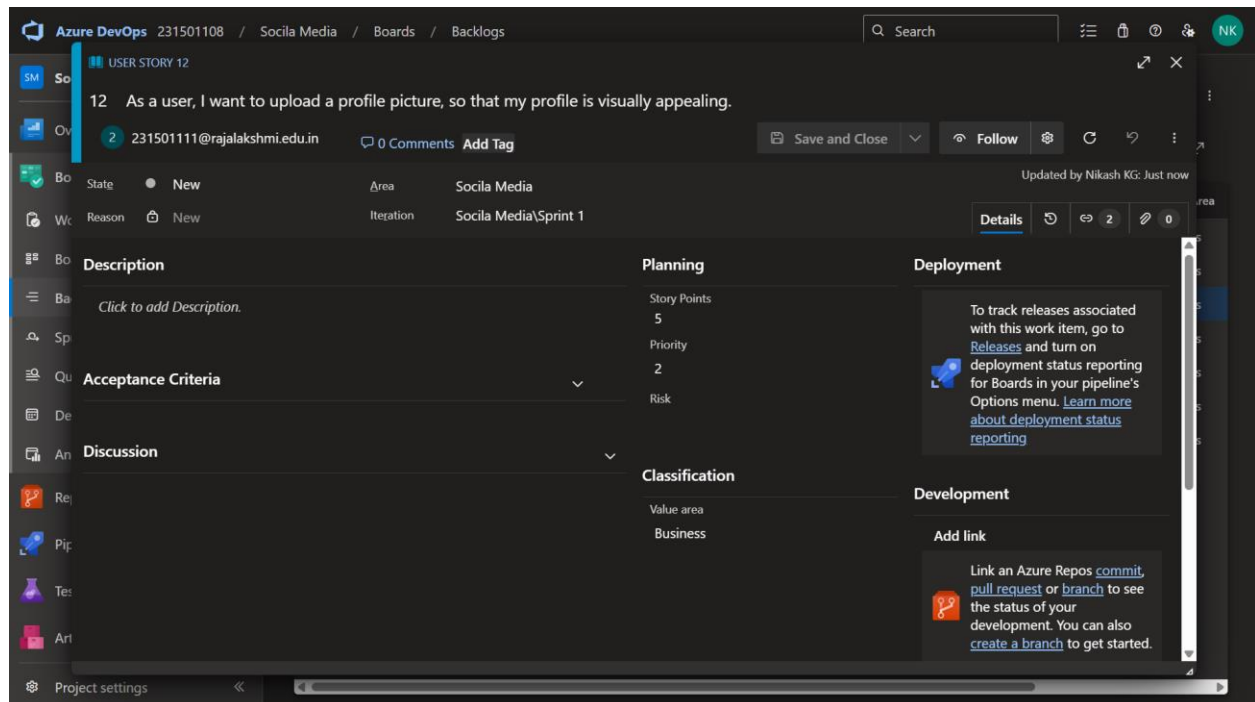
EXP NO: 5

POKER ESTIMATION

Aim:

Create Poker Estimation for the user stories - Music Playlist Batch Creator Project.

Poker Estimation



Result:

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

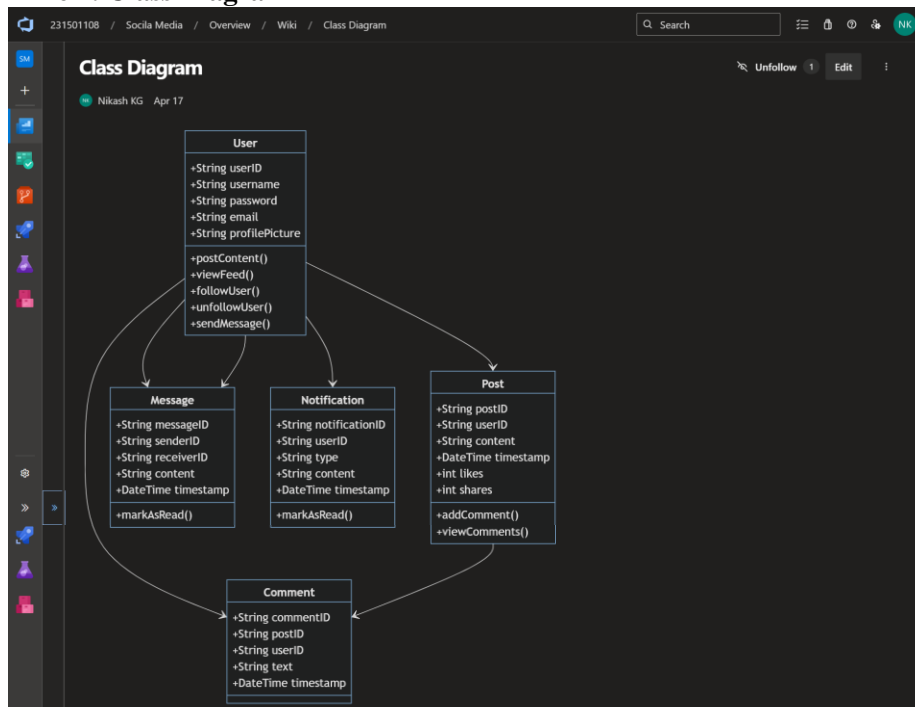
EXP NO: 6

DESIGNING CLASS AND SEQUENCE DIAGRAMS FOR PROJECT ARCHITECTURE

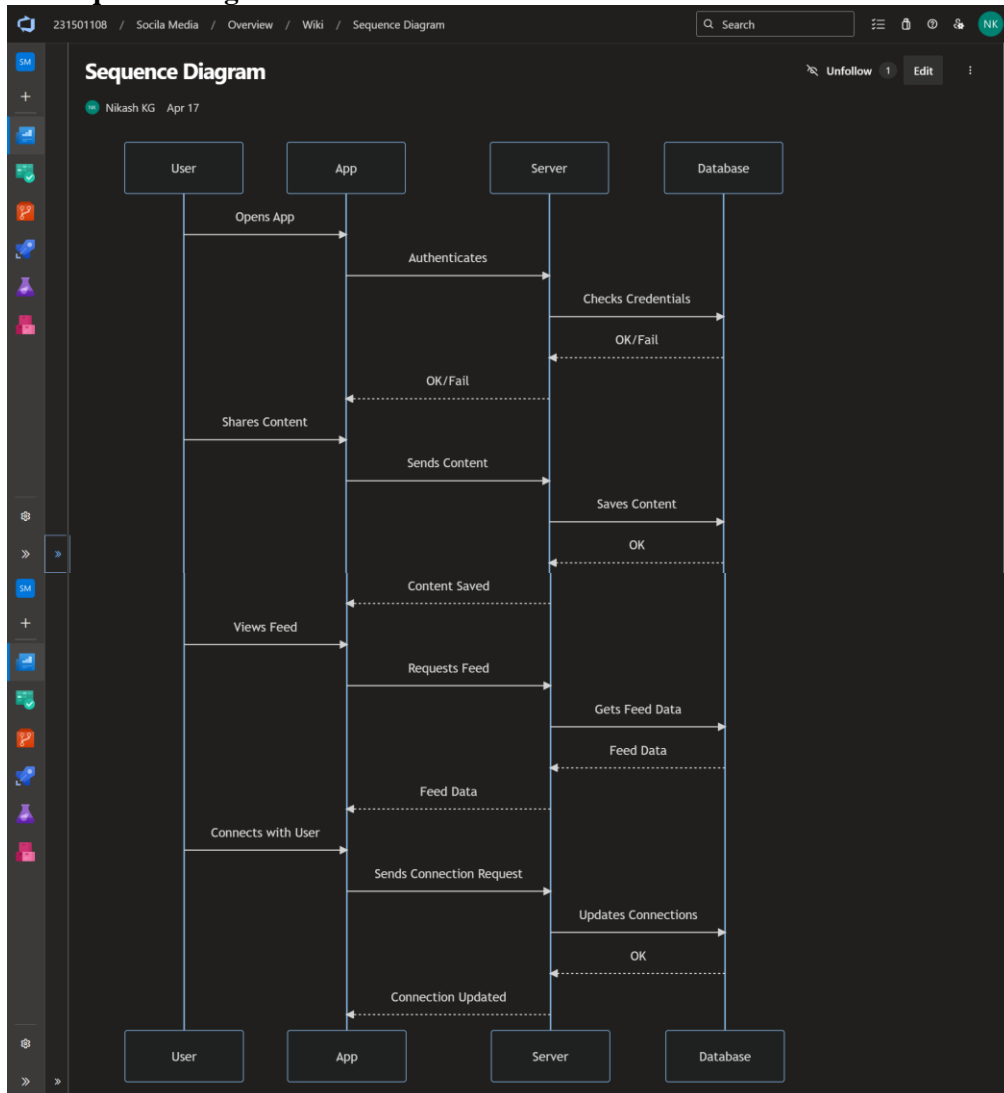
Aim:

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 Music Playlist Batch Creator.

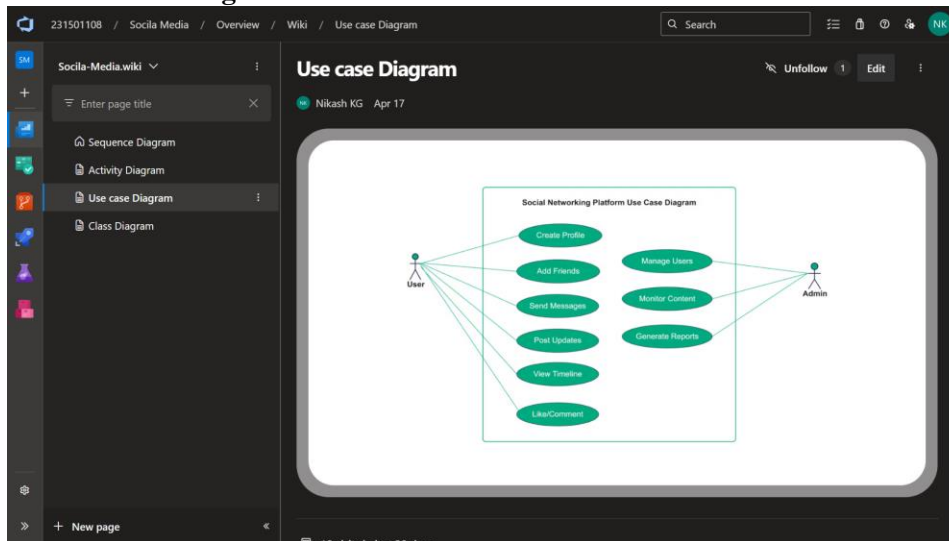
EXP NO: 7

DESIGNING ACTIVITY AND USECASE DIAGRAMS FOR PROJECT ARCHITECTURE

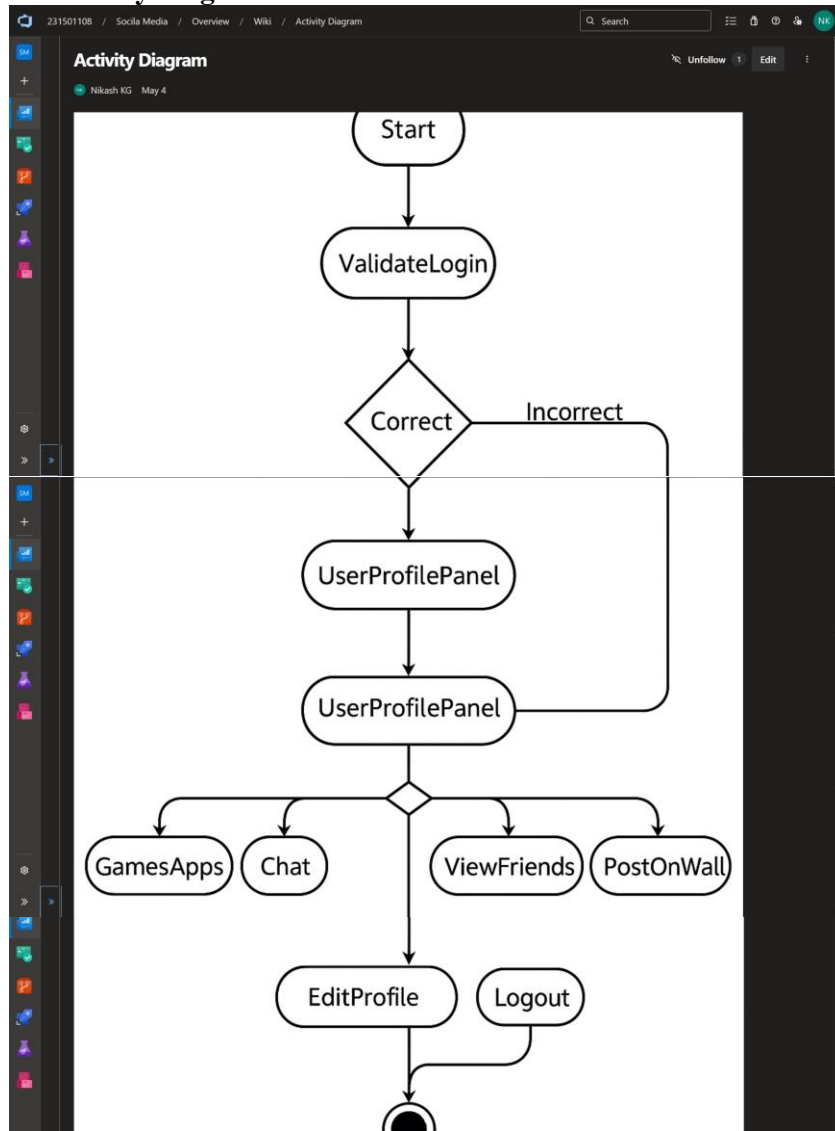
Aim:

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

7A. Use Case Diagram



7B. Activity Diagram



Result:

The Architecture Diagram and ER Diagram is designed Successfully for the Music Playlist Batch Creator

EXP NO: 8

TESTING – TEST PLANS AND TEST CASES

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 Signup & Login
- Viewing and Managing Playlists
- Fetching Real-time Metadata
- Editing playlists (rename, reorder, record)
- Creating smart audio playlists based on categories (mood, genre, artist, etc.)

2. Define User Interactions

- Each test case simulates a real user behaviour (e.g., logging in, renaming a playlist, adding a song).

3. Design Happy Path Test Cases

- Focused on validating that all features function as expected under normal conditions.
- Example: User logs in successfully, adds item to playlist, or creates a category-based playlist.

4. Design Error Path Test Cases

- Simulate negative or unexpected scenarios to test robustness and error handling.
- Example: Login fails with invalid credentials, save fails when offline, no recommendations found.

5. Break Down Steps and Expected Results

- Each test case contains step-by-step actions and a corresponding expected outcome.
- Ensures clarity for both testers and automation scripts.

6. Use Clear Naming and IDs

- Test cases are named clearly (e.g., TC01 – Successful Login, TC10 – Save Playlist Fails).
- Helps in quick identification and linking to user stories or features.

7. Separate Test Suites

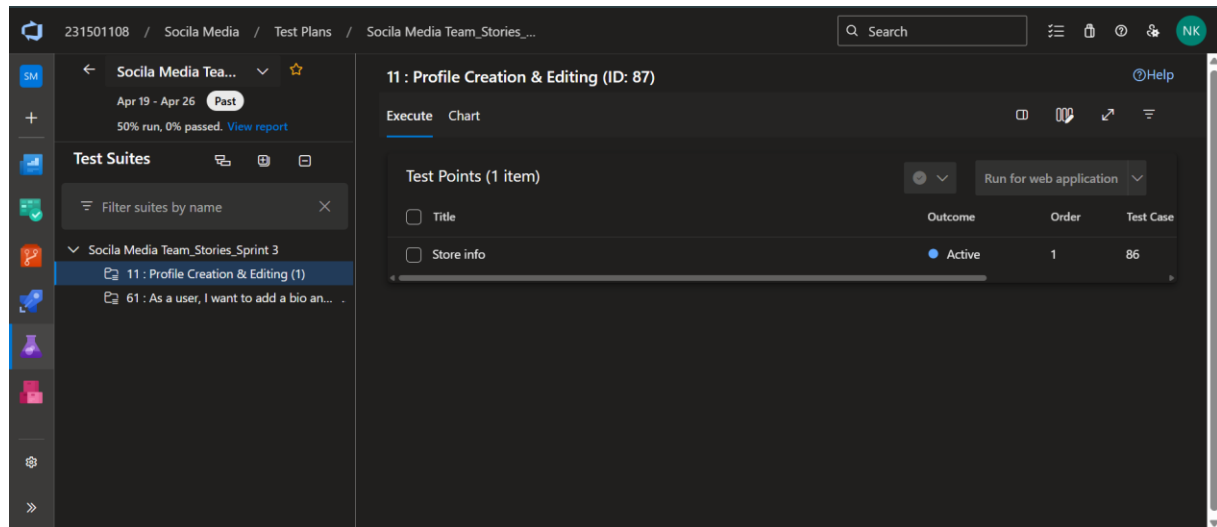
- Grouped test cases based on functionality (e.g., Login, Playlist Editing, Recommendation System).

- Improves organization and test execution flow in Azure DevOps.

8. Prioritize and Review

- Critical user actions are marked high-priority.
- Reviewed for completeness and traceability against feature requirements.

1. Test suite



2. Test case

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

Music Playlist Batch Creator – Test Plans

USER STORIES

- As a user, I want to sign up and log in securely so that I can access my playlists (ID: 79).
- As a user, I need to see my playlist in one place (ID: 76).
- As a user, I should be able to create an audio playlist as needed (ID: 73).
- As a user, I should be able to rename, record, and change the playlist (ID: 68).
- As a user, I need to have real-time metadata (ID: 65).

Test Suites

Test Suit: TS01 - User Login (ID: 86)

1. TC01 – Successful Sign Up

- **Action:**
 - Go to the Sign-Up page.
 - Enter valid name, email, and password.
 - Click "Sign Up".
- **Expected Results:**
 - Sign-Up form is displayed.
 - Fields accept values without error.
 - Account is created, and the user is redirected to the dashboard.
- **Type:** Happy Path

2. TC02 – Secure Login

- **Action:**
 - Go to the Login page.
 - Enter valid email and password.
 - Click on "Login".
- **Expected Results:**
 - Login form is displayed.
 - Fields accept data without error.
 - User is logged in and redirected to the dashboard.
- **Type:** Happy Path

3. TC03 – Sign Up with Existing Email

- **Action:**
 - Go to the Sign-Up page.
 - Enter a name and an already registered email.
 - Click on "Sign Up".
- **Expected Results:**

- Fields accept data.
- Error message "Email already registered" is displayed.
- **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 Suit: TS02 - View Playlists (ID: 87)

1. TC05 – View Playlist Page

- **Action:**
 - Log in successfully.
 - Navigate to "My Playlists" section.
- **Expected Results:**
 - All created playlists are displayed clearly.
- **Type:** Happy Path

2. TC06 – Playlist Loading Failure

- **Action:**
 - Disconnect from the internet.
 - Navigate to "My Playlists".
- **Expected Results:**
 - Network is offline.
 - Error message "Unable to load playlists" is shown.
- **Type:** Error Path

Test Suit: TS03 - Real-Time Metadata (ID: 88)

1. TC07 – Real-Time Metadata Display

- **Action:**
 - Play a song.
 - Observe the metadata panel.
- **Expected Results:**
 - Metadata (title, artist, album, duration) is displayed and updates in real time.
- **Type:** Happy Path

2. TC08 – Metadata Not Updating

- **Action:**

- Play a different song.
 - Observe the metadata panel.
- **Expected Results:**
 - Metadata remains static or shows default/fallback message.
- **Type:** Error Path

Test Suit: TS04 - Playlist Editing (ID: 89)

1. TC09 – Rename Playlist Successfully

- **Action:**
 - Navigate to "My Playlists".
 - Click "Rename" next to a playlist.
 - Enter a new name and click "Save".
- **Expected Results:**
 - Playlist name updates successfully.
- **Type:** Happy Path

2. TC10 – Rename with Blank Name

- **Action:**
 - Click "Rename" on a playlist.
 - Leave the field blank.
 - Click "Save".
- **Expected Results:**
 - Error message "Playlist name cannot be empty" is shown.
- **Type:** Error Path

3. TC11 – Change Playlist Order

- **Action:**
 - Open a playlist.
 - Drag and drop songs to reorder.
 - Click "Save".
- **Expected Results:**
 - Playlist order is updated and saved.
- **Type:** Happy Path

4. TC12 – Change Playlist Order Fails

- **Action:**
 - Login and go to "My Playlists".
 - Select a playlist.
 - Go offline or simulate server error.
 - Reorder songs and click "Save Order".
- **Expected Results:**
 - Error message: "Failed to update order. Please check your connection".
- **Type:** Error Path

Test Suit: TS05 - Smart Playlist Creation (ID: 90)

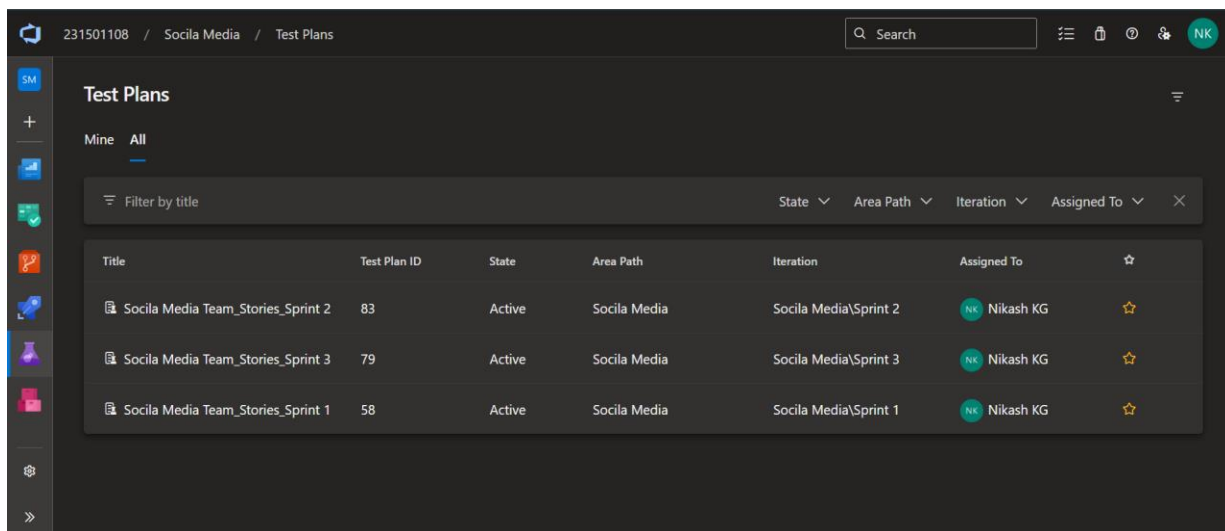
1. TC13 – Generate Playlist Based on Various Categories

- **Action:**
 - Login with valid credentials.
 - Click on "Generate Playlist".
 - Select categories.
 - Click "Generate Playlist".
- **Expected Results:**
 - Playlist is generated based on selected mood and categories.
- **Type:** Happy Path

2. TC14 – Fail to Generate Playlist Due to Missing Category Selection or Invalid Input

- **Action:**
 - Login with valid credentials.
 - Click on "Generate Playlist".
 - Select categories.
 - Click "Generate Playlist".
- **Expected Results:**
 - Error message: "Please select at least one valid category" or "No recommendations found for the selected filters".
- **Type:** Error Path

Test Cases



The screenshot shows a web application interface for 'Test Plans'. The breadcrumb navigation at the top indicates the path: 231501108 / Socila Media / Test Plans. A search bar is located in the top right corner. On the left, there is a sidebar with various icons, including 'SM', a plus sign, and several application icons. The main content area is titled 'Test Plans' and has tabs for 'Mine' and 'All'. Below the tabs, there is a filter bar with 'Filter by title' and dropdown menus for 'State', 'Area Path', 'Iteration', and 'Assigned To'. The table below lists three test plans, all with the state 'Active' and assigned to 'Nikash KG'.

Title	Test Plan ID	State	Area Path	Iteration	Assigned To	
Socila Media Team_Stories_Sprint 2	83	Active	Socila Media	Socila Media\Sprint 2	NK Nikash KG	☆
Socila Media Team_Stories_Sprint 3	79	Active	Socila Media	Socila Media\Sprint 3	NK Nikash KG	☆
Socila Media Team_Stories_Sprint 1	58	Active	Socila Media	Socila Media\Sprint 1	NK Nikash KG	☆

231501108 / Socila Media / Boards / Board

TEST CASE 86

86 Store info

Nikash KG 0 Comments Add Tag

Save and Close Follow

Updated by Nikash KG: May 15

State Design Area Socila Media

Reason New Iteration Socila Media\Sprint 3

Steps Summary Associated Automation

Steps

Steps	Action	Expected result
1.	go to profile	went ot profile page
2.	update information	information updated
3.	save it	saved

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

231501108 / Socila Media / Test Plans / Socila Media Team_Stories_...

11 : Profile Creation & Editing (ID: 87)

Execute Chart

Test Suites

Filter suites by name

Socila Media Team_Stories_Sprint 3

11 : Profile Creation & Editing (2)

61 : As a user, I want to add a bio an...

Test Points (2 items)

Title	Outcome	Order	Test Case
<input checked="" type="checkbox"/> Store info	Active	1	86
<input type="checkbox"/> Create account	Active	2	88

Run for web application

231501108 / Socila Media / Test Plans / Socila Media Team_Stories_...

20 : Post Creation & Multimedia (ID: 90)

Execute Chart

Test Suites

Filter suites by name

Socila Media Team_Stories_Sprint 2

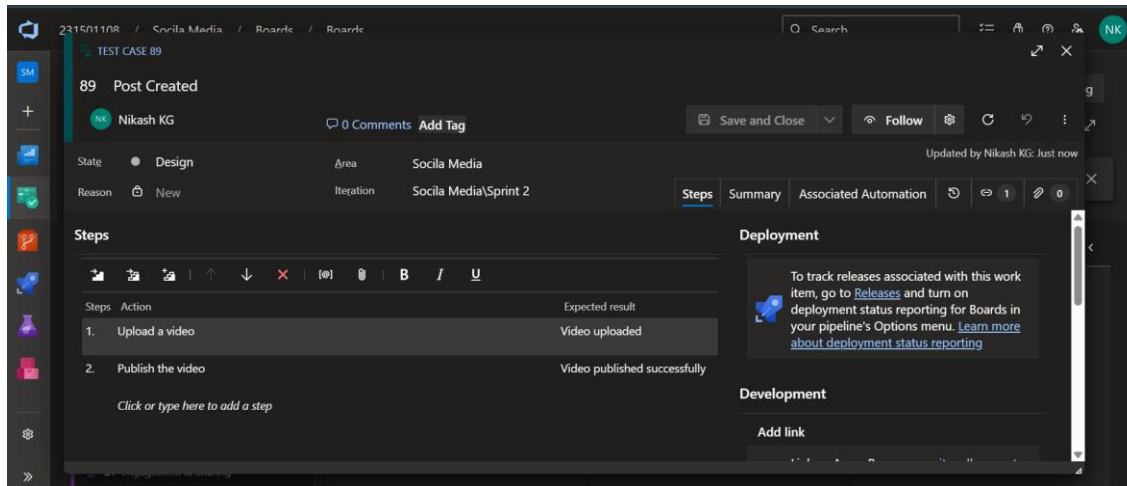
20 : Post Creation & Multimedia (1)

63 : As a user, I want to deactivate m...

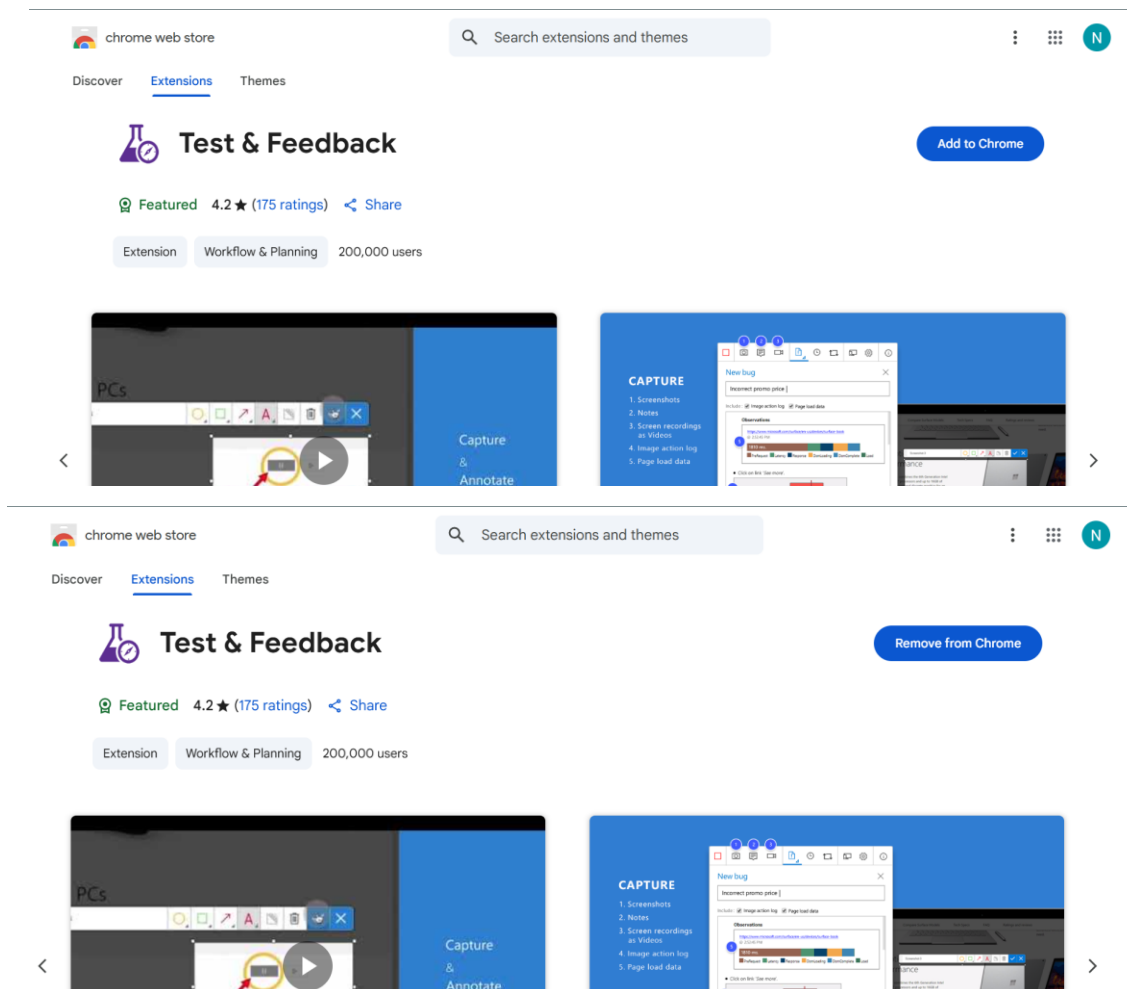
Test Points (1 item)

Title	Outcome	Order	Test Case
<input type="checkbox"/> Post Created	Active	1	89

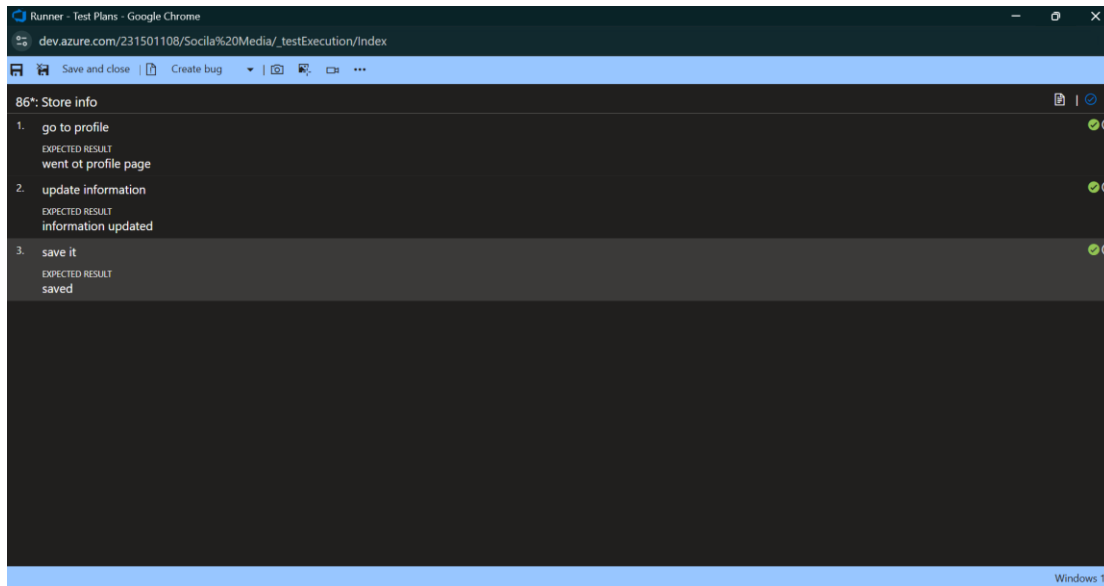
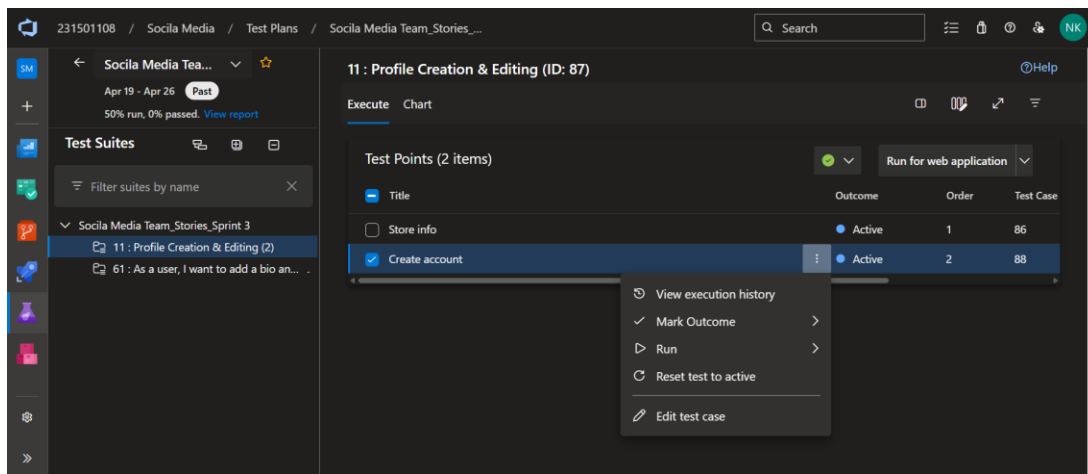
Run for web application



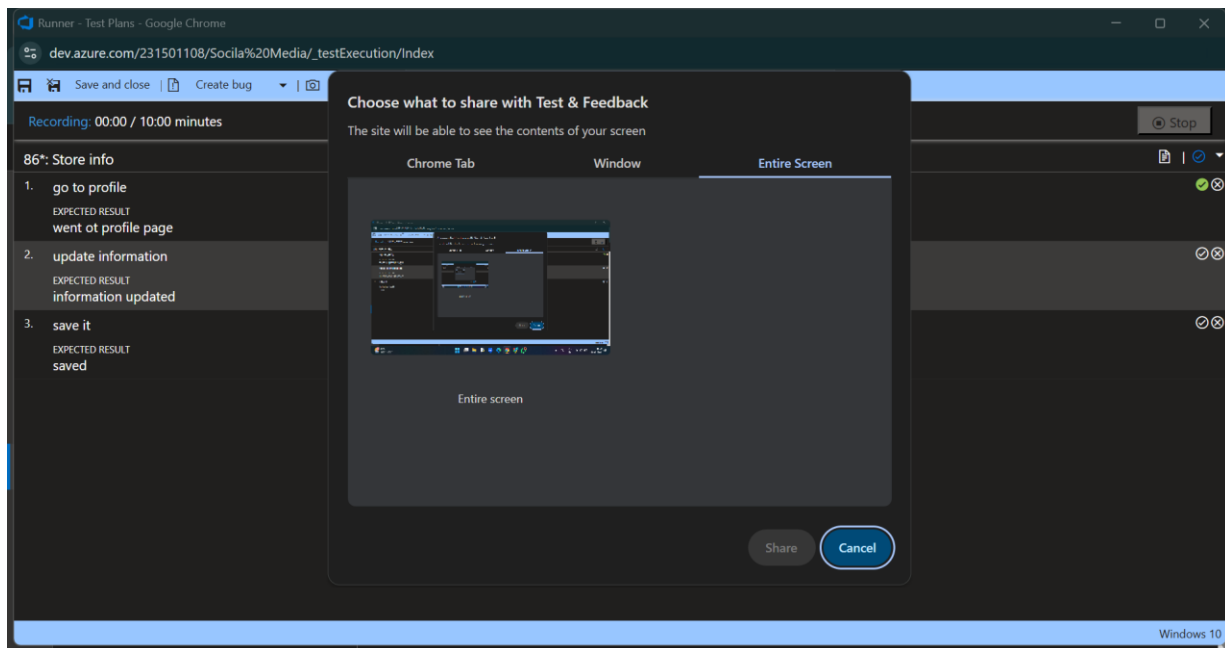
3.Installation of test



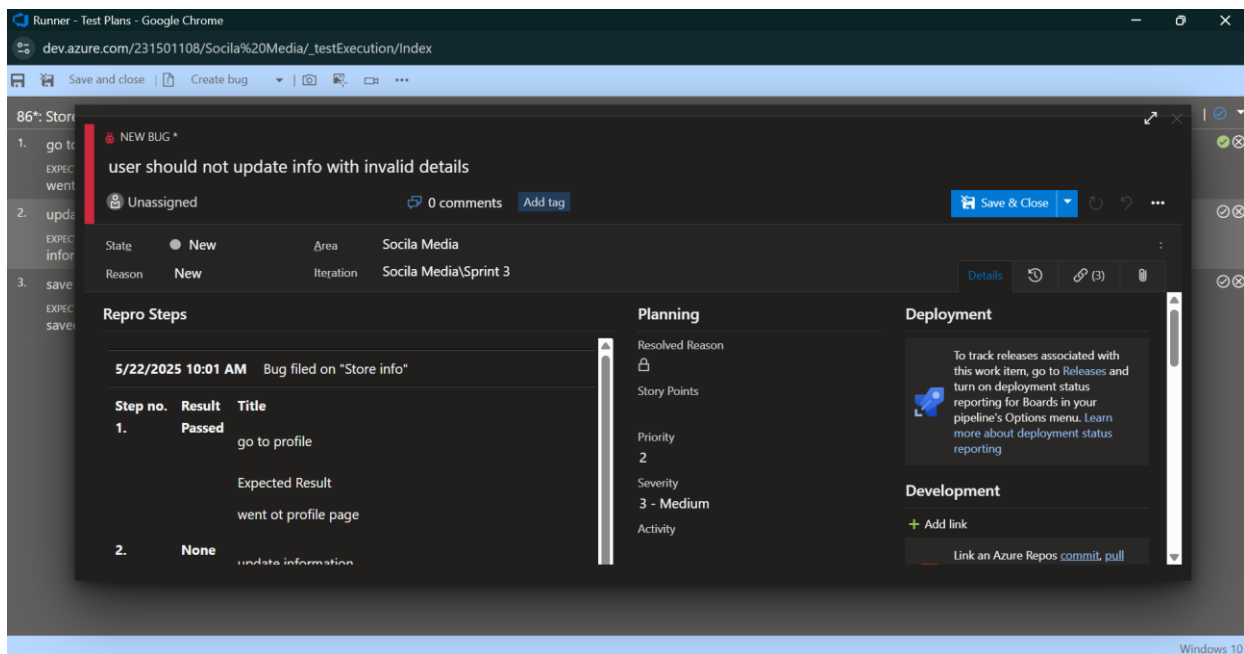
4. Running the test cases

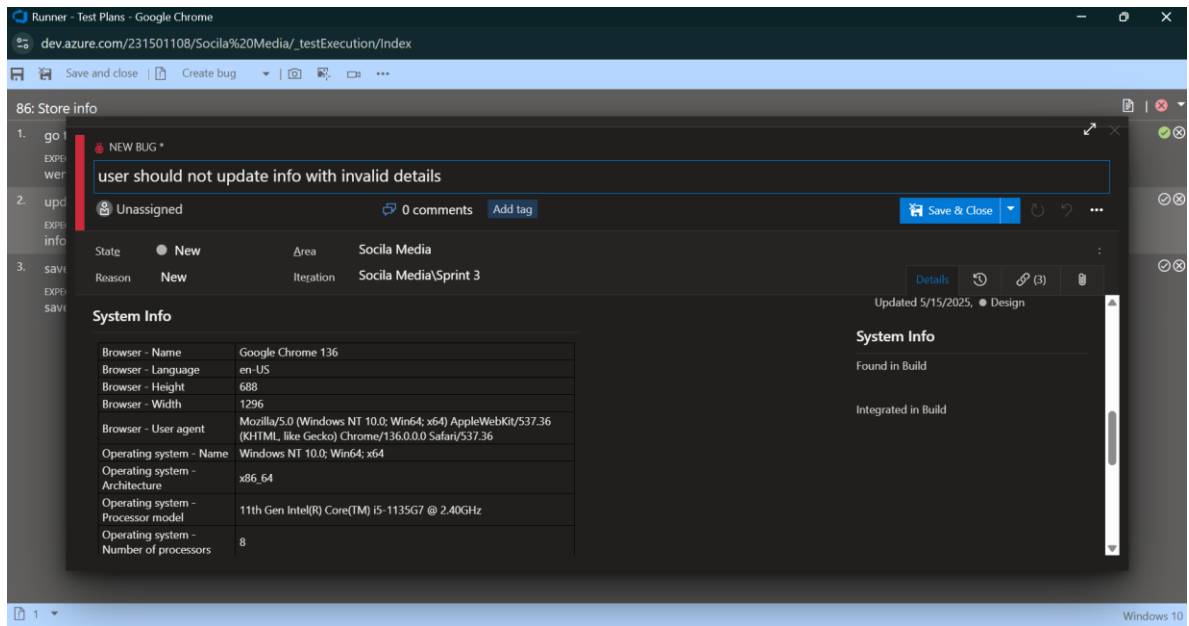


5. Recording the test case



6. Creating the bug





7. Test case results

The screenshot shows the Azure DevOps Test Plans interface. The left sidebar contains navigation options: Overview, Boards, Repos, Pipelines, Test Plans, Progress report, Parameters, Configurations, Runs, and Artifacts. The main area displays 'Music Playlist Batch Creator' with a list of test suites. The 'Test Suites' list includes 'TS01 - User Login (4)', 'TS02 - View Playlists (2)', 'TS03 - Real-Time Met...', 'TS04 - Playlist Editing (4)', and 'TS05 - Smart Playlist ...'. The 'Test Points (2 items)' list shows 'TC05 - View Playlist Page' and 'TC06 - Playlist Loading Failure'. The 'Test Case Results' table for 'TC05 - View Playlist Page' is as follows:

Outcome	TimeStamp	Configuration	Run by	Tester	Test PI
Passed	4m ago	Windows 10	Karthick S	Mallu karthick Balaji ...	Music
Passed	12m ago	Windows 10	Karthick S	Mallu karthick Balaji ...	Music
Not Applicable	12m ago	Windows 10	Karthick S	Mallu karthick Balaji ...	Music
Passed	14m ago	Windows 10	Karthick S	Mallu karthick Balaji ...	Music
Passed	Tuesday	Windows 10	Karthikeyan Senthil	Mallu karthick Balaji ...	Music
Passed	Saturday	Windows 10	Mallu karthick Balaji ...	Mallu karthick Balaji ...	Music
Failed	Saturday	Windows 10	Mallu karthick Balaji ...	Mallu karthick Balaji ...	Music
Passed	Apr 11	Windows 10	Karthick S	Mallu karthick Balaji ...	Music
Passed	Apr 11	Windows 10	Karthick S	Mallu karthick Balaji ...	Music

8. Test report summary

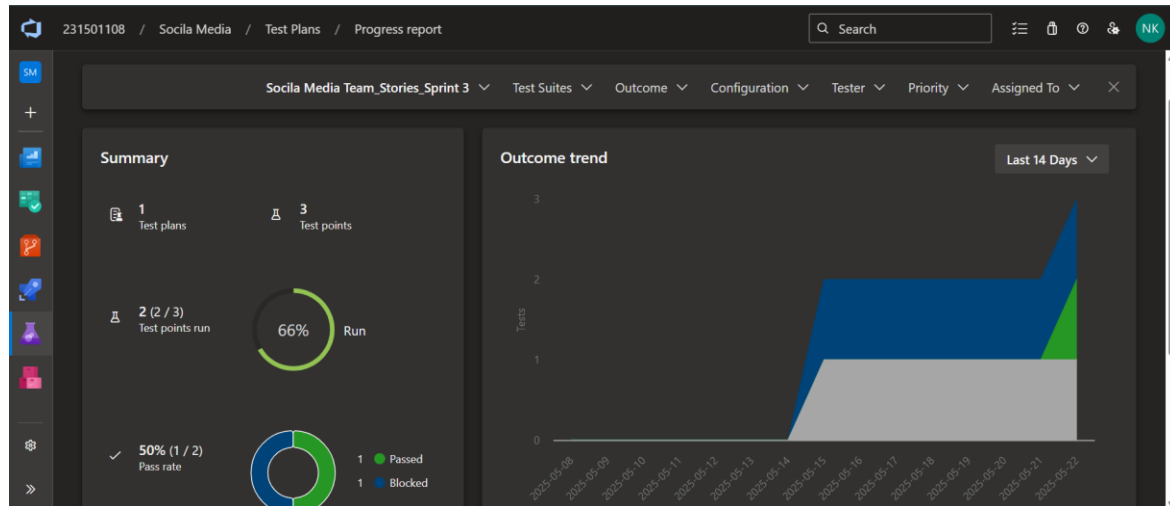
The screenshot shows the Azure DevOps Bug tool interface. The bug report is titled 'user should not update info with invalid details'. The bug is assigned to 'Unassigned' and has a state of 'New'. The bug is located in the 'Socila Media' area, specifically in the 'Socila Media\Sprint 3' iteration. The bug report includes a 'Repro Steps' section with the following steps:

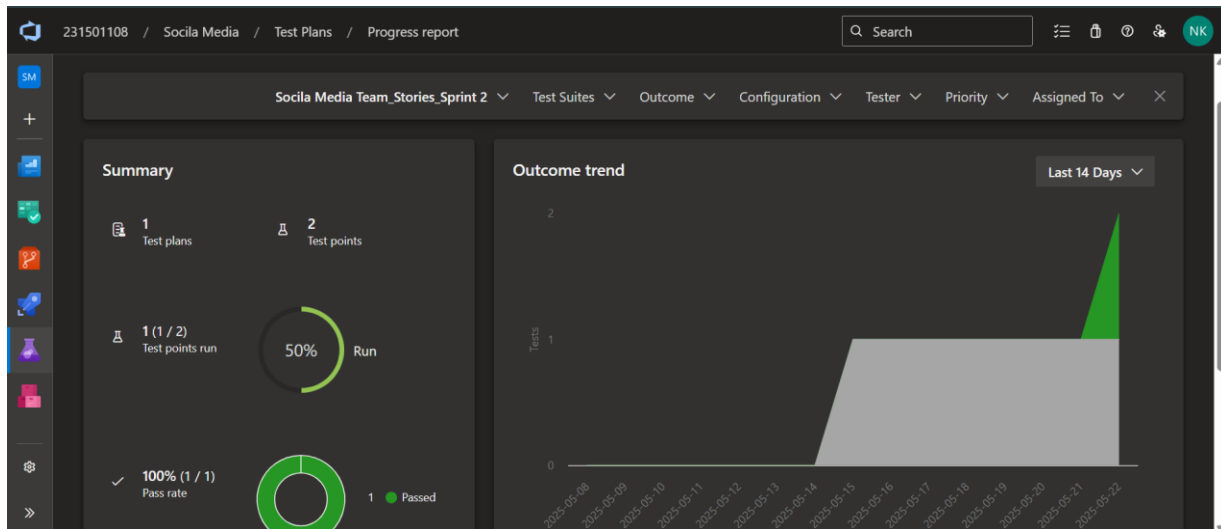
Step no.	Result	Title
1.	Passed	go to profile
		Expected Result
		went ot profile page
2.	None	update information

The bug report also includes a 'Planning' section with fields for 'Resolved Reason', 'Story Points', 'Priority', 'Severity', and 'Activity'. The 'Deployment' section includes a message: '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'. The 'Development' section includes a '+ Add link' button and a 'Link an Azure Repos commit, pull' button.

- Assigning bug to the developer and changing state

9. Progress report





10. Changing the test template

Azure DevOps 231501108 / Settings / Process

Search

Organization Settings 231501108

Search Settings

General

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

Security

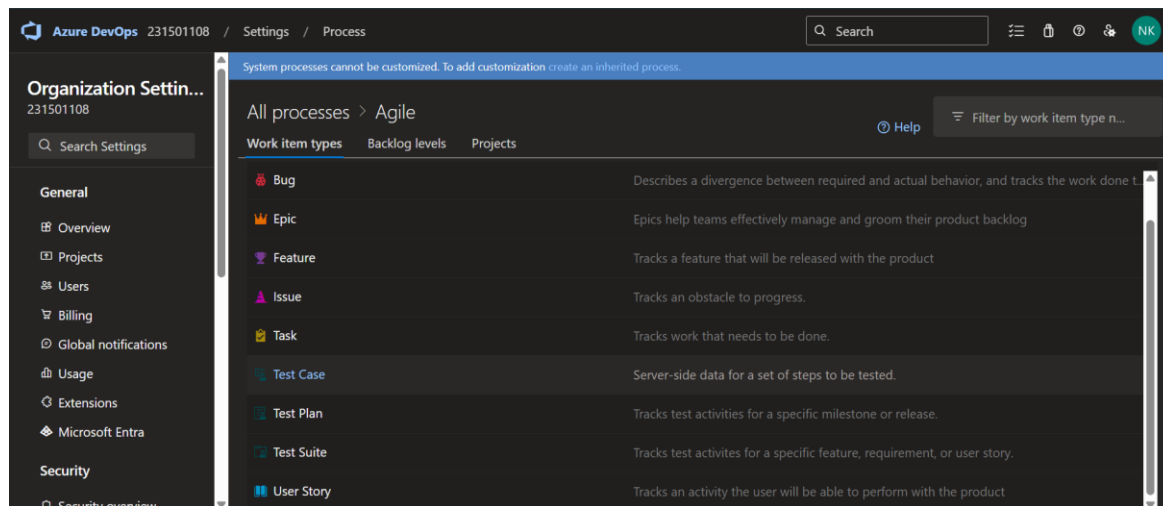
- Security overview

All processes

Processes Fields

Help Filter by process name

Name	Description	Team projects
Basic (default)	This template is flexible for any process and gr...	0
Agile	This template is flexible and will work great for ...	2
Scrum	This template is for teams who follow the Scru...	0
CMMI	This template is for more formal projects requi...	0



Result:

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

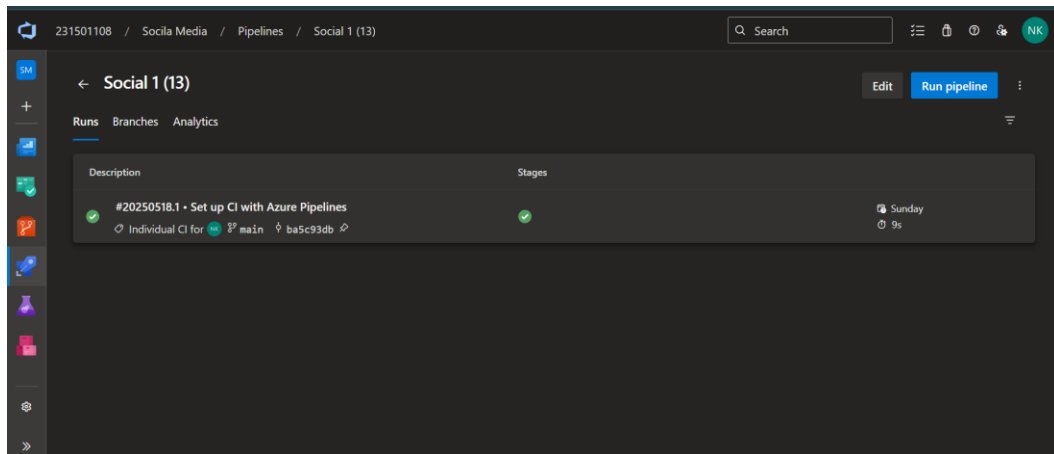
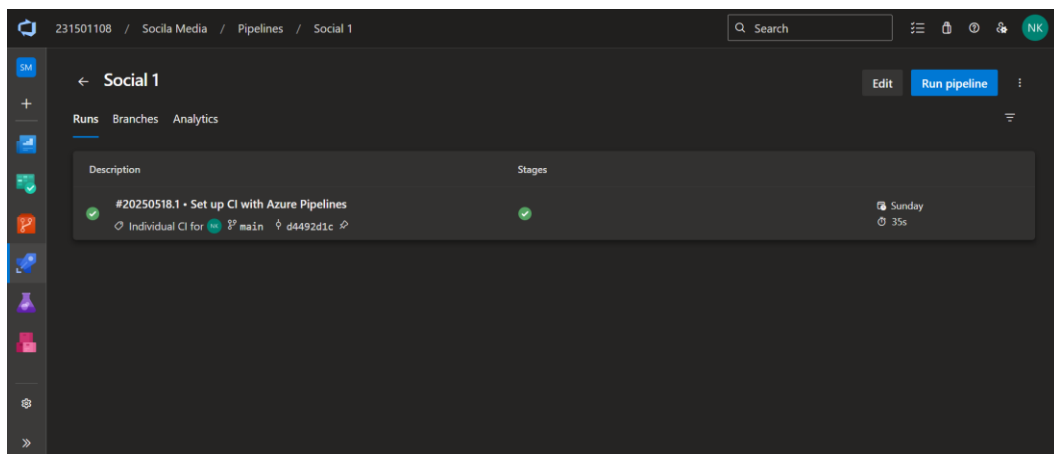
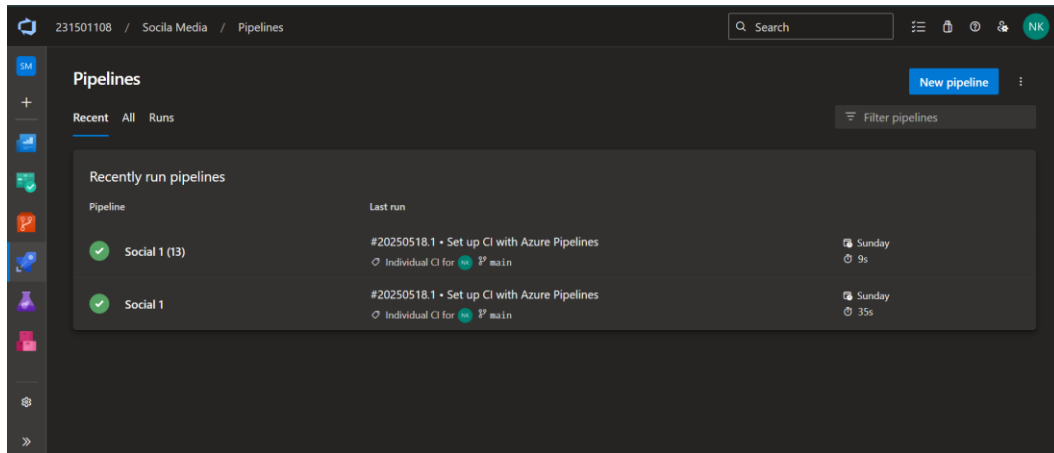
AIM

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.



RESULT

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

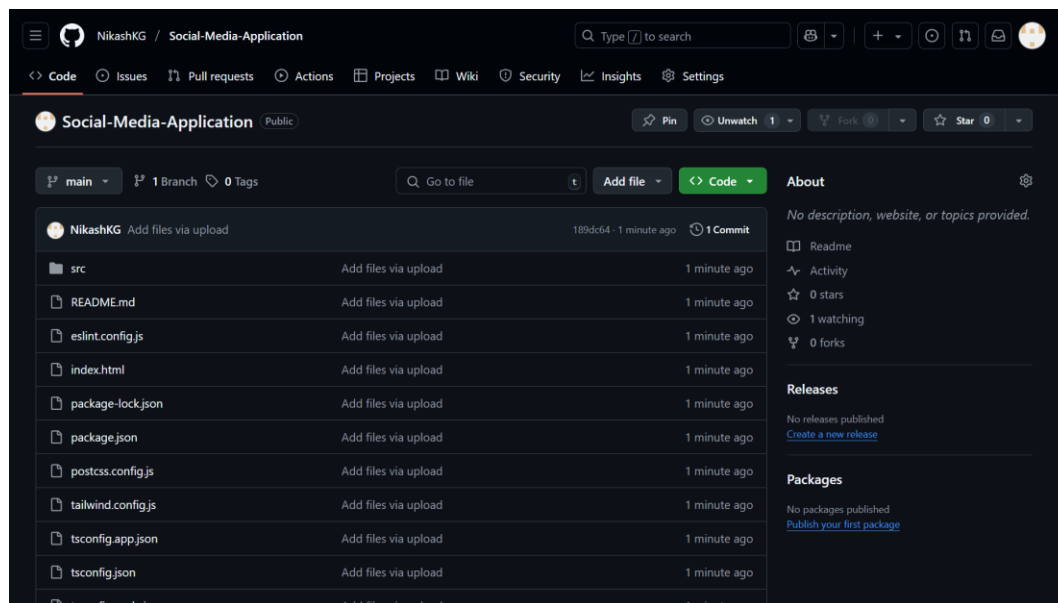
EXP NO: 10

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 Music Playlist Batch Creator project.

GitHub Project Structure



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.