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**EXP NO: 1**  
**DATE:**

## AZURE DEVOPS ENVIRONMENT SETUP

### **AIM:-**

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

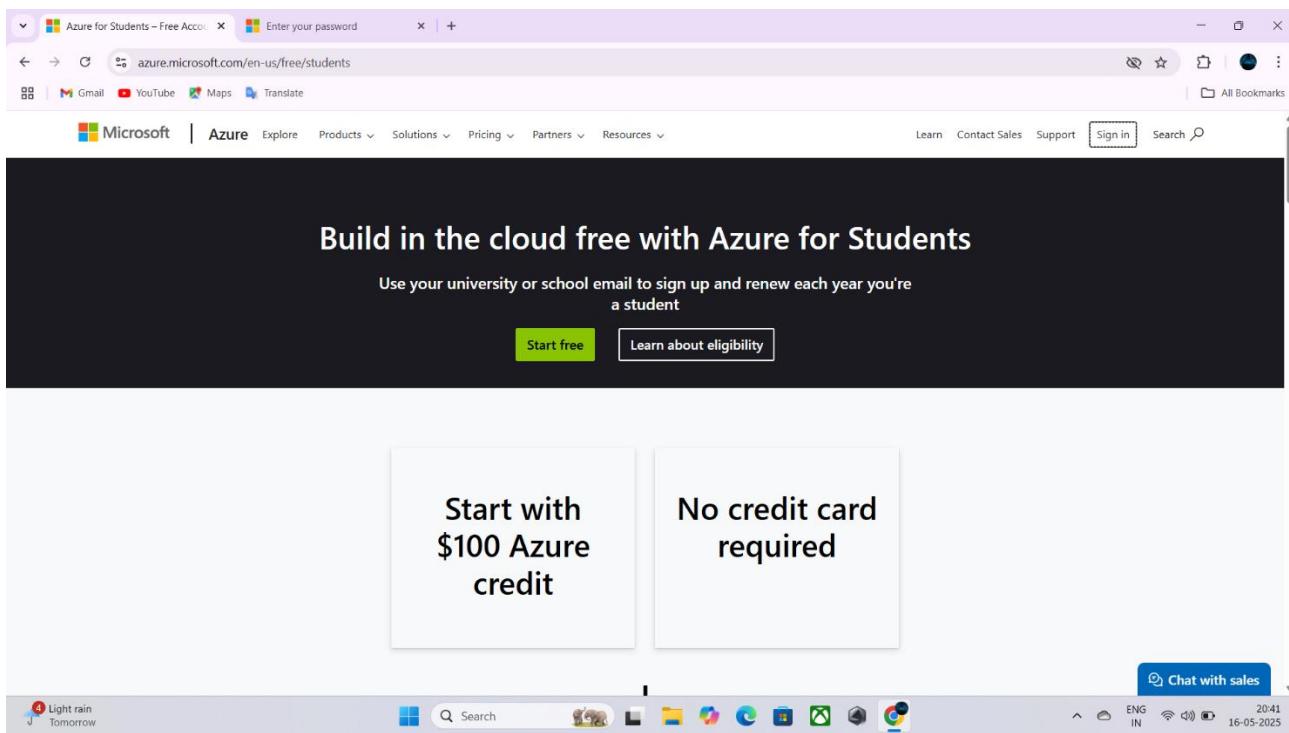
### **INSTALLATION:-**

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>



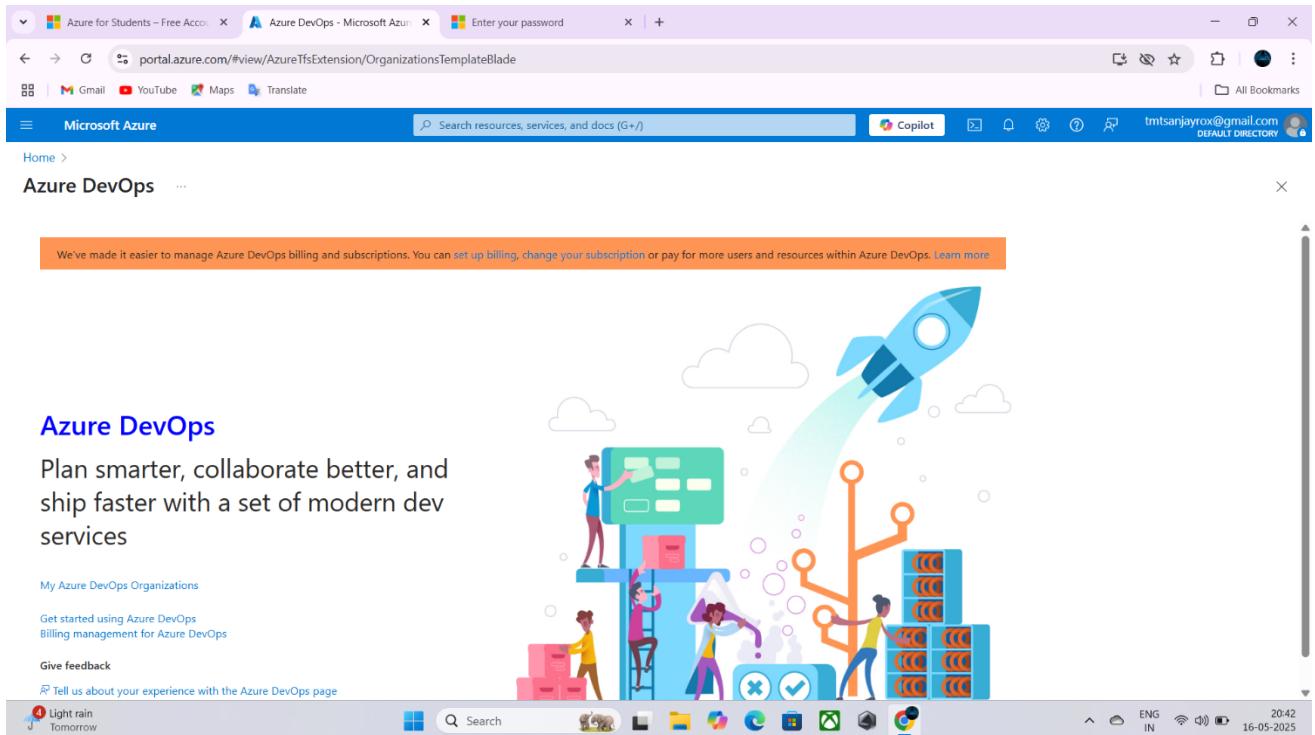
## 2. Azure home page

The screenshot shows the Microsoft Azure home page. At the top, there's a navigation bar with links for 'Azure for Students – Free Account', 'Home - Microsoft Azure', 'Enter your password', and a search bar. Below the navigation bar is a toolbar with icons for Gmail, YouTube, Maps, Translate, and 'All Bookmarks'. The main content area has a blue header 'Microsoft Azure' and a search bar 'Search resources, services, and docs (G+)'. A Copilot button is also present. On the right side of the header, there's an email address 'tmtsanjayrox@gmail.com' and a 'DEFAULT DIRECTORY' button. The page is divided into sections: 'Azure services' (with icons for Create a resource, Azure DevOps organizations, Quickstart Center, Azure AI services, Kubernetes services, Virtual machines, App Services, Storage accounts, and SQL databases), 'Resources' (Recent tab selected, showing a list of resources with columns for Name, Type, and Last Viewed; a message says 'No resources have been viewed recently' with a 'View all resources' button), and 'Navigate' (Subscriptions, Resource groups, All resources, and Dashboard). The taskbar at the bottom shows various pinned apps like File Explorer, Edge, and Mail, along with system status indicators.

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

This screenshot is similar to the previous one but with a search query in the search bar. The search bar now contains the text 'Azure DevOps Organizations'. The rest of the interface, including the Azure services dashboard, recent resources list, and navigation options, remains the same as in 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.



## **RESULT:**

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

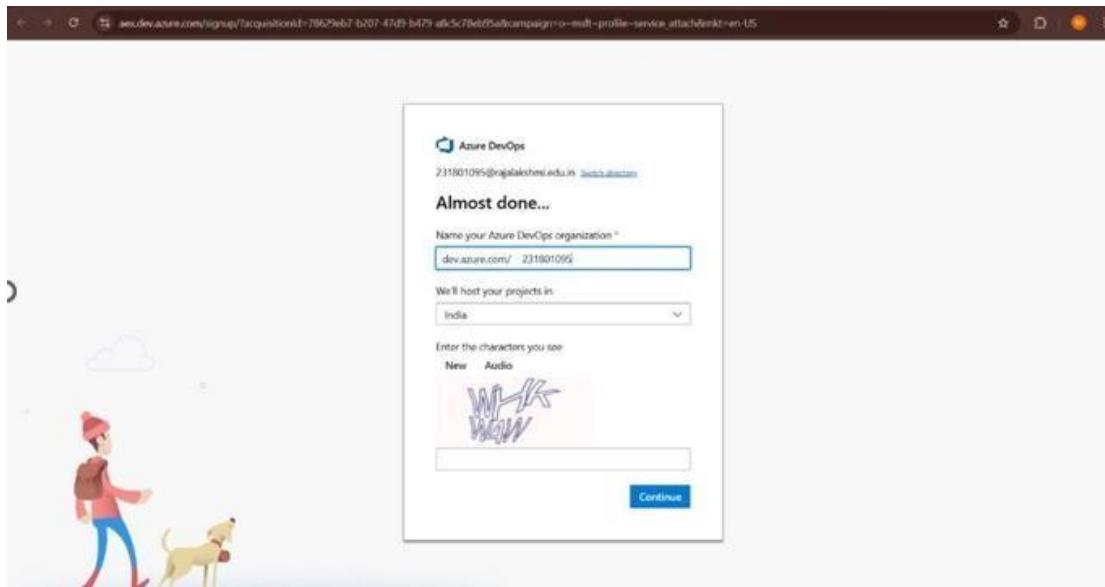
**EXP NO: 2**  
**DATE:**

## 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 \*

Student Management System

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

- 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 a Microsoft Edge browser window with the following details:

- Title Bar:** Azure for Students – Free Acco... | Azure DevOps - Microsoft Azure | My Information
- Address Bar:** aex.dev.azure.com/me?mkt=en-US
- User Information:** Sanjay Rox | Sign out
- Profile Section:** A purple circular profile picture with 'SR' initials, labeled "Sanjay Rox" and "tmtsanjayrox@gmail.com". It includes a dropdown menu for "Microsoft account" and a location entry for "India" with the email "tmtsanjayrox@gmail.com".
- Azure DevOps Organizations:** The main content area displays two organization entries:
  - dev.azure.com/Student-Management-Project (Owner)
  - dev.azure.com/Student-management-SC (Owner)
- Visual Studio Dev Essentials:** A promotional section for Visual Studio Dev Essentials, stating "Get everything you need to build and deploy your app on any platform." with a "Use your benefits" link.
- System Tray:** Shows "Light rain" weather, date "16-05-2025", and time "20:43".

#### 4. Project dashboard

The screenshot shows the Azure DevOps Project Overview page for "student management sc".

**Left Sidebar:** Includes links for Overview, Summary (selected), Dashboards, Wiki, Boards, Repos, Pipelines, Test Plans, and Artifacts, along with a "Project settings" link.

**Project Name:** student management sc

**About this project:** A placeholder for adding a project description, with a "Add Project Description" button.

**Help others to get on board!**: A section for describing the project.

**Project stats (Last 7 days):**

- Boards:** 14 Work items created, 0 Work items completed.
- Repos:** 0 Pull requests opened, 13 Commits by 2 authors.
- Pipelines:** 31% Builds succeeded.

**Members:** 5 members listed.

**System Tray:** Shows "Finance headline India Trade Defic..." and date "16-05-2025".

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 interface for the 'student management sc' team. The left sidebar has 'Backlogs' selected. The main area displays a backlog of 12 User Stories, each with a title, state (e.g., New, Resolved), and value area (Business). A 'Planning' sidebar on the right shows a backlog for 'student management sc Team backlog' with a sprint for 'sprint\_3' (5/16/2025 - 5/23/2025) containing 4 items, and iterations 1, 2, and 3 listed below.

Order	Work Item Type	Title	State	Story...	Value Area
1	User Story	As a student, I want to register using my email and contact ...	New		Business
2	User Story	As a student, I want to edit and update my profile informati...	Resolved		Business
3	User Story	As an admin, I want to assign roles to users (student, teache...	New		Business
4	User Story	As a teacher, I want to access only the students assigned to ...	New		Business
5	User Story	As a teacher, I want to create and publish courses so that st...	New		Business
6	User Story	As a student, I want to browse and enroll in available course...	New		Business
7	User Story	As a teacher, I want to create assignments with deadlines so...	New		Business
8	User Story	As a student, I want to submit assignments online so that m...	New		Business
9	User Story	As a teacher, I want student submissions to be automatically...	New		Business
10	User Story	As a student, I want to view my scores instantly after compl...	New		Business
11	User Story	As an admin, I want to generate reports on student perform...	New		Business
12	User Story	As a student, I want to download my performance report so...	New		Business

The screenshot shows the Azure DevOps interface for the 'student management sc Team'. The left sidebar is open, showing options like Overview, Boards, Work items, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Project settings. The 'Backlogs' option is selected. The main area displays a table titled 'Backlog' with 12 User Story items listed. The columns include Order, Work Item Type, Title, State, Story..., and Value Area. The first item is 'User Story' with title 'As a student, I want to register using my email and contact ...' and state 'Resolved'. The last item is also 'User Story' with title 'As a student, I want to download my performance report so...' and state 'New'. To the right of the backlog, there's a sidebar for 'Sanjay Rox' showing a profile picture, email (tmtsanjayrox@gmail.com), Microsoft account link, and a sign-in button. Below the profile, there are sections for 'Iteration 1', 'Iteration 2', and 'Iteration 3', each showing 'No work scheduled yet'. At the bottom of the screen, there's a system tray with icons for weather (Rain coming), search, file explorer, and other system functions.

Order	Work Item Type	Title	State	Story...	Value Area
1	User Story	As a student, I want to register using my email and contact ...	New		Business
2	User Story	As a student, I want to edit and update my profile informati...	Resolved		Business
3	User Story	As an admin, I want to assign roles to users (student, teache...	New		Business
4	User Story	As a teacher, I want to access only the students assigned to ...	New		Business
5	User Story	As a teacher, I want to create and publish courses so that st...	New		Business
6	User Story	As a student, I want to browse and enroll in available course...	New		Business
7	User Story	As a teacher, I want to create assignments with deadlines so...	New		Business
8	User Story	As a student, I want to submit assignments online so that m...	New		Business
9	User Story	As a teacher, I want student submissions to be automaticall...	New		Business
10	User Story	As a student, I want to view my scores instantly after compl...	New		Business
11	User Story	As an admin, I want to generate reports on student perform...	New		Business
12	User Story	As a student, I want to download my performance report so...	New		Business

## Result

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

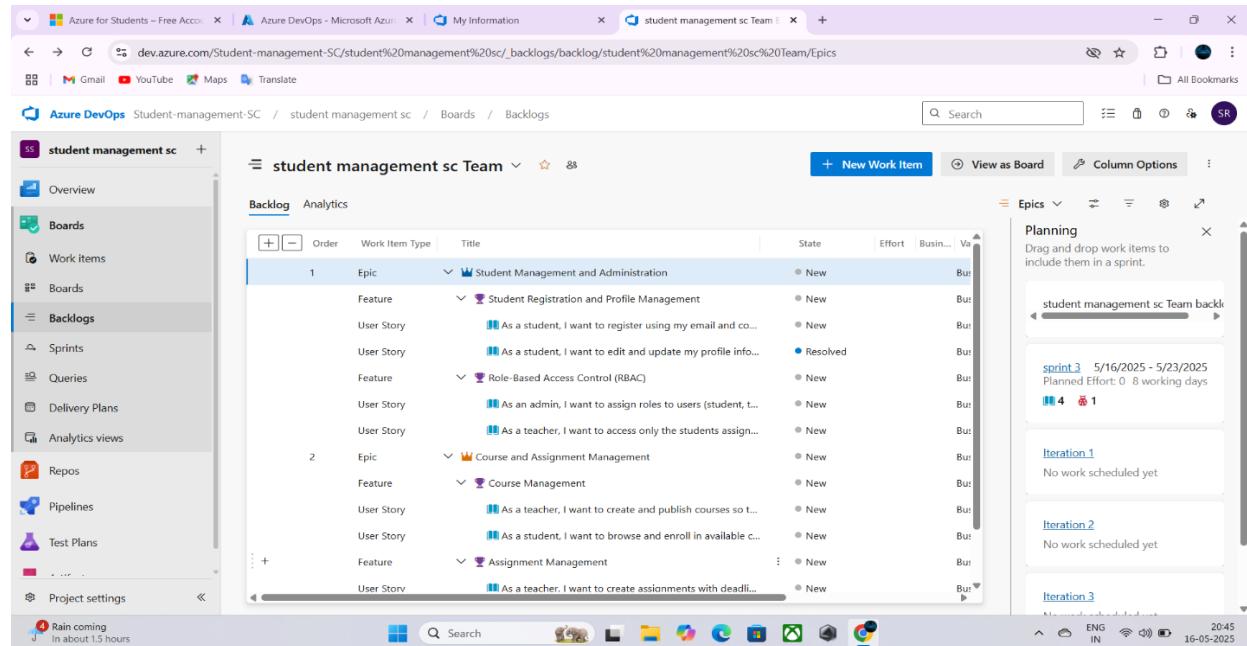
**EXP NO: 3**  
**DATE:**

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

### AIM:-

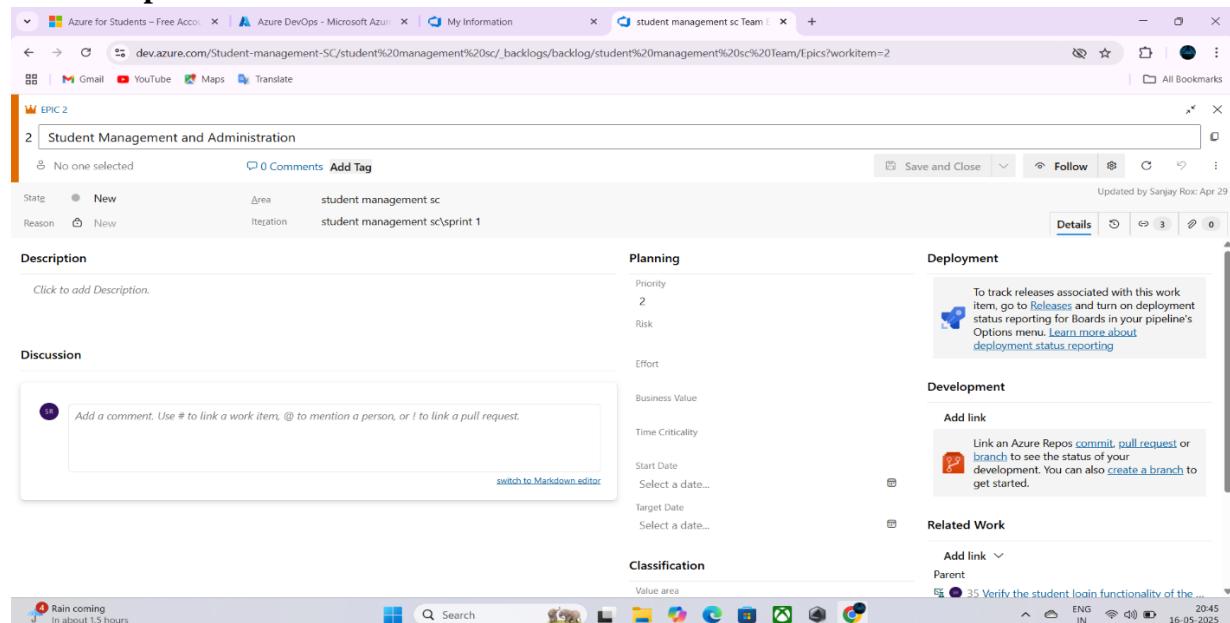
To learn about how to create epics, user story, features, backlogs for your assigned project.

### Create Epic, Features, User Stories, Task



The screenshot shows the Azure DevOps Boards backlog view for the 'student management sc' team. The left sidebar includes 'Overview', 'Boards', 'Work items', 'Backlogs' (selected), 'Sprints', 'Queries', 'Delivery Plans', and 'Analytics views'. The main area displays a backlog table with columns: Order, Work Item Type, Title, State, Effort, Business Value, and Va. The backlog contains two epics: '1 Epic' and '2 Epic'. Under Epic 1, there are three user stories: 'Student Registration and Profile Management', 'As a student, I want to register using my email and co...', and 'As a student, I want to edit and update my profile info...'. Under Epic 2, there are four user stories: 'Role-Based Access Control (RBAC)', 'As an admin, I want to assign roles to users (student, t...', 'As a teacher, I want to access only the students assign...', and 'Assignment Management'. To the right of the backlog, a 'Planning' section shows a sprint backlog for 'sprint\_3' (5/16/2025 - 5/23/2025) with 4 tasks and 1 bug. Below the planning section are 'Iteration 1', 'Iteration 2', and 'Iteration 3' sections.

### 1. Fill in Epics



The screenshot shows the 'EPIC 2' creation page for the 'Student Management and Administration' epic. The top navigation bar includes 'Azure for Students - Free Acco', 'Azure DevOps - Microsoft Azure', 'My Information', 'student management sc Team', and a search bar. The main form has fields for 'Title' (set to 'Student Management and Administration'), 'State' (radio button selected), 'Reason' (radio button selected), 'Area' (set to 'student management sc'), and 'Iteration' (set to 'student management sc\sprint 1'). Below the form are sections for 'Description' (with a placeholder 'Click to add Description.'), 'Planning' (Priority set to '2', Risk set to 'Low', Business Value set to 'Medium', Time Criticality set to 'Medium'), 'Deployment' (with a note about tracking releases), 'Development' (with a note about linking to Azure Repos), and 'Related Work' (with a note about adding links). At the bottom, there are buttons for 'Save and Close', 'Follow', and a 'Details' tab.

## 2. Fill in Features

The screenshot shows a 'NEW FEATURE' card in the Azure DevOps interface. The card has the following details:

- Role based access control** (Title)
- State:** New
- Reason:** New
- Area:** student management sc
- Iteration:** student management sc\sprint 1
- Description:** Click to add Description.
- Planning:** Priority: 2, Risk: 1
- 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.
- Discussion:** Add a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request. (with a 'switch to Markdown editor' button)
- 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:** (button to collapse the section)

## 3. Fill in User Story Details

The screenshot shows a 'NEW USER STORY' card in the Azure DevOps interface. The card has the following details:

- As an admin, I want to assign roles to users (student, teacher, admin) so that they have appropriate permissions** (Title)
- State:** New
- Reason:** New
- Area:** student management sc
- Iteration:** student management sc\Iteration 1
- Description:** Click to add Description.
- Planning:** Story Points: 1, Priority: 2, Risk: 1
- 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.
- Acceptance Criteria:** Click to add Acceptance Criteria.
- Classification:** Value area: Business
- 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.)
- Discussion:** Add a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request.
- Related Work:** (button to collapse the section)

**RESULT:-**

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

**EXP NO: 4**  
**DATE:**

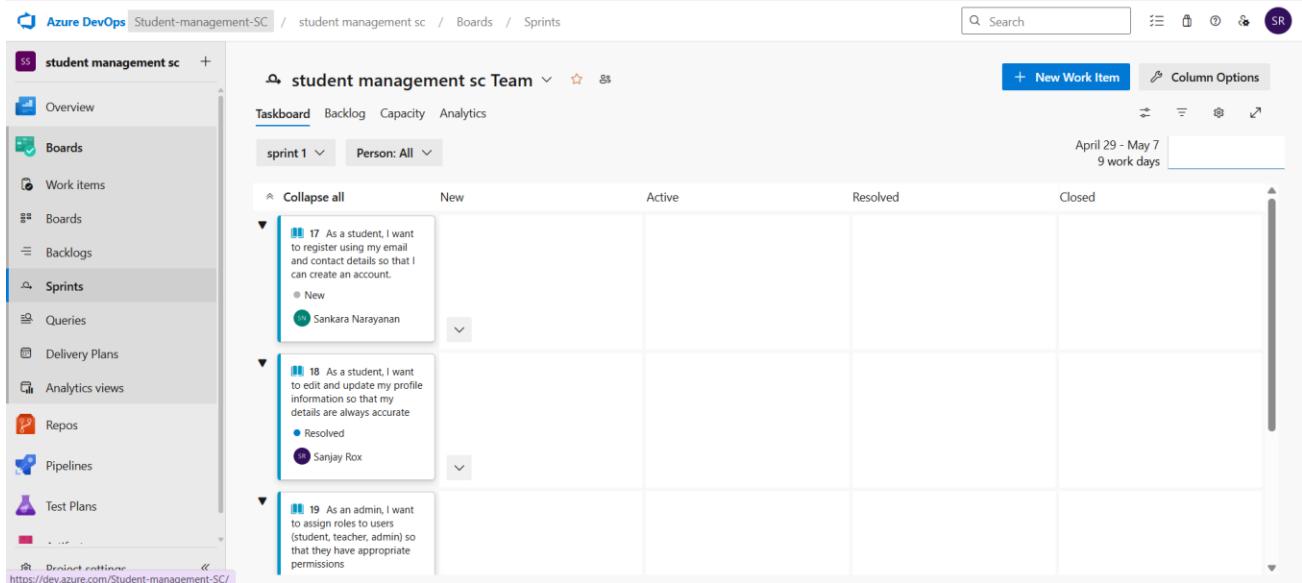
## SPRINT PLANNING

### AIM:-

To assign user story to specific sprint for the Student Management System Project.

### Sprint Planning:-

#### Sprint 1

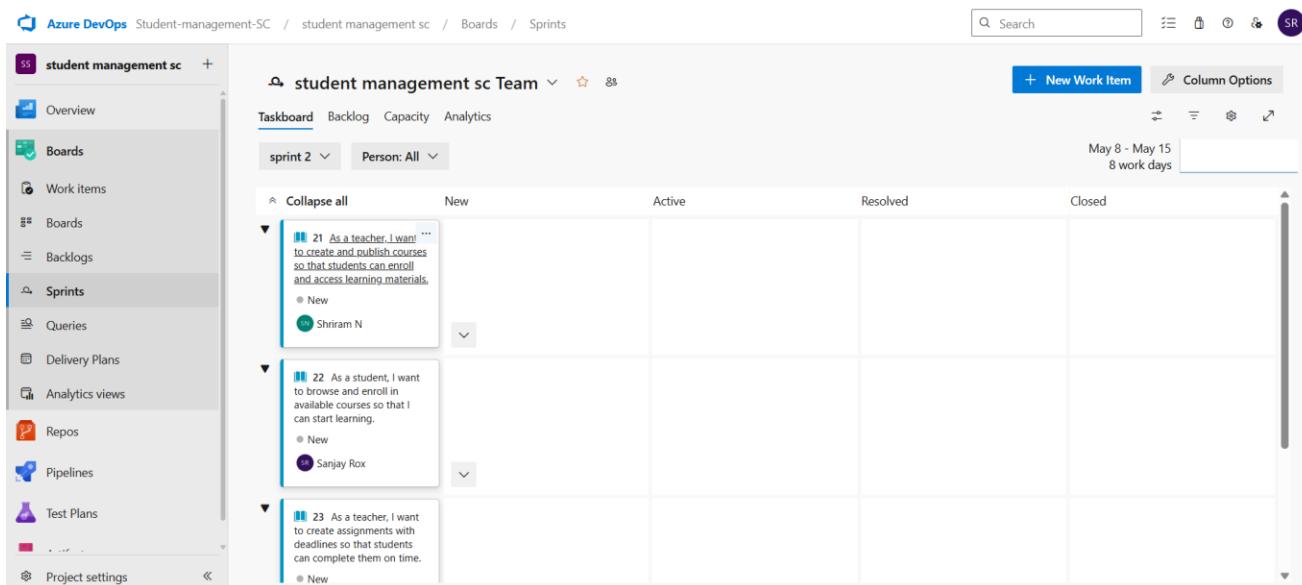


The screenshot shows the Azure DevOps Boards interface for the 'student management sc' project. The left sidebar is open, showing options like Overview, Boards, Work items, Sprints, and Analytics views. The 'Sprints' option is selected. The main area displays the 'student management sc Team' board for 'sprint 1'. The backlog is visible with three user stories listed under the 'New' column:

- User Story 17: As a student, I want to register using my email and contact details so that I can create an account. Status: New, Assigned to: Sankara Narayanan.
- User Story 18: As a student, I want to edit and update my profile information so that my details are always accurate. Status: Resolved, Assigned to: Sanjay Rox.
- User Story 19: As an admin, I want to assign roles to users (student, teacher, admin) so that they have appropriate permissions. Status: New.

The top right corner shows the sprint duration: April 29 - May 7, 9 work days.

#### Sprint 2



The screenshot shows the Azure DevOps Boards interface for the 'student management sc' project. The left sidebar is open, showing options like Overview, Boards, Work items, Sprints, and Analytics views. The 'Sprints' option is selected. The main area displays the 'student management sc Team' board for 'sprint 2'. The backlog is visible with three user stories listed under the 'New' column:

- User Story 21: As a teacher, I want to create and publish courses so that students can enroll and access learning materials. Status: New, Assigned to: Shriram N.
- User Story 22: As a student, I want to browse and enroll in available courses so that I can start learning. Status: New, Assigned to: Sanjay Rox.
- User Story 23: As a teacher, I want to create assignments with deadlines so that students can complete them on time. Status: New.

The top right corner shows the sprint duration: May 8 - May 15, 8 work days.

## Sprint 3

The screenshot shows the Azure DevOps Taskboard for the 'student management sc Team' under 'sprint 3'. The backlog is organized into columns: New, Active, Resolved, and Closed. The 'New' column contains three items:

- Unparented**: A task with ID 49, titled "If admin can't delete, print user not exists". It is marked as 'New' and assigned to Sanjay Rox.
- 25**: A task with ID 25, titled "As a teacher, I want student submissions to be automatically graded so that I save time on manual evaluation". It is marked as 'New' and assigned to Shiram N.
- 26**: A task with ID 26, titled "As a student, I want to view my scores instantly after completing an assignment".

The 'Taskboard' tab is selected, and the 'Backlog' tab is visible. The sidebar on the left includes links for Overview, Boards, Work items, Backlogs, Sprints (selected), Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Project settings.

## RESULT:-

The Sprints are created for the Student Management System.

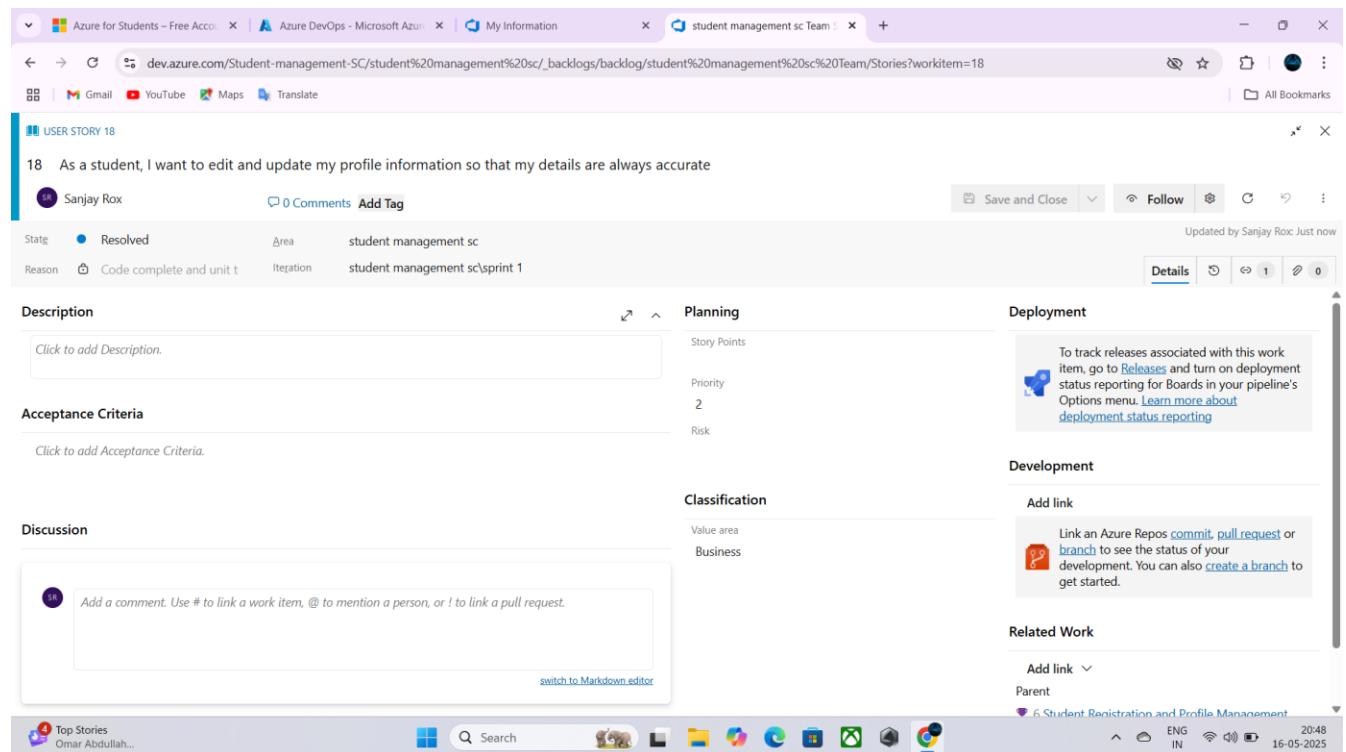
**EXP NO: 5**  
**DATE:**

## **POKER ESTIMATION**

### **AIM:-**

Create Poker Estimation for the user stories -Student management System.

### **Poker Estimation:-**



USER STORY 18

18 As a student, I want to edit and update my profile information so that my details are always accurate

Sanjay Rox 0 Comments Add Tag

State: Resolved Area: student management sc Reason: Code complete and unit t Iteration: student management sc\sprint 1

Updated by Sanjay Rox: Just now

Description: Click to add Description.

Planning: Story Points: 2, Priority: 2, Risk: 0

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](#)

Acceptance Criteria: Click to add Acceptance Criteria.

Classification: Value area: Business

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: Parent: [6. Student Registration and Profile Management](#)

### **RESULT:-**

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

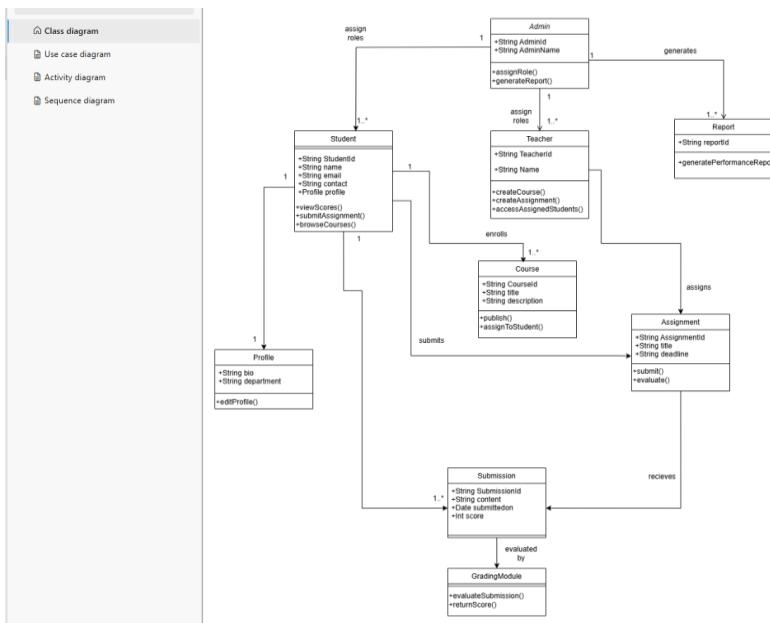
**EXP NO: 6**  
**DATE:**

## **DESIGNING CLASS AND SEQUENCE DIAGRAMS FOR PROJECT ARCHITECTURE**

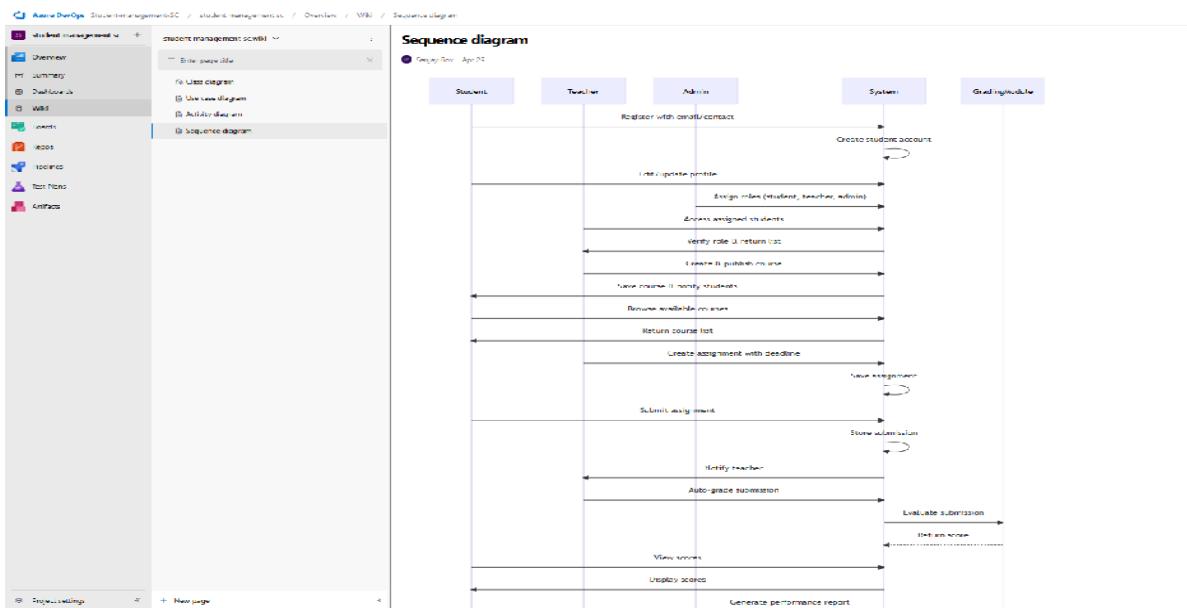
### **AIM:-**

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 given project.

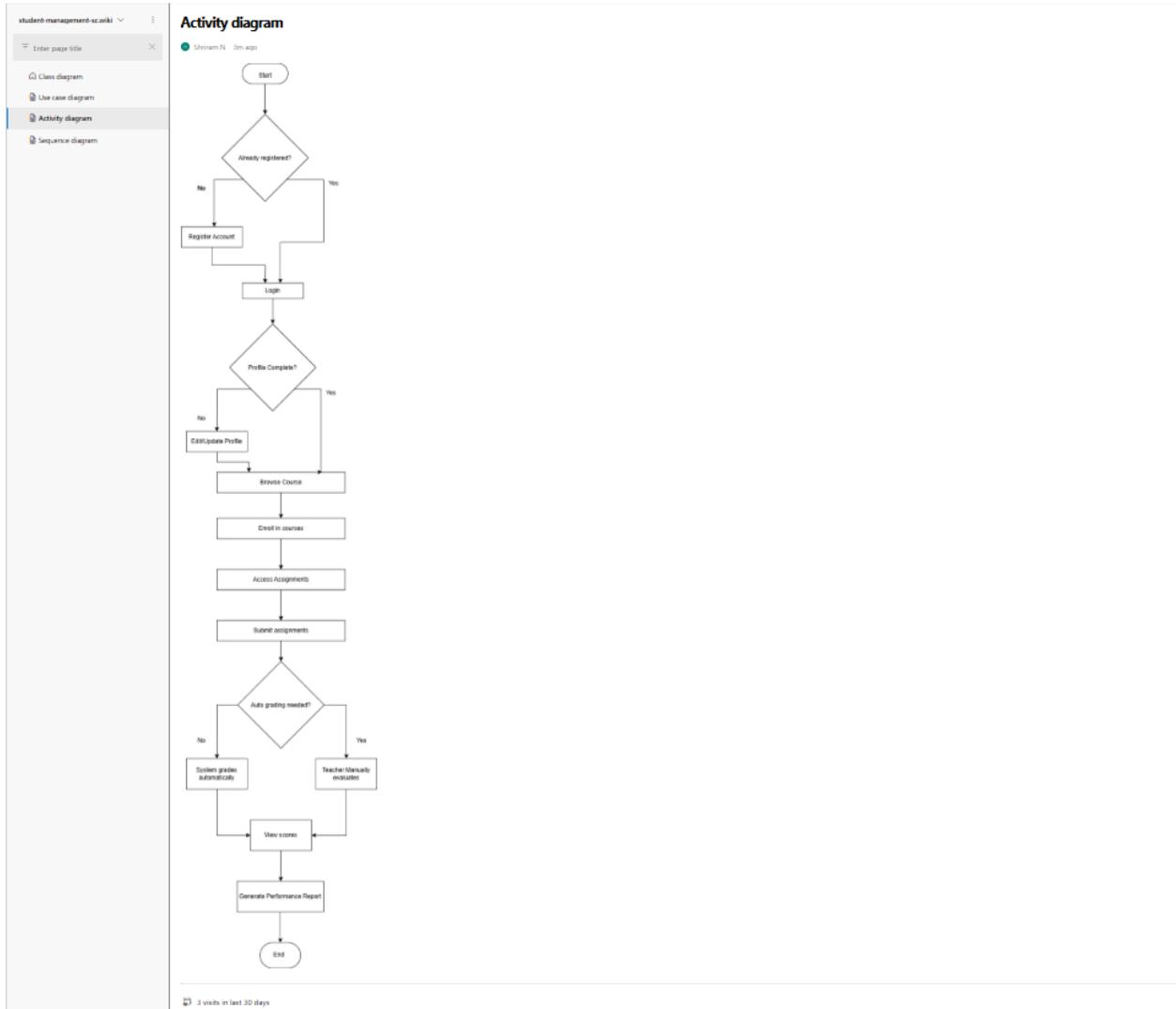
**EXP NO: 7**  
**DATE:**

## **DESIGNING USE CASE DIAGRAMS AND ACTIVITY DIAGRAM FOR PROJECT ARCHITECTURE**

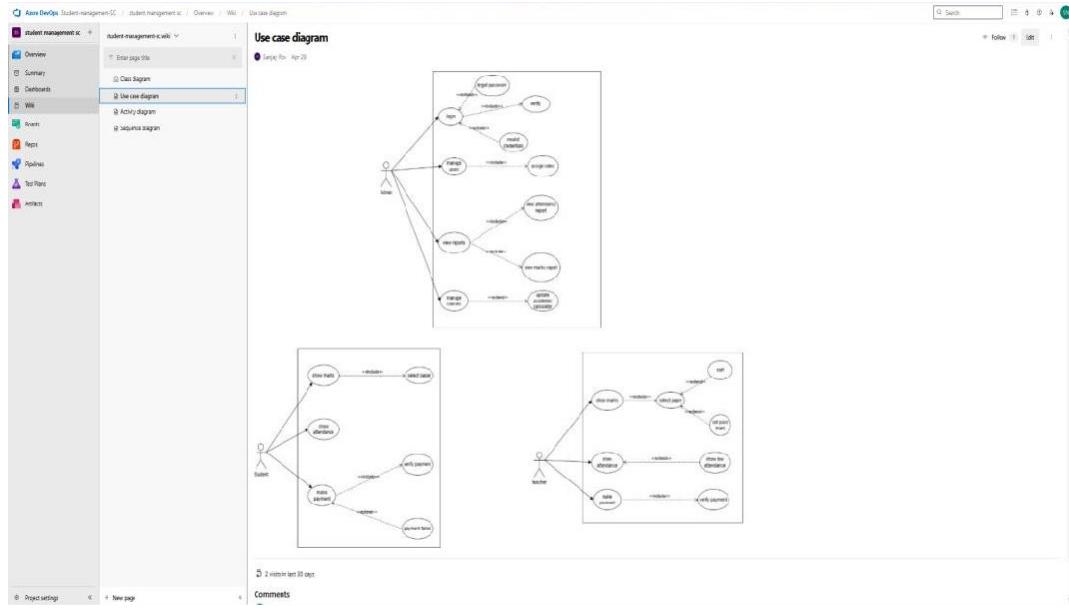
### **AIM:-**

To Design an activity Diagram and use case Diagram for the given Project.

### **7A. Activity Diagram:-**



## 7B. USE CASE DIAGRAM:-



**RESULT:-**

Thus activity and use case diagram has been designed successfully for Student Management System

**EXP NO: 8**  
**DATE:**

## **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
- Student Enrollment in Courses
- Assignment Submission & Evaluation
- Viewing Grades and Attendance
- Admin Role Management and Report Generation

##### **2. Define User Interactions**

- Each test case simulates a real user behavior (e.g., logging in, submitting an assignment, viewing results).

##### **3. Design Happy Path Test Cases**

- Focused on validating that all core functionalities work correctly under normal conditions.
- **Example:** Student registers and logs in, enrolls in a course, submits assignment, and views grades.

##### **4. Design Error Path Test Cases**

- Simulate invalid inputs, system issues, or failed actions to ensure proper error handling.
- **Example:** Login with wrong credentials, submission without attachment, 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 identified (e.g., TC01 – Student Login Success, TC12 – Invalid Assignment Submission).
- Facilitates easy mapping to features and tracking in Azure DevOps.

##### **7. Separate Test Suites**

- Grouped by functionality such as:
  - Login and Registration
  - Course Enrollment

- Assignment Submission
- Report Generation
- Admin Functions
- Improves organization and enables focused execution in Azure DevOps.

## 8. Prioritize and Review

- High-priority assigned to critical workflows like login, course access, and grading.
- Reviewed for completeness, accuracy, and alignment with user stories and feature definitions.

## 1. New test plan

Azure DevOps Student-management-SC / student management sc / Test Plans

New Test Plan

Name \*

Area Path \*

Iteration \*  5/16/2025 - 5/23/2025

Create Cancel

## 2. Test suite

Azure DevOps Student-management-SC / student management sc / Test Plans / Checking the admin functio...

Checking the admin functions (ID: 43)

May 16 - Current  
May 23  
100% run, 100% passed. [View report](#)

Test Suites

Checking the admin functions (2)

Test Cases (2 items)

Title	Order	Test Case Id	Assigned To	Status
Verify whether you can add new users to the application.	1	44	Sanjay Rox	Defect
Verify whether the admin can delete the existing user details	2	45	Sanjay Rox	Defect

[https://dev.azure.com/Student-management-SC/student management sc/\\_testPlans/define?planId=42&suiteId=43](https://dev.azure.com/Student-management-SC/student management sc/_testPlans/define?planId=42&suiteId=43)

### **3. Test case**

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

Student Management System– Test Plans

#### **USER STORIES:-**

- As a student, I want to sign up and log in securely so I can access academic services. (*ID: 101*)
- As a student, I need to enroll in courses to participate in classes. (*ID: 102*)
- As a student, I should be able to submit assignments online for evaluation. (*ID: 103*)
- As a student, I want to view grades and attendance in one place. (*ID: 104*)
- As an admin, I want to manage users and generate performance reports. (*ID: 105*)

#### **Test Suites:-**

**Test suit : TS01 – User Login & Registration (*ID: 201*)**

##### **1. TC01 – Successful Student Sign-Up**

- **Action:**
  - Go to the Sign-Up page
  - Enter valid name, email, and password
  - Click "Sign Up"
- **Expected Result:**
  - Student account is created and redirected to dashboard
- **Type:** Happy Path

##### **2. TC02 – Login with Valid Credentials**

- **Action:**
  - Go to Login page
  - Enter valid student email & password
  - Click "Login"
- **Expected Result:**
  - Logged in and taken to student dashboard
- **Type:** Happy Path

##### **3. TC03 – Sign-Up with Existing Email**

- **Action:**
  - Go to Sign-Up
  - Enter already registered email
  - Click "Sign Up"
- **Expected Result:**
  - Error message: "Email already registered"
- **Type:** Error Path

**4. TC04 – Login with Incorrect Password**

- **Action:**
  - Enter wrong password
  - Click "Login"
- **Expected Result:**
  - Error: "Invalid username or password"
- **Type:** Error Path

**Test Suite: TS02 – Course Enrollment (ID: 202)**

**1. TC05 – Enroll in Available Course**

- **Action:**
  - Login → Navigate to Course List
  - Select a course → Click "Enroll"
- **Expected Result:**
  - Enrollment confirmation shown
- **Type:** Happy Path

**2. TC06 – Try Enrolling in a Full Course**

- **Action:**
  - Select a course with no seats available
  - Click "Enroll"
- **Expected Result:**
  - Error: "Enrollment failed – course full"
- **Type:** Error Path

**Test Suite: TS03 – Assignment Submission (ID: 203)**

**1. TC07 – Submit Assignment Successfully**

- **Action:**
  - Login → Go to Assignments
  - Upload file and click "Submit"
- **Expected Result:**
  - Submission confirmation message shown
- **Type:** Happy Path

**2. TC08 – Submit Without Uploading File**

- **Action:**
  - Open assignment submission
  - Click "Submit" without file
- **Expected Result:**
  - Error: "Please upload a file before submitting"
- **Type:** Error Path

## **Test Suite: TS04 – View Grades & Attendance (ID: 204)**

1. **TC09 – View Grades Dashboard**
  - **Action:**
    - Login → Go to "My Grades"
  - **Expected Result:**
    - All grades are displayed by subject
  - **Type:** Happy Path
2. **TC10 – Fail to Fetch Grades (Offline Scenario)**
  - **Action:**
    - Disconnect network → Go to "My Grades"
  - **Expected Result:**
    - Error: "Unable to fetch data – check connection"
  - **Type:** Error Path

## **Test Suite: TS05 – Admin Management (ID: 205)**

1. **TC11 – Assign Role to New User**
  - **Action:**
    - Login as Admin → Navigate to User Management
    - Select user and assign role
  - **Expected Result:**
    - Confirmation: "Role assigned successfully"
  - **Type:** Happy Path
2. **TC12 – Generate Report with No Data**
  - **Action:**
    - Navigate to Reports → Choose empty semester
    - Click "Generate"
  - **Expected Result:**
    - Message: "No data available to generate report"
  - **Type:** Error Path

### 3. Test Cases

**Azure DevOps Student-management-SC / student management sc / Test Plans**

**Test Plans**

Mine All

Filter by title State Area Path Iteration Assigned To

Title	Test Plan ID	State	Area Path	Iteration	Assigned To
Checking the admin functions	42	Active	student management sc	student management sc\sprint	Sanjay Rox
Logout verification	39	Active	student management sc	student management sc\sprint	Sanjay Rox
Login Verification	33	Active	student management sc	student management sc\sprint	Sanjay Rox

Loading completed

**TEST CASE 44**

44 | Verify whether you can add new users to the application.

Sanjay Rox 0 Comments Add Tag

Save and Close Follow

Updated by Sanjay Rox Sunday

Steps | Summary | Associated Automation

**Recent test results**

- Passed by Sanjay Rox with Windows 10 Completed 7:55 PM, 5/11/2025
- Failed by Sanjay Rox with Windows 10 Completed 7:55 PM, 5/11/2025
- Passed by Sanjay Rox with Windows 10 Completed 7:55 PM, 5/11/2025

[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

Link an Azure Repos commit, pull request or branch to see the

**Login Verification (ID: 34)**

Define Execute Chart

Test Cases (3 items)

Title	Order	Test Case Id	Assigned To	State
Verify the student login functionality of the application.	2	35	Sanjay Rox	Design
Verify the teacher login functionality of the application.	3	36	Sanjay Rox	Design
Verify the admin login functionality of the application.	4	37	Sankara Narayanan	Design

2116231501146

CS23432

**TEST CASE 35**

35 Verify the student login functionality of the application.

Sanjay Rox 0 Comments Add Tag

State: Design Area: student management sc  
Reason: New Iteration: student management sc\sprint 1

Save and Close Follow Updated by Sanjay Rox: Sunday

Steps Summary Associated Automation

**Recent test results**

- Passed by [User] with Windows 10 Completed 1:33 PM, 5/12/2025
- Paused by [User] with Windows 10 Completed 1:33 PM, 5/12/2025
- Passed by [User] with Windows 10 Completed 7:58 PM, 5/11/2025

[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

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.

**Test Suites**

Logout verification (1)

**Logout verification (ID: 40)**

Define Execute Chart

**Test Cases (1 item)**

Title	Order	Test Case Id	Assigned To	Status
Verify the logout functionality of the application	1	41	Sanjay Rox	Defined

**TEST CASE 41**

41 Verify the logout functionality of the application

Sanjay Rox 0 Comments Add Tag

State: Design Area: student management sc  
Reason: New Iteration: student management sc\sprint 2

Save and Close Follow Updated by Sanjay Rox: Sunday

Steps Summary Associated Automation

**Recent test results**

- Blocked by [User] with Windows 10 Completed 7:57 PM, 5/11/2025

**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](#)

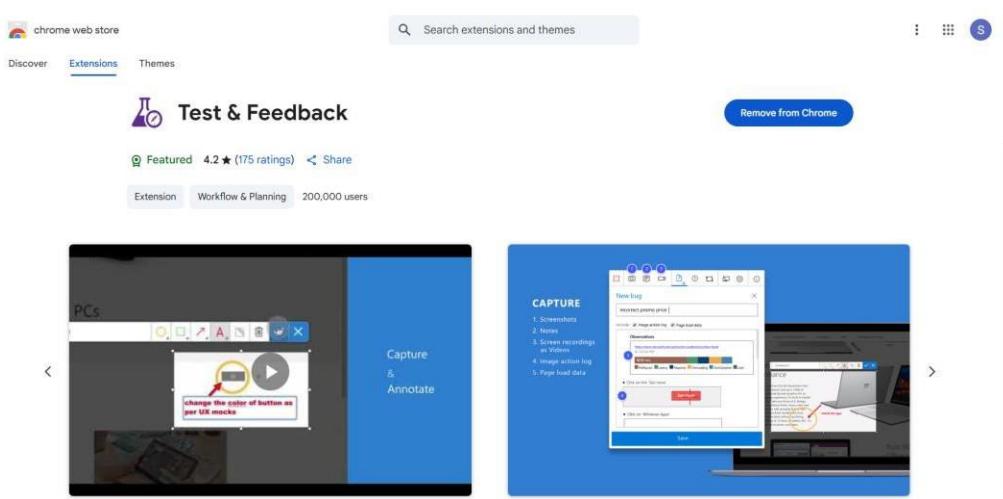
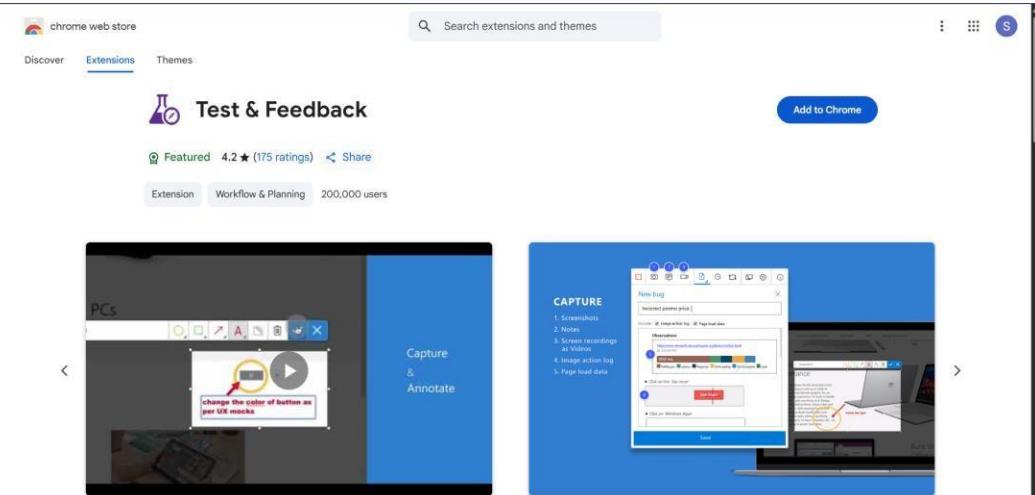
**Development**

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**

#### 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 'student management sc', 'Overview', 'Boards', 'Repos', 'Pipelines', 'Test Plans' (selected), 'Test plans' (sub-selected), 'Progress report', 'Parameters', 'Configurations', 'Runs', 'Artifacts', and 'Project settings'. The main area displays a 'Test Suites' list with one item: 'Checking the admin functions (2)'. Below it is a 'Test Points (2 items)' table:

Title	Outcome	Order	Test Case Id
<input checked="" type="checkbox"/> Verify whether you can add new users to the application.	Passed	1	44
<input checked="" type="checkbox"/> Verify whether the admin can delete the existing user details			

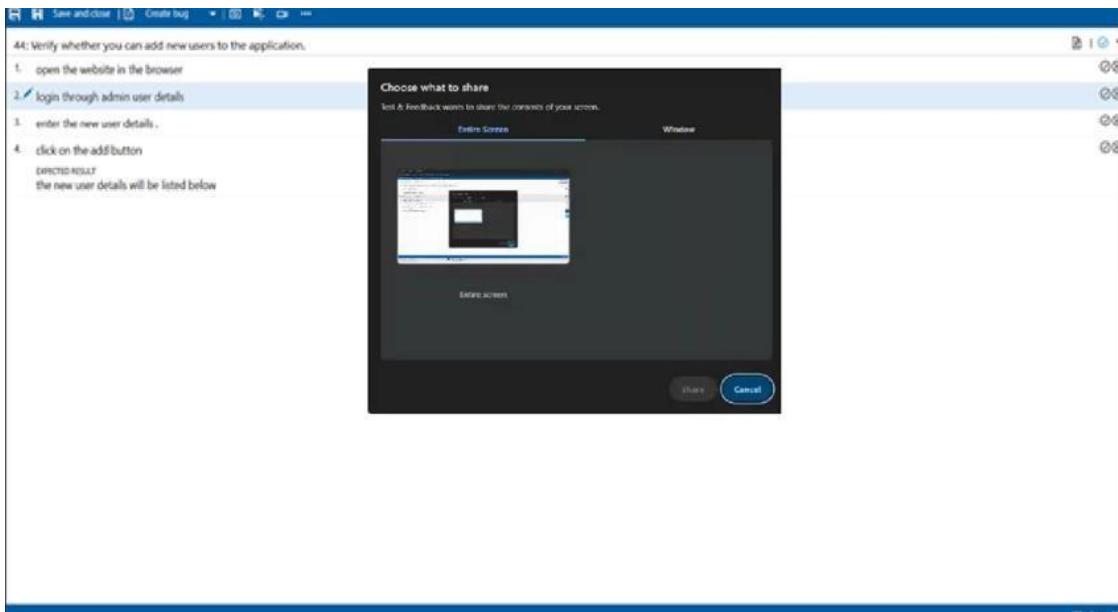
A context menu is open over the second test point, listing options: 'View execution history', 'Mark Outcome' (with a submenu 'Run', 'Reset test to active', 'Edit test case', 'Assign tester', and 'View test result'). Below the table, there's a detailed view of the first test point:

44\*: Verify whether you can add new users to the application.

1. open the website in the browser
2. login through admin user details
3. enter the new user details .
4. click on the add button

EXPECTED RESULT  
the new user details will be listed below

## 6. Recording the test case



## 7. Creating the bug

A screenshot of the Azure DevOps "New Bug" creation page. The bug title is "If admin can't delete, print user not exists".

**Repro Steps**

5/14/2025 2:44 PM Bug filed on "Verify whether the admin can delete the existing user details"

Step no.	Result	Title
1.	None	open the website in browser
2.	None	login through admin user details
3.	None	click on the delete button the left hand side of the user list

**Expected Result**  
the user details will be removed from the list

**Test Configuration:** Windows 10

**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**

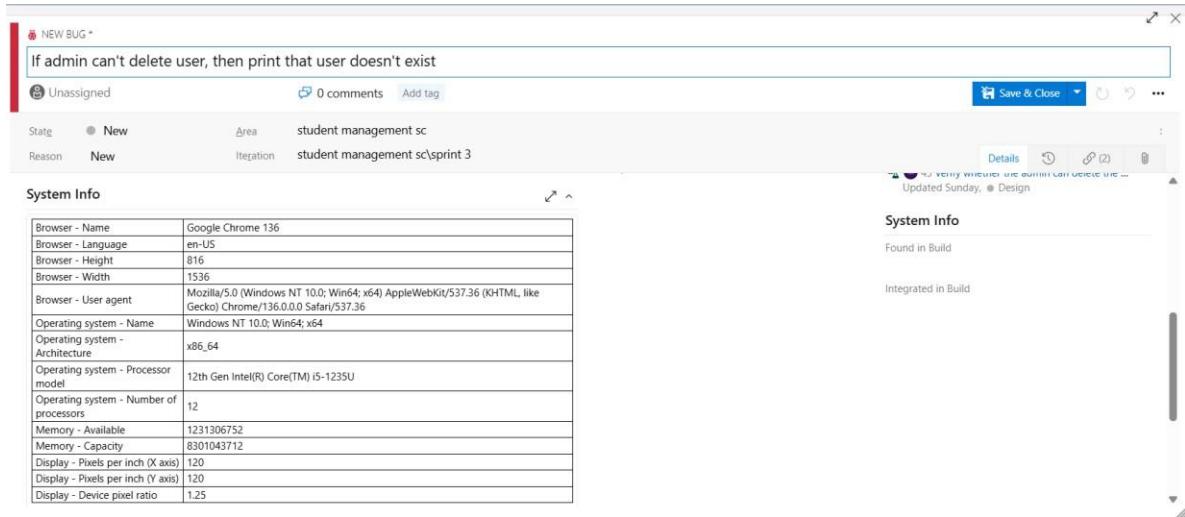
+ Add link  
Link an Azure Repos commit, pull request or branch to see the status of your development. You can also create a branch to get started.

**Effort (Hours)**

Original Estimate  
Remaining

**Related Work**

+ Add link  
Add an existing work item as a parent



## Test Results

Azure DevOps Student-management-SC / student management sc / Test Plans / Login Verification

student management sc

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

Test Suites

Filter suites by name

Login Verification (3)

Define Execute Chart

Test Points (3 items)

- Verify the student login functionality of ...
- Verify the teacher login functionality of ...
- Verify the admin login functionality of ...

Verify the student login functionality of the appli...

Test Case Results

Outcome	TimeSta...	Configuration	Run by	Tester	Test
Passed	Monday	Windows 10	Sanjay Rox	Sanjay Rox	Logi
Paused	Monday	Windows 10	Sanjay Rox	Sanjay Rox	Logi
Passed	Monday	Windows 10	Sanjay Rox	Sanjay Rox	Logi

Open execution history for current test point

The screenshot shows the Microsoft Azure DevOps interface for a project titled "Music Playlist Batch Creator". The left sidebar navigation includes "Overview", "Boards", "Repos", "Pipelines", "Test Plans", "Test plans", "Progress report", "Parameters", "Configurations", "Runs", and "Artifacts". The "Test Plans" section is currently selected. A sub-menu for "Test Plans" shows "Test Suites" with one item: "TS02 - View Playlists (ID: 87)". The main content area displays the "TS02 - View Playlists" test plan. It has tabs for "Define", "Execute", and "Chart". The "Execute" tab is selected, showing "Test Points (2 items)" with two entries: "TC05 – View Playlist Page" (selected) and "TC06 – Playlist Loading Failure". Below this is a table of "Test Case Results" with columns: Outcome, TimeStamp, Configuration, Run by, Tester, and Test Pl. The results show several green "Passed" entries and one red "Failed" entry for TC06.

## 8. Test report summary

The screenshot shows a "NEW BUG" entry in the Azure DevOps interface. The title field is empty, indicated by a red error bar. The bug details include:

- Title:** Enter title
- Assignee:** Shriram N
- Comments:** 0 comments
- Tags:** Add tag
- State:** New
- Reason:** New
- Area:** student management sc
- Iteration:** student management sc\sprint 1

**Repro Steps:**

5/14/2025 3:03 PM Bug filed on "Verify the admin login functionality of the application."

Step no.	Result	Title
1.	None	check whether admin can login successfully with wrong email id and password
2.	None	if he can login with invalid credentials , then print error

**Expected Result:**  
Wrong credentials

**Test Configuration:** Windows 10

**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:**

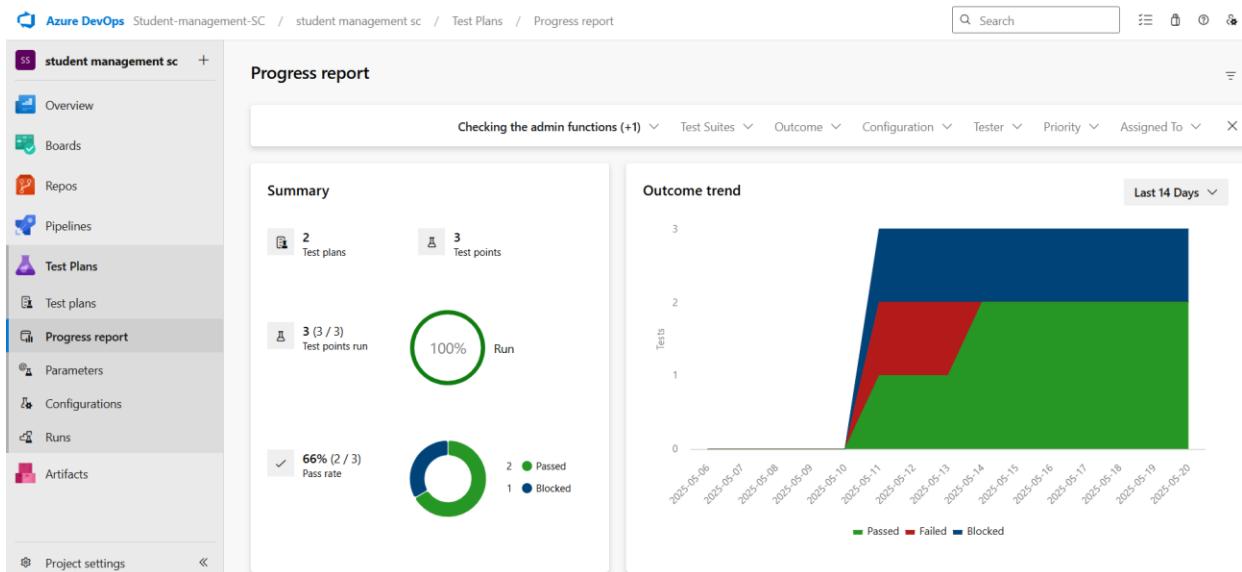
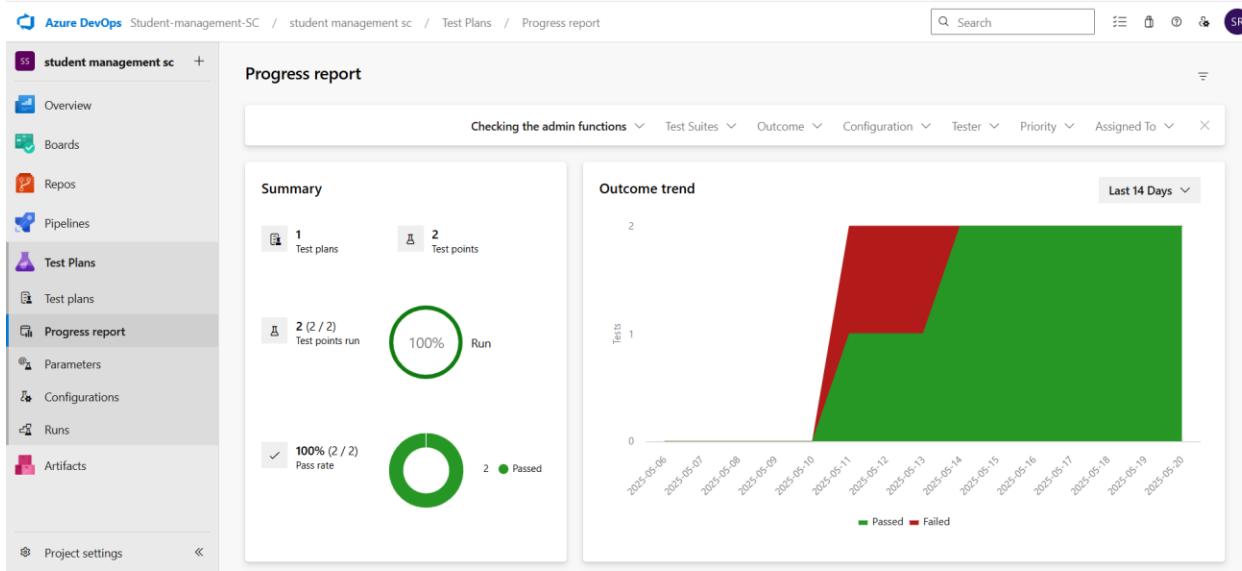
- + Add link
- Link an Azure Repos commit, pull request or branch to see the status of your development. You can also create a branch to get started.

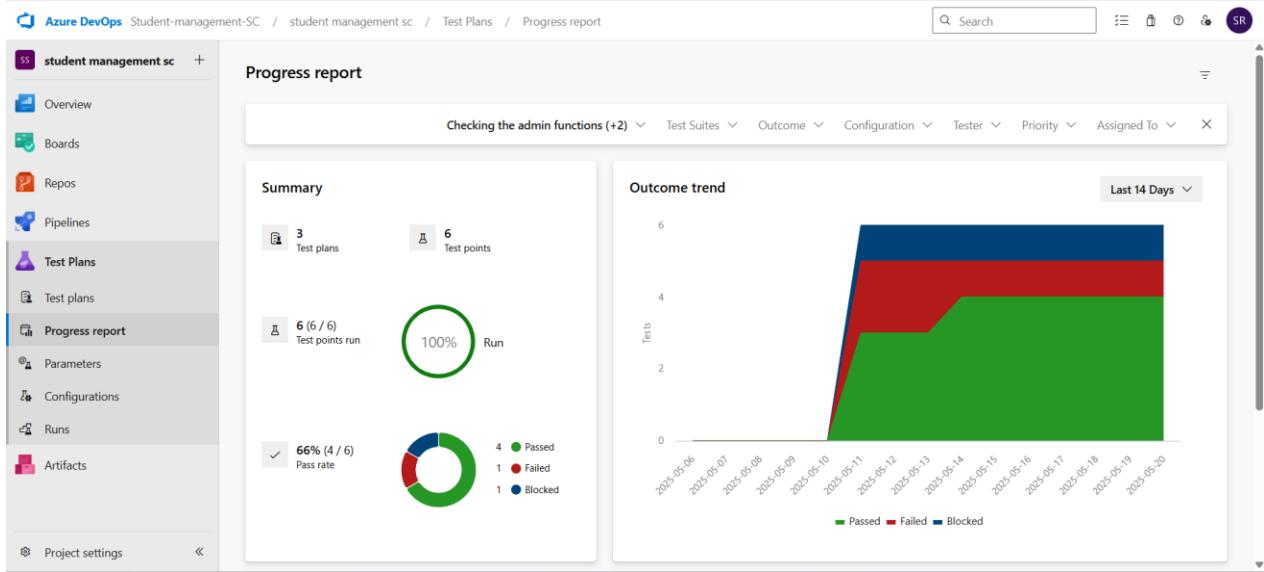
**Related Work:**

- + Add link
- Add an existing work item as a parent

### 1. Assigning bug to the developer and changing state

## 9. Progress report





## 10. Changing the test template

Azure DevOps Student-management-SC / Settings / Process

**Organization Settings**

All processes

Processes Fields

Name	Description	Team projects
Basic (default)	This template is flexible for any process and great for teams getting started with Az... 0	0
Agile	This template is flexible and will work great for most teams using Agile planning me... 1	1
Scrum	This template is for teams who follow the Scrum framework. 0	0
CMMI	This template is for more formal projects requiring a framework for process improv... 0	0

Help Filter by process name

**General**

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

**Security**

- Security overview
- Policies
- Permissions

**Boards**

**Result:**

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

<b>EXP NO: 9</b> <b>DATE:</b>	<b>Ci/CD PIPELINES IN AZURE</b>
----------------------------------	---------------------------------

## **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](https://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 project "student management sc". The left sidebar has "Pipelines" selected. The main area shows two completed pipeline runs:

Description	Stages	Run Status	Last Run Date	Last Run Duration
#20250515.2 • Set up CI with Azure Pipelines ↳ Manually triggered for <a href="#">azure-pipelines/1</a> ↳ 3eebc1ef ↳	✓	Green	Thursday	10s
#20250515.1 • Set up CI with Azure Pipelines ↳ Individual CI for <a href="#">azure-pipelines/1</a> ↳ 1b9922e1 ↳	✓	Green	Thursday	11s

The screenshot shows the Azure DevOps Pipelines interface for a project named "student management sc". The left sidebar has "Pipelines" selected. A recent run, "#20250515.1 • Set up CI with Azure Pipelines", is displayed. The run is marked as successful and is retained as one of three recent runs. The "Summary" tab is active, showing details about the individual CI run by Sanjay Rox, including repository information (student management sc, azure-pipelines/1), start time (Thu at 1:57 PM), duration (11s), and related work items (0). The "Jobs" section shows a single job named "Job" which was successful and took 4s. The top right features a search bar and various navigation icons.

Azure DevOps Student-management-SC / student management sc / Pipelines / student management sc / 20250515.2

Search Run new ⋮

student management sc +

Overview Boards Repos Pipelines Pipelines Environments Library Test Plans Artifacts Project settings

#20250515.2 • Set up CI with Azure Pipelines

This run is being retained as one of 3 recent runs by azure-pipelines/1 (Branch). View retention leases

Summary Code Coverage

Manually run by Sanjay Rox

Repository and version

student management sc  
azure-pipelines/1 3eebc1ef

Time started and elapsed

Thu at 2:01 PM 10s

Related 0 work items 0 artifacts

Tests and coverage

Get started

Jobs

Name	Status	Duration
Job	Success	4s

## **RESULT:**

Thus the pipelines for the given project “Student Management System has been executed successfully

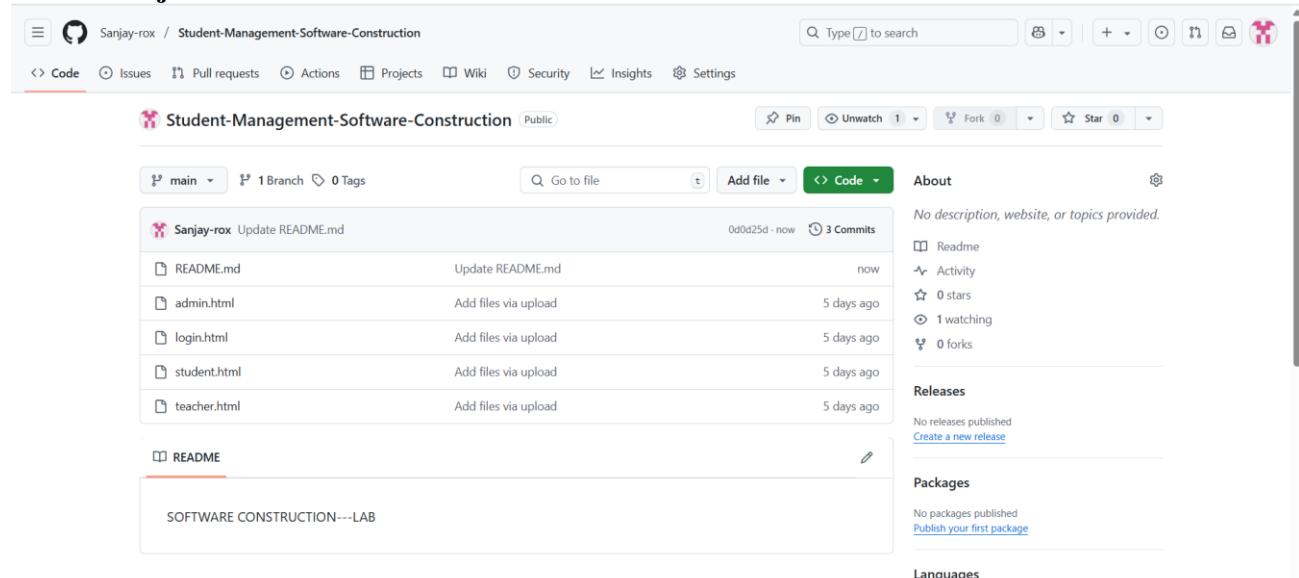
**EXP NO: 10**  
**DATE:**

## 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 Student Management System project.

### 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 content area displays the repository details for 'Student-Management-Software-Construction' (Public). It shows a commit history from 'Sanjay-rox' updating 'README.md'. Below the commit history, there is a 'README' section containing the text 'SOFTWARE CONSTRUCTION---LAB'. On the right side of the page, there are sections for About (no description), Releases (no releases published), Packages (no packages published), and Languages (a progress bar showing 0% completion).

### 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.