



# RAJALAKSHMI ENGINEERING COLLEGE

**SOFTWARE CONSTRUCTION**

**Laboratory Record Note Book**

Name : .....

Year / Branch / Section : .....

Register No. : .....

Semester : .....

Academic Year : .....



**RAJALAKSHMI ENGINEERING COLLEGE  
(AUTONOMOUS)**

**RAJALAKSHMI NAGAR, THANDALAM – 602 105**

**BONAFIDE CERTIFICATE**

NAME : HEMANTH C REGISTER NO : 231001062

ACADEMIC YEAR 2024-25 SEMESTER- IV BRANCH: B. Tech Information Technology [FA]. This Certification is the Bonafide record of work done by the above student in the **CS23432- Software Construction** Laboratory during the year 2024-2025.

Signature of Faculty -in – Charge

Submitted for the Practical Examination held on \_\_\_\_\_

Internal Examiner

External Examiner

**LAB PLAN**  
**CS23432-SOFTWARE CONSTRUCTION LAB**

| <b>Ex No</b> | <b>Date</b> | <b>Topic</b>  | <b>Page No</b> | <b>Sign</b> |
|--------------|-------------|---|----------------|-------------|
| 1            | 21/01/2025  | Study of Azure DevOps   |                |             |
| 2            | 28/01/2025  | Problem Statement   |                |             |
| 3            | 04/02/2025  | Agile Planning  |                |             |
| 4            | 18/02/2025  | Create User stories with Acceptance Criteria                  |                |             |
| 5            | 25/02/2025  | Designing Sequence Diagrams using Azure DevOps-WIKI           |                |             |
| 6            | 04/03/2025  | Designing Class Diagram using Azure DevOps-WIKI               |                |             |
| 7            | 11/03/2025  | Designing Use case Diagram using Azure DevOps-WIKI            |                |             |
| 8            | 18/03/2025  | Designing Activity Diagrams using Azure DevOps-WIKI           |                |             |
| 9            | 25/03/2025  | Designing Architecture Diagram Using Star UML                 |                |             |
| 10           | 01/04/2025  | Design User Interface   |                |             |
| 11           | 08/04/2025  | Implementation – Design a Web Page based on Scrum Methodology |                |             |
| 12           | 15/04/2025  | Testing-Test Plan, Test Case and Load Testing                 |                |             |

**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.

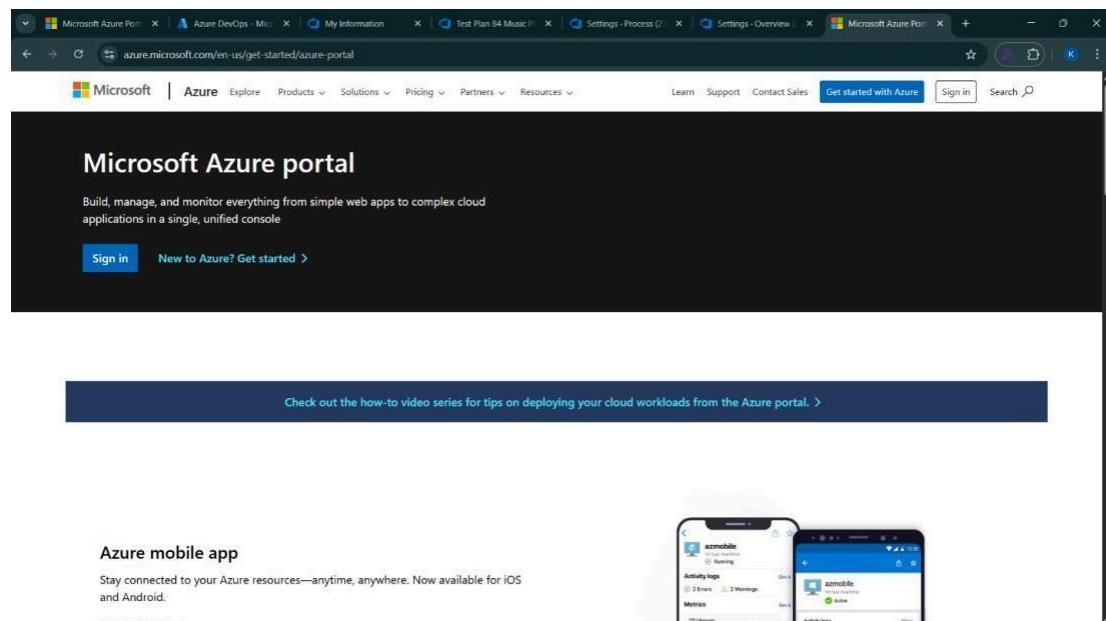
### **INSTALLATION**

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>



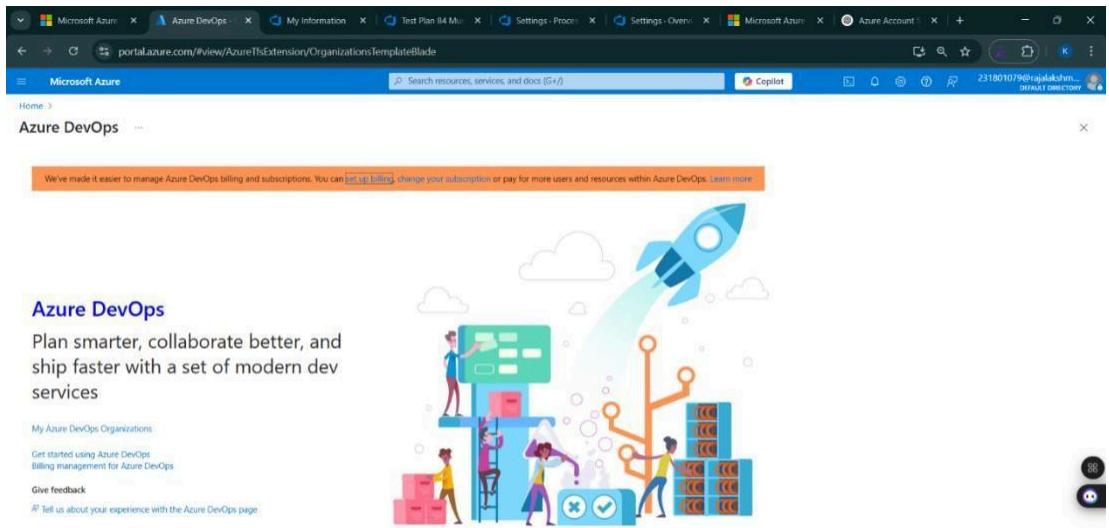
## 2. Azure home page

The screenshot shows the Microsoft Azure home page. At the top, there's a navigation bar with tabs like 'My Information', 'Test Plan 84 Min...', 'Settings - Proc...', 'Settings - Over...', 'Microsoft Azure', and 'Azure Account'. Below the navigation bar is the Azure services navigation bar with icons for 'Create a resource', 'Azure DevOps organizations', 'Subscriptions', 'Dashboard hub', 'Resource groups', 'Azure Load Testing', 'Quickstart Center', 'Azure AI services', 'Kubernetes services', and 'More services'. Under 'Resources', there's a table showing recent resources: 'Music' (Azure Load Testing) and 'Music\_playlist\_Batch\_Creator' (Resource group). The 'Recent' tab is selected. Below that is a 'Navigate' section with links for 'Subscriptions', 'Resource groups', 'All resources', and 'Dashboard'. A 'Tools' section follows, featuring 'Microsoft Learn', 'Azure Monitor', 'Microsoft Defender for Cloud', and 'Cost Management'. At the bottom, there's a 'Useful links' section and an 'Azure mobile app' section.

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

The screenshot shows the Microsoft Azure home page again, but with a search bar at the top containing the text 'DevOps'. The rest of the interface is identical to the previous screenshot, showing the Azure services navigation bar, recent resources, and various tools.

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.

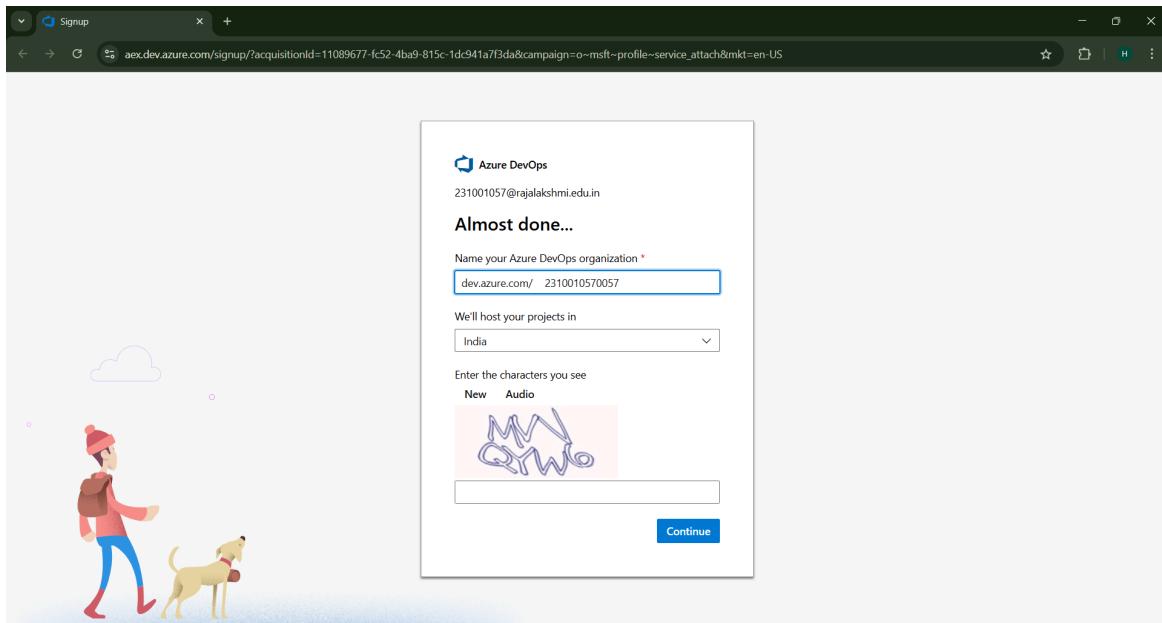
**EXP NO: 2**

## **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**

- 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 a project to get started

Project name \*

E LEARNING PLATFORM

### 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](#).

+ Create project

- 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. At the top, there are three organization cards:

- dev.azure.com/231001057** (Owner)
- dev.azure.com/2310010570057** (Owner)
- dev.azure.com/2116231001062** (Member)

For the third organization, "E-Learning Project", the details shown are:

- Projects**: E-Learning Project
- Actions**: Open in Visual Studio, Manage security, Browse extensions, Leave

On the left sidebar, under "Visual Studio Dev Essentials", it says "Get everything you need to build and deploy your app on any platform." and "Use your benefits".

## 4. Project dashboard

The screenshot shows the "Summary - Overview" page for the "E-Learning Project". The left sidebar includes links for Overview, Summary, Dashboards, Wiki, Boards, Pipelines, Artifacts, and Project settings.

The main content area displays the following information:

- E-Learning Project** (Project name)
- About this project**:
  - The E-Learning Platform is a comprehensive, web-based learning management system (LMS) developed to offer seamless and flexible education for students, professionals, and educators. This platform enables remote learning through interactive digital content, performance tracking, and real-time communication. It is ideal for academic institutions, training centers, and corporate learning environments.
  - Key Features:**
    - User Authentication & Roles: Secure login for students, instructors, and admins.
    - Course Creation & Management: Instructors can upload videos, documents, and quizzes.
    - Interactive Learning: Multimedia content, discussion forums, and live class integration.
    - Assessment & Certification: Auto-graded quizzes, assignments, and downloadable certificates.
    - Progress Tracking: Dashboard for learners to track progress and performance.
    - Notifications: Email/SMS alerts for new courses, deadlines, and announcements.
  - Use Cases:**
    - Academic Institutions: Schools and colleges can conduct online classes and exams.
    - Corporate Training: Companies can onboard employees and upskill them through structured modules.
    - Tutoring Platforms: Individual educators or coaching centers can offer online courses.
    - Skill Development: Government or private organizations can run digital literacy or vocational training programs.
- Project stats**: Period: Last 7 days
- Boards**: 1 Work items created, 0 Work items completed
- Members**: FZ, HS, HC, BD

## 5. 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.

The screenshot shows the Azure DevOps Boards page for the 'E-Learning Project' team. The left sidebar has 'Backlogs' selected. The main area displays the 'Backlog' view for the 'E-Learning Project Team'. A table lists 8 Epics with their titles and details. To the right, there's a 'Planning' section with three iterations: 'Iteration-45' (Planned Effort: 0.21 working days), 'Iteration 1' (Planned Effort: 0), and 'Iteration 2' (Planned Effort: 0). A search bar and various navigation icons are at the top.

| Order | Work Item Type | Title   | State | Effort   | Business Value |
|-------|----------------|---|-------|----------|----------------|
| 1     | Epic           | > Course Content Enhancement and Multimedia Integration | New   | Business | 100            |
| 2     | Epic           | > Course Discovery and Enrollment                       | New   | Business | 100            |
| 3     | Epic           | > Learning Material Access and Engagement               | New   | Business | 100            |
| 4     | Epic           | > Assignments and Grading                               | New   | Business | 100            |
| 5     | Epic           | > Communication and Collaboration                       | New   | Business | 100            |
| 6     | Epic           | > Course Management for Instructors                     | New   | Business | 100            |
| 7     | Epic           | > Student Engagement and Communication                  | New   | Business | 100            |
| 8     | Epic           | > Platform Personalization and Accessibility            | New   | Business | 100            |

The screenshot shows the Azure DevOps backlog page for the 'E-Learning Project Team'. At the top, there's a search bar and a sign-out link. The main area displays the 'E-Learning Project Team backlog' with 3 items. A modal window titled 'Sign in with a different account' is open in the center. The backlog table includes columns for State, Effort, Business Value, and Value. The first item is 'New' with 1 point of business value and 1 point of value. The second item is 'New' with 1 point of business value and 1 point of value. The third item is 'New' with 1 point of business value and 1 point of value.

| State | Effort   | Business Value | Value |
|-------|----------|----------------|-------|
| New   | Business | 1              | 1     |
| New   | Business | 1              | 1     |
| New   | Business | 1              | 1     |

**Result:**

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

**EXP NO: 3**

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

### **Aim:**

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

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

The screenshot shows the Azure DevOps interface for the 'E-Learning Project'. On the left, the navigation menu is open, showing 'Backlogs' as the selected item under 'Boards'. The main area displays a backlog board titled 'E-Learning Project Team'. The backlog is organized into a hierarchy: there are 8 Epics at the top level, each containing one or more Features, which in turn contain User Stories. The first Epic, 'Course Content Enhancement and Multimedia Integration', contains three Features: 'Multimedia Lesson Integration', 'YouTube Videos in Lessons', and 'Attach PDF Study Materials'. The second Epic, 'Course Discovery and Enrollment', contains two Features: 'Assignments and Grading' and 'Communication and Collaboration'. The third Epic, 'Learning Material Access and Engagement', contains one Feature: 'Course Management for Instructors'. The fourth Epic, 'Student Engagement and Communication', contains one Feature: 'Platform Personalization and Accessibility'. The fifth Epic, 'Course Content Enhancement and Multimedia Integration', contains one Feature: 'Supplementary Resource Management'. The sixth Epic, 'Assignments and Grading', contains one Feature: 'Course Management for Instructors'. The seventh Epic, 'Communication and Collaboration', contains one Feature: 'Platform Personalization and Accessibility'. The eighth Epic, 'Platform Personalization and Accessibility', contains one Feature: 'Supplementary Resource Management'. All work items are currently in the 'New' state and are categorized under the 'Business' value area.

### **1. Fill in Epics**

The screenshot shows the details of an Epic work item in Azure DevOps. The title of the Epic is 'Course Content Enhancement and Multimedia Integration'. The work item has a priority of 2 and a risk of 1. It is associated with the 'E-Learning Project' area and the 'E-Learning Project\Iteration 1' iteration. The 'Details' tab is selected, showing sections for Description, Planning, Deployment, Development, and Classification. The 'Description' section has a note: 'Click to add Description.' The 'Planning' section includes fields for Priority (2), Risk (1), Business Value, Time Criticality, Start Date (set to 'Select a date...'), Target Date (set to 'Select a date...'), and Effort. The 'Deployment' section notes: '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 'Add link' and 'Related Work' sections. The 'Classification' section shows the value area as 'Business'. The bottom right corner of the screenshot shows a watermark: 'E-Learning Project Information'.

## 2.Fill in Features

The screenshot shows the 'Edit' view for a Feature named 'Multimedia Lesson Integration'. The top navigation bar includes 'Save and Close', 'Follow', and 'Details' buttons. The main area is divided into several sections:

- Description:** A text input field with placeholder text: "Click to add Description."
- Planning:** Fields for Priority (set to 2), Risk, and Effort.
- Deployment:** A note about tracking releases via Azure Boards.
- Development:** A note about linking to Azure Repos.
- Classification:** Value area set to Business.
- Related Work:** A link to another feature item (58).

At the bottom, there's a 'Discussion' section with a comment input field and a 'switch to Markdown editor' link.

## 3.Fill in User Story Details

The screenshot shows the 'Edit' view for a User Story named 'YouTube Videos in Lessons'. The top navigation bar includes 'Save and Close', 'Follow', and 'Details' buttons. The main area is divided into several sections:

- Description:** A text input field with placeholder text: "As an instructor, I want to embed YouTube videos into my lessons, so that students can benefit from external visual resources."
- Acceptance Criteria:** A list:
  - **Acceptance Criteria 1:** Instructors can embed YouTube links into lesson content using a video block.
  - **Acceptance Criteria 2:** Students can play the video directly without being redirected from the platform.
- Planning:** Story Points, Priority (set to 2), and Risk.
- Deployment:** A note about tracking releases via Azure Boards.
- Development:** A note about linking to Azure Repos.
- Classification:** Value area set to Business.
- Related Work:** A link to another user story item (59).

At the bottom, there's a 'Discussion' section with a comment input field.

**Result:**

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

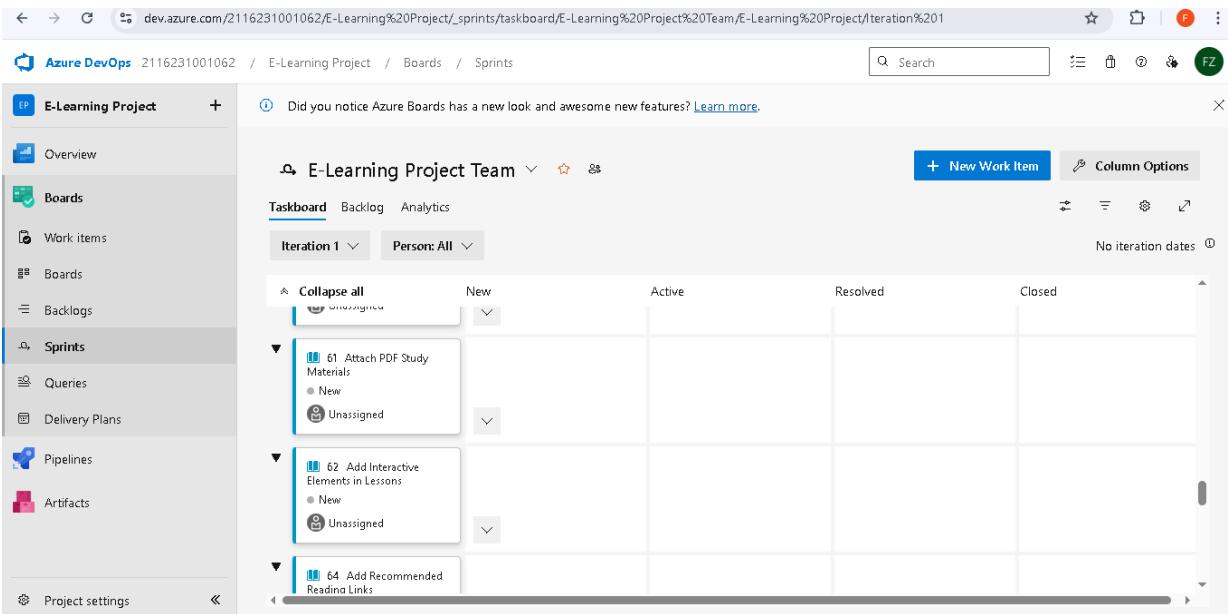
**EXP NO: 4**

## **SPRINT PLANNING**

### **Aim:**

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

### **Sprint Planning Sprint 1**



The screenshot shows the Azure DevOps Taskboard for the E-Learning Project Team. The left sidebar navigation includes Overview, Boards, Work items, Boards, Backlogs, Sprints (selected), Queries, Delivery Plans, Pipelines, Artifacts, and Project settings. The main area displays the Taskboard for Iteration 1, with columns for New, Active, Resolved, and Closed. Three user stories are listed:

- 61 Attach PDF Study Materials (New, Unassigned)
- 62 Add Interactive Elements in Lessons (New, Unassigned)
- 64 Add Recommended Reading Links (New, Unassigned)

### **Sprint-2**

← → ⌂ dev.azure.com/2116231001062/E-Learning%20Project/\_sprints/taskboard/E-Learning%20Project%20Team/E-Learning%20Project/Iteration%202

Azure DevOps 2116231001062 / E-Learning Project / Boards / Sprints

E-Learning Project +

Did you notice Azure Boards has a new look and awesome new features? [Learn more.](#)

E-Learning Project Team

Taskboard Backlog Analytics

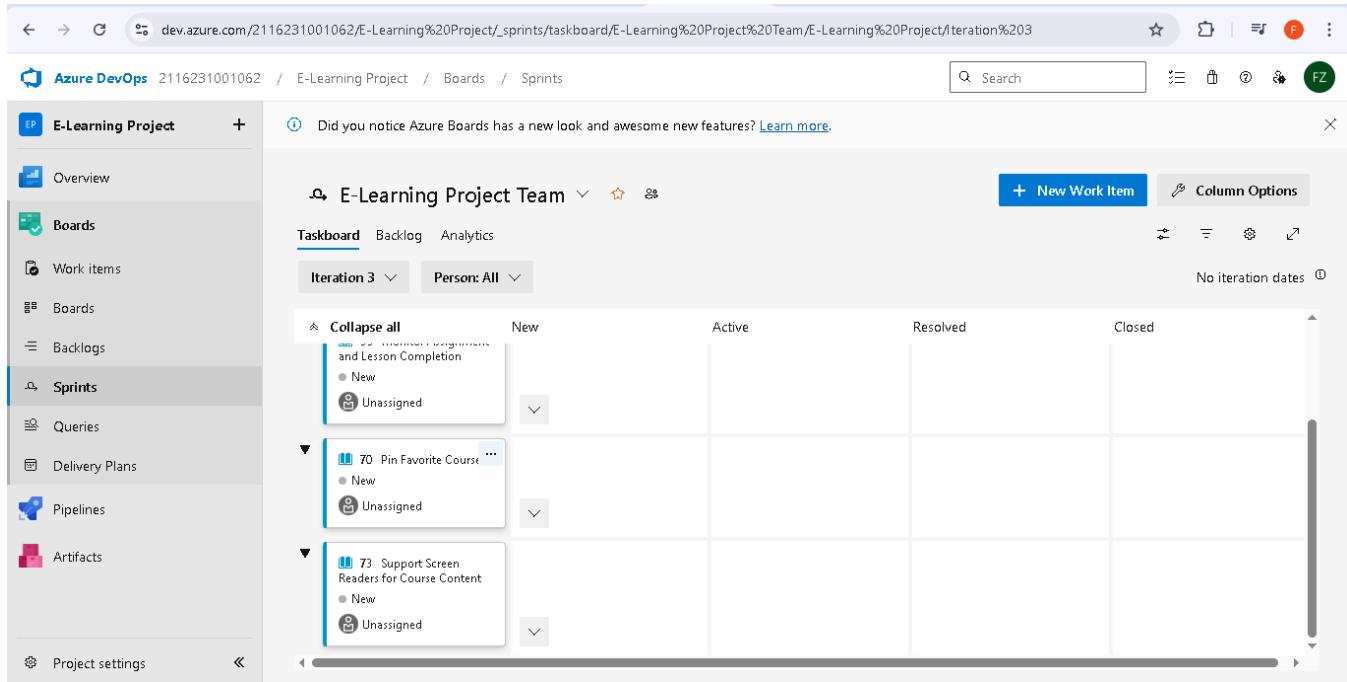
Iteration 2 Person: All No iteration dates

Collapsible backlog items:

- 6 One-Click Course Enrollment (New, Hemanth C)
- 7 Access Welcome and Orientation Material (New, Unassigned)
- 35 Send Private Messages (New)

Columns: New, Active, Resolved, Closed

## Sprint 3

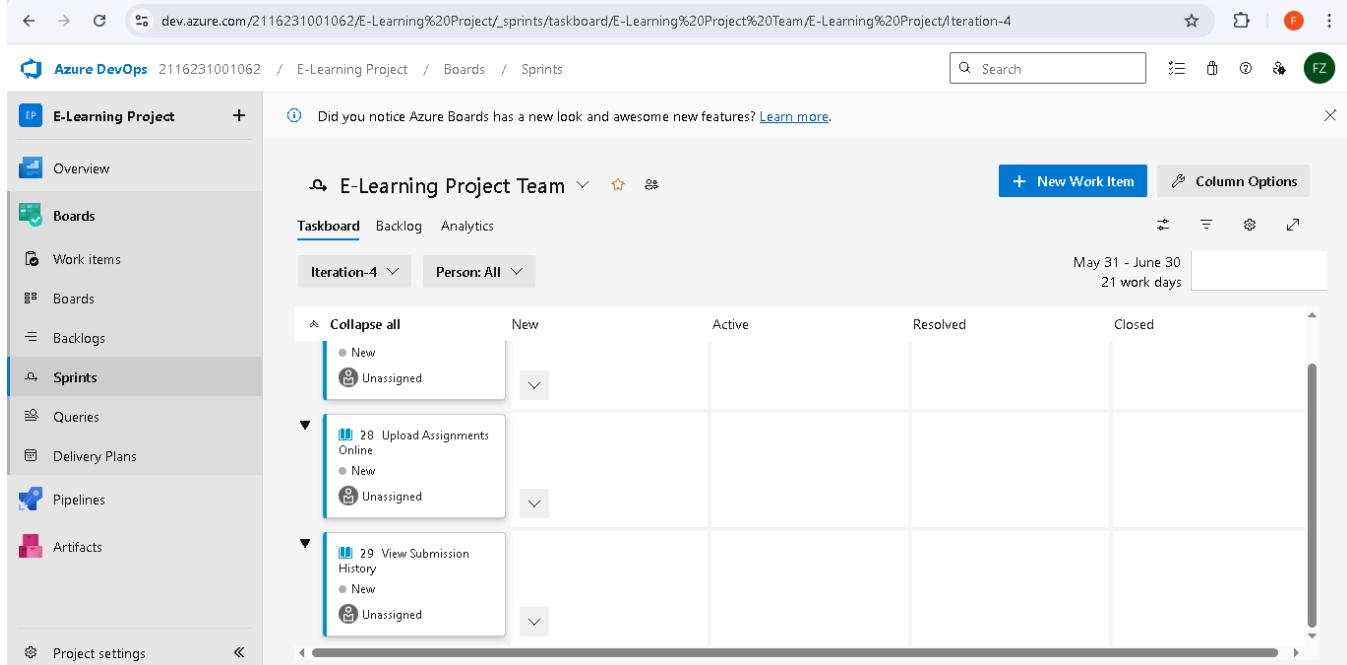


The screenshot shows the Azure DevOps Taskboard for the E-Learning Project Team in Sprint 3. The board has columns for New, Active, Resolved, and Closed. There are three items visible:

- New:** One item, "70 Pin Favorite Course", is listed as New and Unassigned.
- Active:** One item, "73 Support Screen Readers for Course Content", is listed as New and Unassigned.
- Resolved:** No items are currently resolved.

The sidebar on the left shows the project navigation, and the top bar includes a search bar and various project settings.

## Sprint 4



The screenshot shows the Azure DevOps Taskboard for the E-Learning Project Team in Sprint 4. The board has columns for New, Active, Resolved, and Closed. There are three items visible:

- New:** One item, "28 Upload Assignments Online", is listed as New and Unassigned.
- Active:** One item, "29 View Submission History", is listed as New and Unassigned.
- Resolved:** No items are currently resolved.

The sidebar on the left shows the project navigation, and the top bar includes a search bar and various project settings. A date range is displayed at the top right: May 31 – June 30, 21 work days.

**Result:**

The Sprints are created for the E-Learning Project.

|                  |                         |
|------------------|-------------------------|
| <b>EXP NO: 5</b> | <b>POKER ESTIMATION</b> |
|------------------|-------------------------|

**Aim:**

Create Poker Estimation for the user stories - E-Learning Project.

**Poker Estimation**

**USER STORY 10\***

10 Track Course Progress

Faqrudeen Faizan Z 0 Comments Add Tag

Save Follow Details

Updated by Hernanth C: Apr 4

| Description         | Planning  | Deployment  |
|---------------------|---|---|
| Acceptance Criteria | Story Points: 10<br>Priority: 2<br>Risk: 2 - Medium | To track releases associated with this work item, go to <a href="#">Releases</a> and turn on deployment status reporting for Boards in your pipeline's Options menu. <a href="#">Learn more about deployment status reporting</a> |
| Discussion          | Classification                                      | <b>Add link</b><br>Link an Azure Repos <a href="#">commit</a> , <a href="#">pull request</a> or <a href="#">branch</a> to see the status of your development. You can also <a href="#">create a branch</a> to get started.        |
|                     | Value area: Business                                | <b>Related Work</b>   |

**Result:**

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

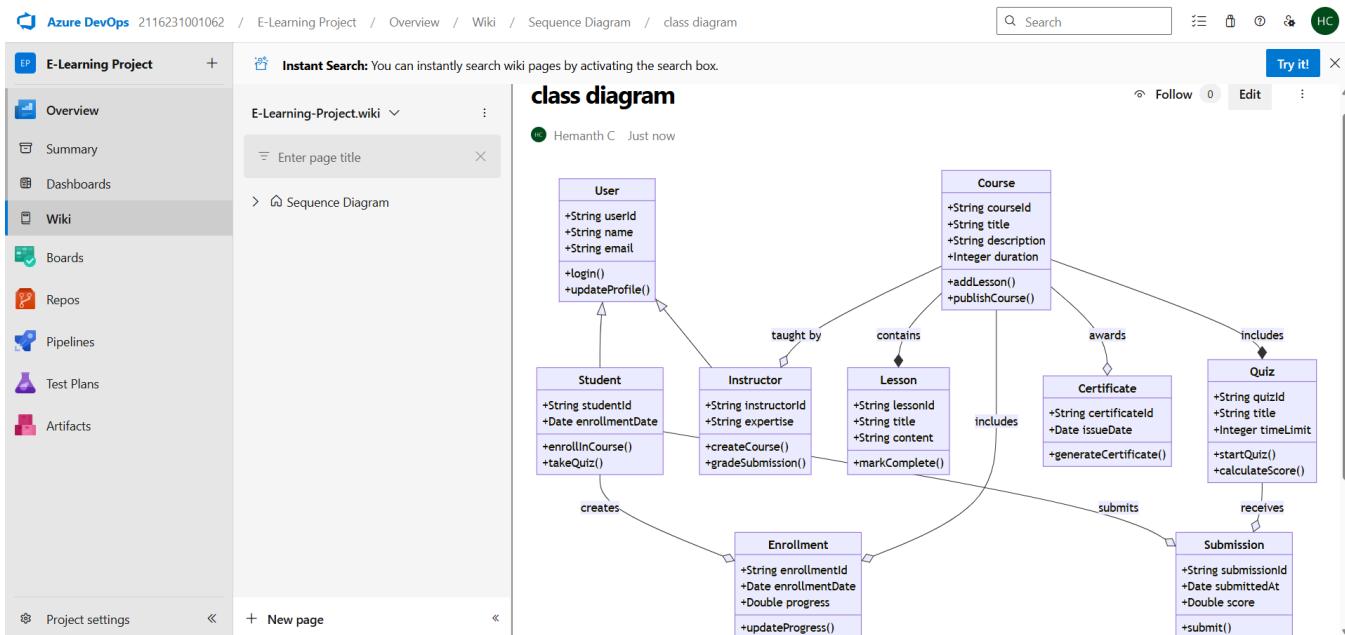
**EXP NO: 6**

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

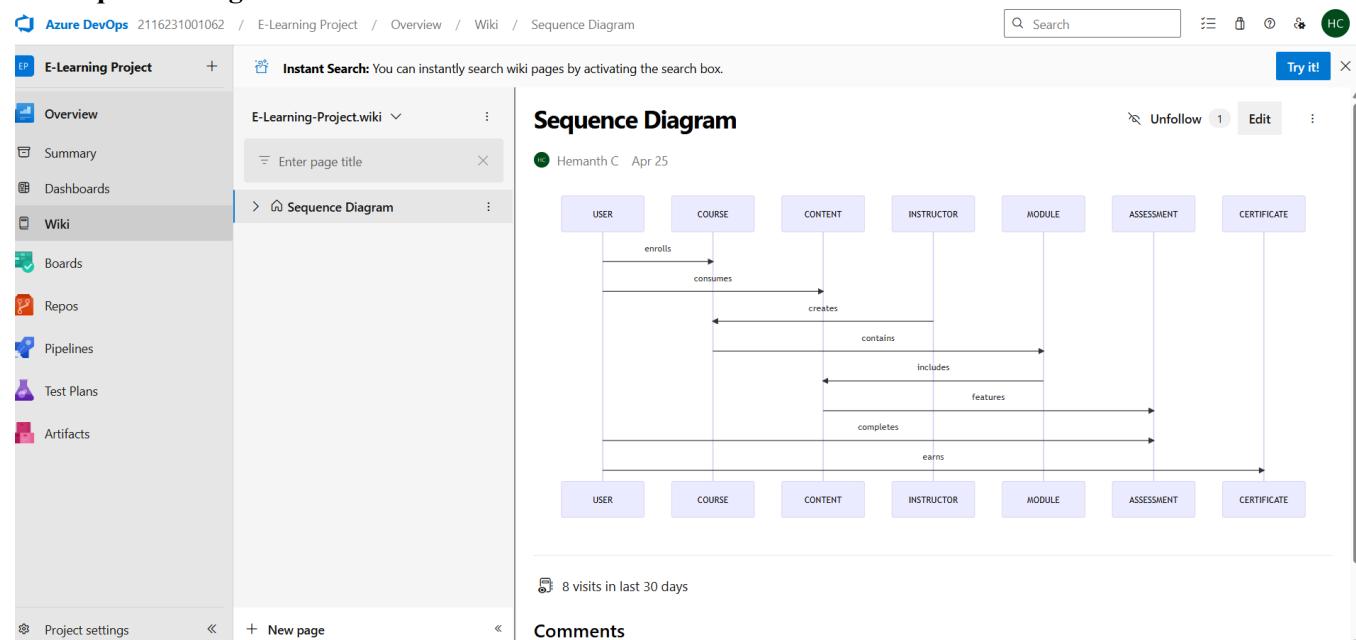
### **Aim:**

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 E-learning platform project.

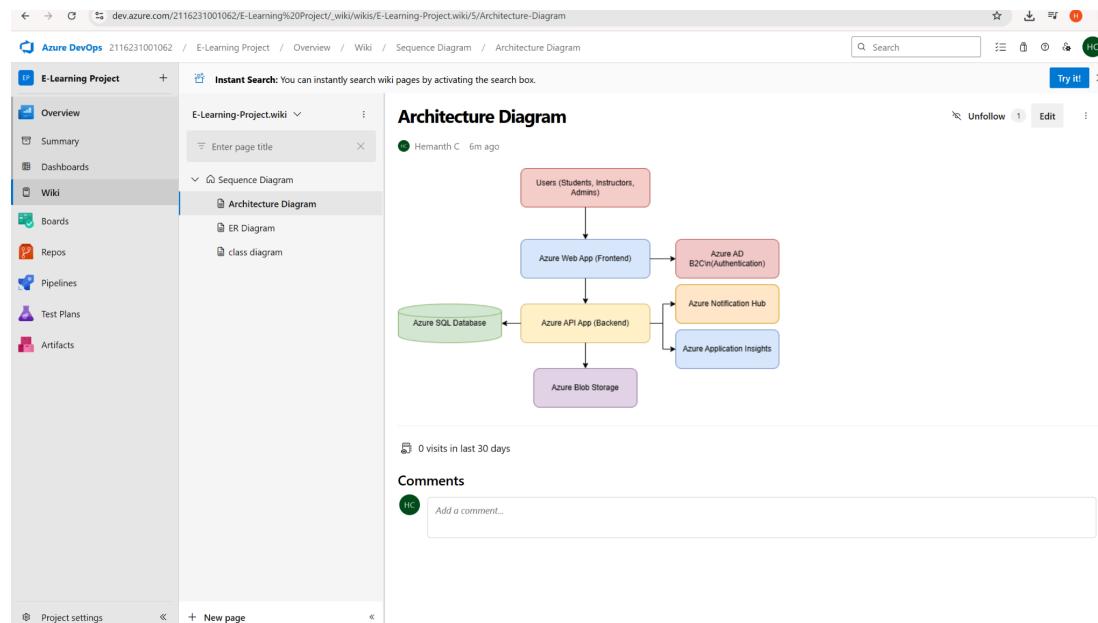
**EXP NO: 7**

# **DESIGNING ARCHITECTURAL AND ER DIAGRAMS FOR PROJECT STRUCTURE**

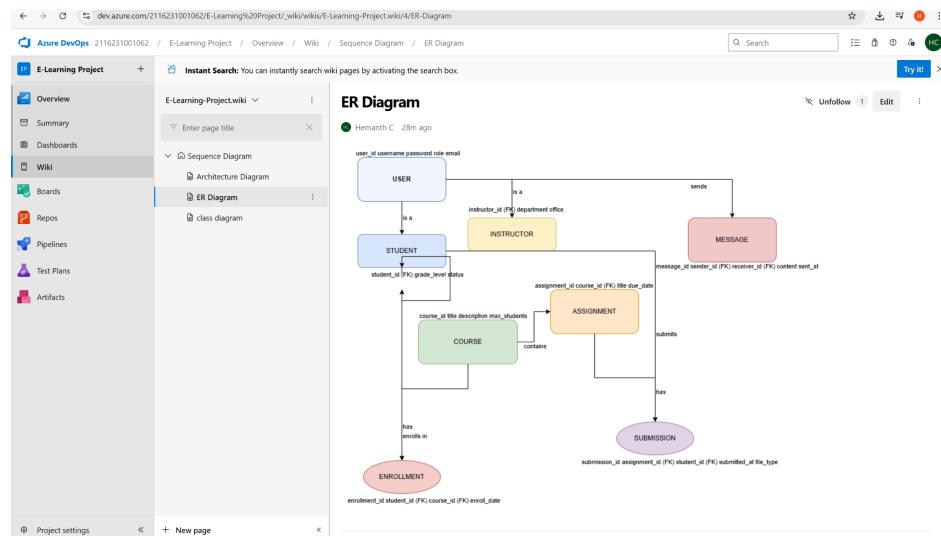
## **Aim:**

To Design an Architectural Diagram and ER Diagram for the given Project.

## **7A. Architectural Diagram**



## **7B. ER Diagram**



**Result :**

The Architecture Diagram and ER Diagram is designed successfully for E-Learning platform project.

|                  |  |
|------------------|--|
| <b>EXP NO: 8</b> | <b>TESTING – TEST PLANS AND TEST CASES</b> |
|------------------|--|

**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**

- o User Signup & Login
- o Viewing and Managing course
- o Fetching Real-time Metadata
- o Editing course (rename, reorder, record)
- o Creating smart course playlists based on categories

**2. Define User Interactions**

- o Each test case simulates a real user behaviour (e.g., logging in , adding a course).

**3. Design Happy Path Test Cases**

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

**4. Design Error Path Test Cases**

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

**5. Break Down Steps and Expected Results**

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

**6. Use Clear Naming and IDs**

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

**7. Separate Test Suites**

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

- o Improves organization and test execution flow in Azure DevOps.

## 8. Prioritize and Review

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

## 1. New test plan

New Test Plan

Name \*

Area Path \*

Iteration \*

**Create** **Cancel**

## 2. Test suite

| Test Cases (4 items)                                    |       |              |                          |         |
|---|-------|--------------|--------------------------|---------|
|   | Order | Test Case Id | Assigned To              | State   |
| <input type="checkbox"/> TC01 - Successful Sign Up      | 1     | 78           | Karthikeyan Se... Design | Pending |
| <input type="checkbox"/> TC02 - Invalid Email           | 2     | 80           | Karthikeyan Se... Design | Pending |
| <input type="checkbox"/> TC03 - Requirement based suite | 3     | 81           | Karthikeyan Se... Design | Pending |
| <input type="checkbox"/> TC04 - Query based suite       | 4     | 82           | Karthikeyan Se... Design | Pending |

### **3.Test case**

#### **TC01 – Successful Sign Up**

##### **Action:**

- Go to the Sign-Up page.
- Enter a valid name, email, and password.
- Click "Sign Up".

##### **Expected Results:**

- Form is displayed properly.
- Fields accept valid input.
- Account is created, and the user is redirected to the dashboard.

**Type:** Happy Path

#### **TC02 – Sign Up with Existing Email**

##### **Action:**

- Go to the Sign-Up page.
- Enter a name and an already registered email.
- Click "Sign Up".

##### **Expected Results:**

- Fields accept input.
- Error message "Email already registered" is shown.

**Type:** Error Path

## **Test Suite: TS02 - Course Dashboard (ID: 202)**

#### **TC03 – View Enrolled Courses**

**Action:**

- Login successfully.
- Navigate to "My Courses".

**Expected Results:**

- All enrolled courses are listed with thumbnails and progress indicators.

**Type:** Happy Path

### **TC04 – Courses Not Loading**

**Action:**

- Disconnect internet.
- Navigate to "My Courses".

**Expected Results:**

- Page loads with placeholder.
- Error message "Unable to load courses. Please check your connection." is shown.

**Type:** Error Path

## **Test Suite: TS03 - Course Enrollment (ID: 203)**

### **TC05 – Successful Course Enrollment**

**Action:**

- Login successfully.
- Navigate to "Course Catalog".
- Select a course and click "Enroll".

**Expected Results:**

- Course is added to "My Courses" list.

- Confirmation message "Successfully enrolled" is shown.

**Type:** Happy Path

### **TC06 – Enrollment Failure Due to Server Issue**

**Action:**

- Login successfully.
- Select a course and click "Enroll".
- Simulate backend server error.

**Expected Results:**

- Enrollment fails.
- Error message: "Unable to enroll at this moment. Try again later."

**Type:** Error Path

## **Test Suite: TS04 - Quiz System (ID: 204)**

### **TC07 – Take and Submit Quiz Successfully**

**Action:**

- Navigate to an enrolled course.
- Click on "Start Quiz".
- Answer all questions.
- Click "Submit".

**Expected Results:**

- Quiz is submitted.
- Immediate feedback and score are displayed.

**Type:** Happy Path

### **TC08 – Quiz Submission Timeout**

**Action:**

- Start a quiz.
- Wait until the session times out without submitting.

**Expected Results:**

- Quiz auto-submits.
- Message: "Session expired. Auto-submitted."
- Partial feedback shown if applicable.

**Type:** Error Path

## **Test Suite: TS05 - Progress Tracking (ID: 205)**

### **TC09 – Real-Time Progress Updates**

**Action:**

- Start watching a lesson video.
- Mark lesson as completed.

**Expected Results:**

- Progress bar updates instantly.
- Course dashboard reflects updated status.

**Type:** Happy Path

## TC10 – Progress Not Updating Due to Session Expiry

### Action:

- Start a lesson.
- Stay idle until session expires.
- Try to mark lesson as completed.

### Expected Results:

- Action fails.
- Message: "Session expired. Please log in again to continue."

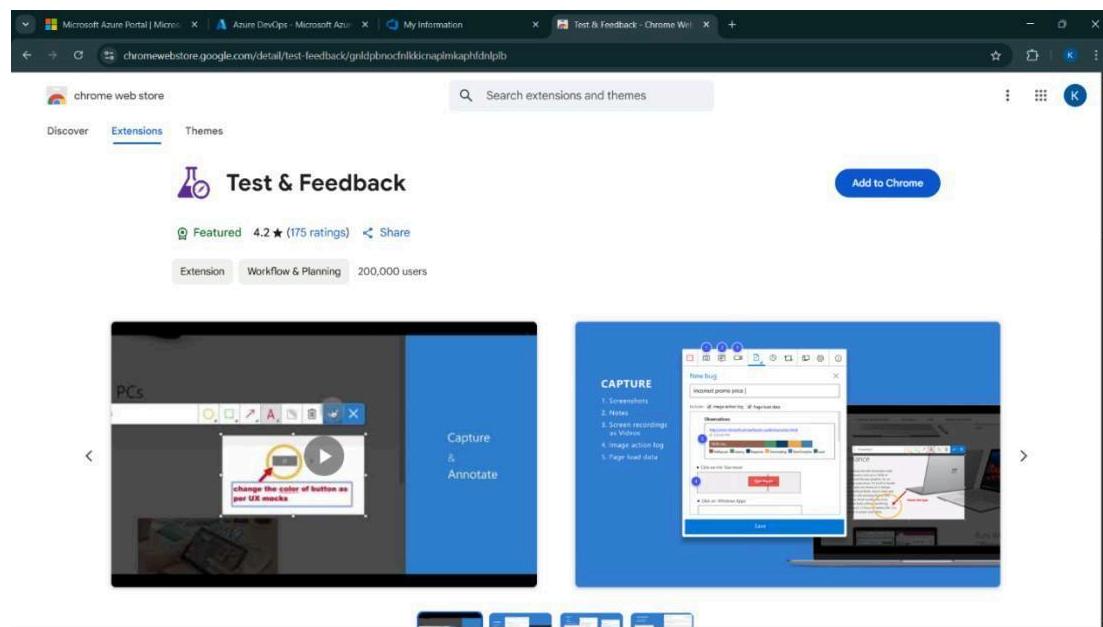
Type: Error Path

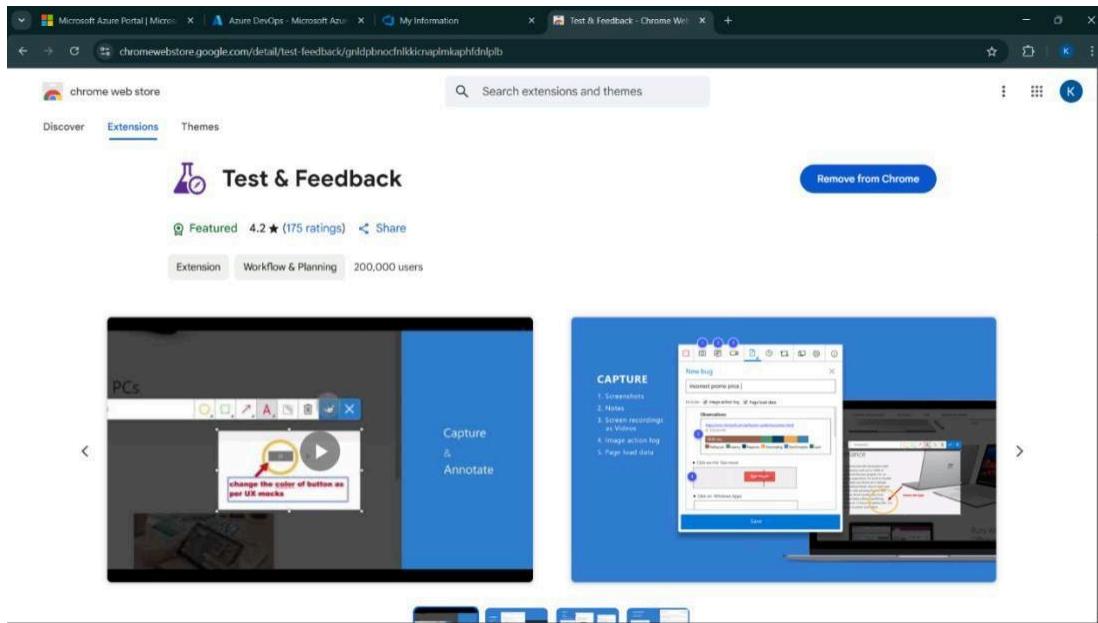
### Test Cases

The screenshot shows a test case configuration window. At the top, there are tabs for 'Steps' (selected), 'Summary', and 'Associated Automation'. The 'Steps' tab displays two steps: 1. 'Disconnect from internet' with the expected result 'Network is offline' and 2. 'Navigate to "My Playlists"' with the expected result 'Error message "Unable to load playlists" is shown'. Below the steps, there is a section for 'Status' with fields for 'Priority' (set to 2) and 'Automation status' (set to 'Not Automated'). On the left side of the window, there is a sidebar with icons for 'Overview', 'Board', 'Repos', 'Pipelines', 'Test Plan', 'Program', 'Params', 'Config', 'Runs', and 'Artifacts'. The 'Test Plan' icon is currently selected. At the bottom of the window, there are buttons for 'Project settings' and 'Run'.

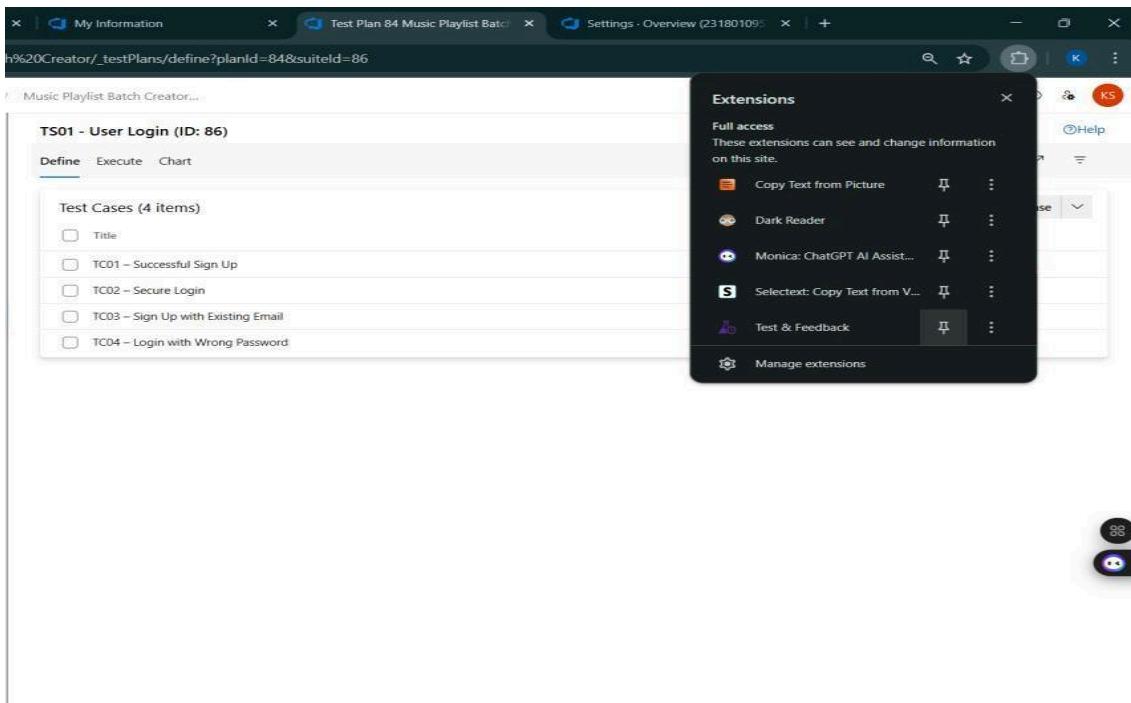
The screenshot shows the Microsoft Azure DevOps Test Plan interface. A test step titled "Log in successfully" is selected, with the expected result being "User is redirected to dashboard". Another step, "Navigate to 'My Playlists' section", is listed below it with the expected result "All created playlists are displayed clearly". The status bar indicates the step is a "Happy Path" and has a priority of 2. The automation status is "Not Automated".

#### 4. Installation of test





Test and feedback  
Showing it as an extension



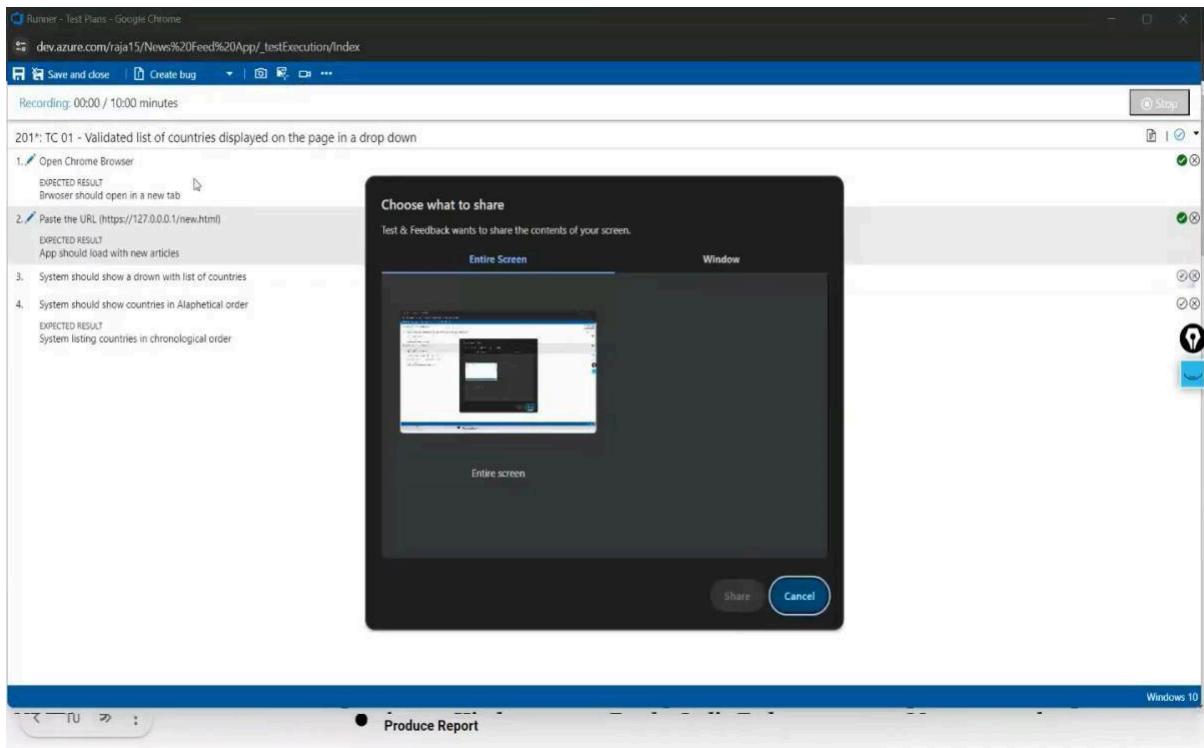
## 5. Running the test cases

Screenshot of the TestRail 'Execute' interface showing two test points: TC05 – View Playlist Page (Passed) and TC06 – Playlist Loading Failure (Pending). A context menu is open for TC05, with options like 'Run' and 'Edit test case'. A 'Run for web application' dropdown is also visible.

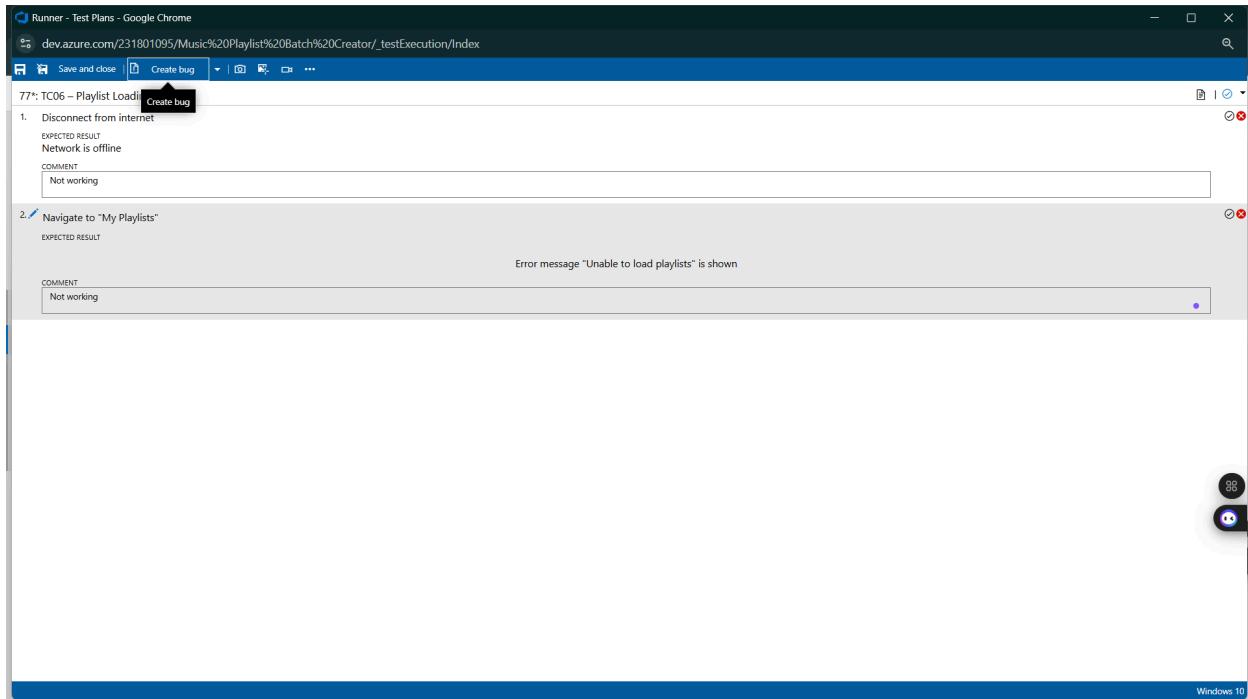
Screenshot of the test execution results. Step 1: Log in successfully (Passed). Step 2: Navigate to "My Playlists" section (Pending). The 'EXPECTED RESULT' for step 2 is "All created playlists are displayed clearly".

Windows 10

## 6.Recording the test case



## 7.Creating the bug



**TB01 - Playlist loading spinner keeps spinning indefinitely on poor network**

**Repro Steps**

**Step no.** **Result** **Title**

- 1.** **Failed** Disconnect from internet  
Expected Result  
Network is offline
- 2.** **Failed** Comments: Page Not loading  
Navigate to "My Playlists"  
Expected Result  
  
Error message "Unable to load playlists" is shown

**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  
77 TC06 - Playlist Loading Failure  
Updated 10-04-2025. ● Design

**System Info**

Found in Build

**System Info**

|   |   |
|---|---|
| Browser - Name                          | Google Chrome 135   |
| Browser - Language                      | en-IN   |
| Browser - Height                        | 864   |
| Browser - Width                         | 1536  |
| Browser - User agent                    | Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/135.0.0.0 Safari/537.36 |
| Operating system - Name                 | Windows NT 10.0; Win64; x64   |
| Operating system - Architecture         | x86_64  |
| Operating system - Processor model      | 11th Gen Intel(R) Core(TM) i3-1115G4 @ 3.00GHz  |
| Operating system - Number of processors | 4   |
| Memory - Available                      | 814784512   |
| Memory - Capacity                       | 8216240128  |
| Display - Pixels per inch (X axis)      | 120   |
| Display - Pixels per inch (Y axis)      | 120   |
| Display - Device pixel ratio            | 1.25  |

**Discussion**

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

**Attachments**

| Name  | Size |
|---|------|
| SystemInformation-2025-04-18T03-23-58.168Z.json | 1K   |

**Project settings**

## 8. Test case results

The screenshot shows a web-based test management interface. On the left, there's a sidebar with tabs like 'Define', 'Execute', and 'Chart'. Below it, a list of 'Test Points (2 items)' is shown, with 'TC05 – View Playlist Page' selected. On the right, a detailed view of 'TC05 – View Playlist Page' is displayed under 'Test Case Results'. This view includes a table with columns for 'Outcome', 'TimeStamp', 'Configuration', 'Run by', and 'Tester'. The table lists several entries, mostly 'Passed' outcomes from different dates and times, with one 'Failed' entry. A link at the bottom of this panel says 'Open execution history for current test point'.

## 9. Test report summary

- Assigning bug to the developer and changing state

The screenshot shows a bug tracking interface in Azure DevOps. The top bar indicates the bug ID is 'BUG 203' and the title is 'BG 01 - Countries Drop down Not Available on the page'. The main area shows a table of steps with their results and titles. Step 1 is 'Passed' with title 'Open Chrome Browser'. Step 2 is 'Passed' with title 'Paste the URL (https://127.0.0.1/new.html)'. Step 3 is 'Failed' with title 'System should show a dropdown with list of countries'. The 'Planning' and 'Deployment' sections on the right provide additional details about the work item, including its status, priority, and severity.

**Repro Steps**

**18-04-2025 03:23** Bug filed on "TC06 – Playlist Loading Failure"

| Step no. | Result | Title  |
|----------|--------|--|
| 1.       | Failed | Disconnect from internet<br>Expected Result<br>Network is offline  |
| 2.       | Failed | Comments: Page Not loading<br>Navigate to "My Playlists"<br>Expected Result<br><br>Error message "Unable to load playlists" is shown |

**Test Configuration:** Windows 10

**Planning**

Resolved Reason: Story Points

Priority: 2  
Severity: 3 - Medium

**Deployment**

To track releases associated with this work item, go to 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.

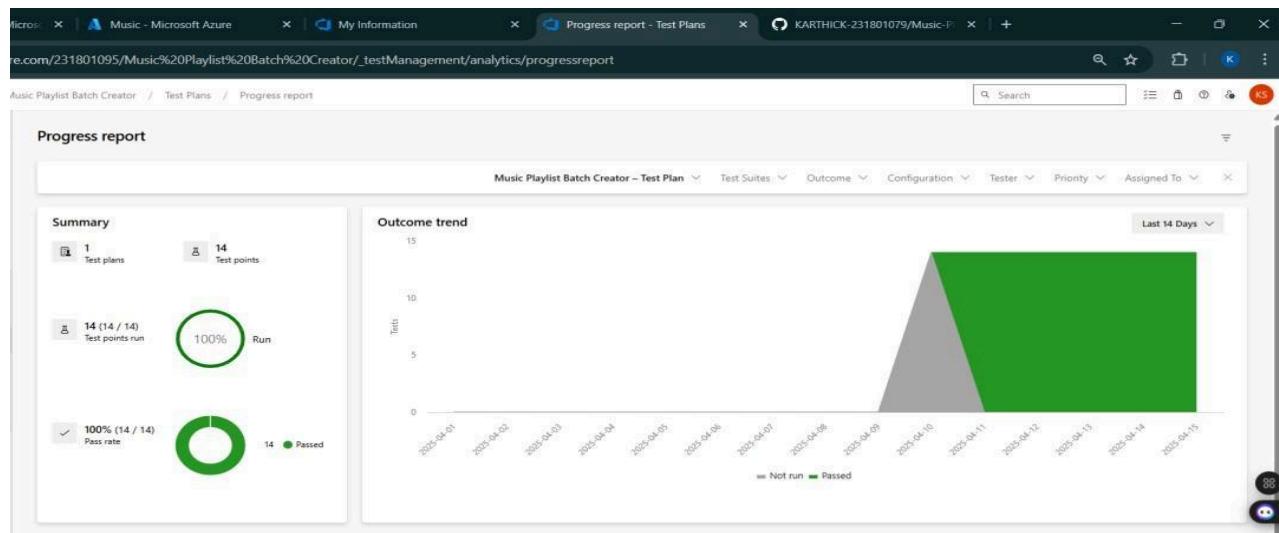
**Related Work**

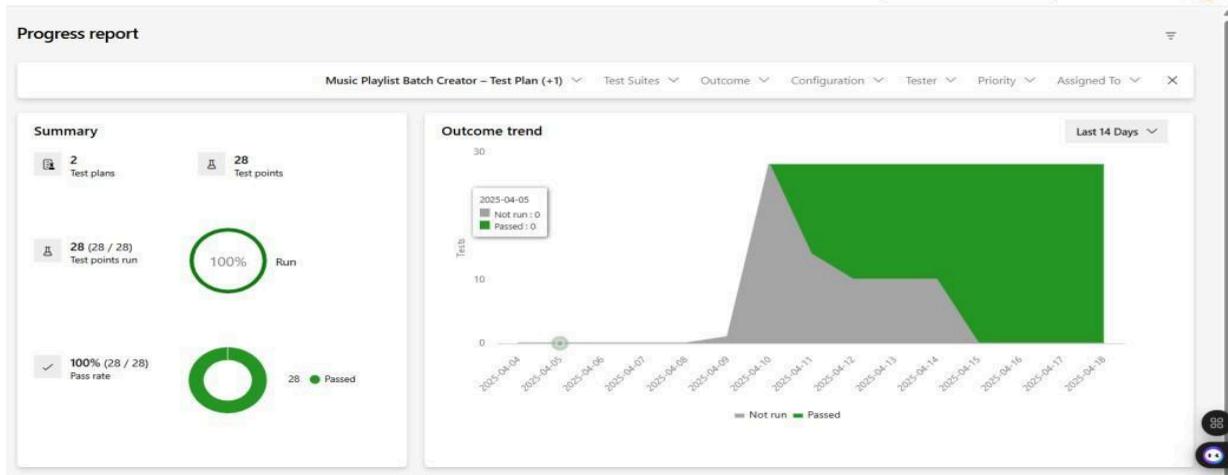
+ Add link  
Add an existing work item as a parent

Tested By: 77 TC06 – Playlist Loading Failure  
Updated 10-04-2025, ● Design

**System Info**

## 10. Progress report





## 11. Changing the test template

Microsoft Azure Portal | Microsoft | Azure DevOps - Microsoft | My Information | Test Plan 84 Music Playlist | Settings - Process (231801095) | Settings - Overview (231801095) | +

dev.azure.com/231801095/\_settings/process

Azure DevOps 231801095 / Settings / Process

All processes

Processes Fields

Help Filter by process name

| Name  | Description   | Team projects |
|-------|---|---------------|
| Basic | This template is flexible for any process and great for teams getting started with Azure DevOps.                    | 0             |
| Agile | This template is flexible and will work great for most teams using Agile planning methods, including those pract... | 0             |
| Scrum | This template is for teams who follow the Scrum framework.  | 0             |
| CMMI  | This template is for more formal projects requiring a framework for process improvement and an auditable reco...    | 0             |

Organization Settings 231801095

General

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

Security

- Security overview
- Policies
- Permissions

Boards

- Process

Pipelines

- Agent pools
- Settings
- Deployment pools

Screenshot of the Azure DevOps Settings - Process page (dev.azure.com/231801095/\_settings/process). The page displays a list of available process templates:

| Name  | Description   | Team projects |
|-------|---|---------------|
| Basic | This template is flexible for any process and great for teams getting started with Azure DevOps.                    | 0             |
| Agile | This template is flexible and will work great for most teams using Agile planning methods, including those pract... | 0             |
| Scrum | This template is for teams who follow the Scrum framework.  | 0             |
| CMMI  | This template is for more formal projects requiring a framework for process improvement and an auditable reco...    | 0             |

Screenshot of the Azure DevOps Settings - Process page (dev.azure.com/231801095/\_settings/process) after creating a new Agile process template named "231801095 Agile (default)". The table now includes this new entry:

| Name                      | Description   | Team projects |
|---------------------------|---|---------------|
| Basic                     | This template is flexible for any process and great for teams getting started with Azure DevOps.                    | 0             |
| Agile                     | This template is flexible and will work great for most teams using Agile planning methods, including those pract... | 0             |
| 231801095 Agile (default) |   | 1             |
| Agile Plus                |   | 0             |
| Scrum                     | This template is for teams who follow the Scrum framework.  | 0             |
| CMMI                      | This template is for more formal projects requiring a framework for process improvement and an auditable reco...    | 0             |

## 12. View the new test case template

The screenshot shows the 'Add a field to Test Case' dialog box over a background of the Azure DevOps settings interface. The dialog has tabs for 'Definition', 'Options', and 'Layout'. Under 'Definition', the 'Create a field' option is selected, with 'Name' set to 'Type' and 'Type' set to 'Text (single line)'. The 'Layout' tab shows 'Acceptance Criteria' assigned to the 'Field' column. A large 'Add a field ...' area is visible on the right.

The screenshot shows the 'Work item types' section of the Azure DevOps settings. It lists a single work item type: 'Music Playlist Batch Creator'. The 'Description' field contains the text: 'The Azure Music Playlist Batch Creator is a cloud-based solution designed for bulk playlist creation and management. Levera...'. The 'General' sidebar on the left is expanded, showing various settings like Overview, Projects, and Security.

The screenshot shows the Azure DevOps Settings - Process page. The URL is [dev.azure.com/231801095/\\_settings/process?type-id=231801095Agile.TestCase&process-name=231801095%20Agile&\\_a=layout](https://dev.azure.com/231801095/_settings/process?type-id=231801095Agile.TestCase&process-name=231801095%20Agile&_a=layout). The page title is "All processes > 231801095 Agile > Test Case". On the left, there is a sidebar with sections like General, Security, Boards, Pipelines, etc., and the "Process" tab is selected. In the main area, there are tabs for "Steps", "Summary", and "Associated Aut...". A "Custom" section is visible on the right, showing fields for "Recent test results", "Deployment", "Development", "Related Work", and "Status". A "Steps" field is currently being edited, with a tooltip indicating it is a "Text (multiple lines)" type.

## 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>LOAD TESTING AND PERFORMANCE TESTING</b> |
|------------------|---|

**Aim:**

To create an Azure Load Testing resource and run a load test to evaluate the performance of a target endpoint.

**Load Testing**

**Steps to Create an Azure Load Testing Resource:**

Before you run your first test, you need to create the Azure Load Testing resource:

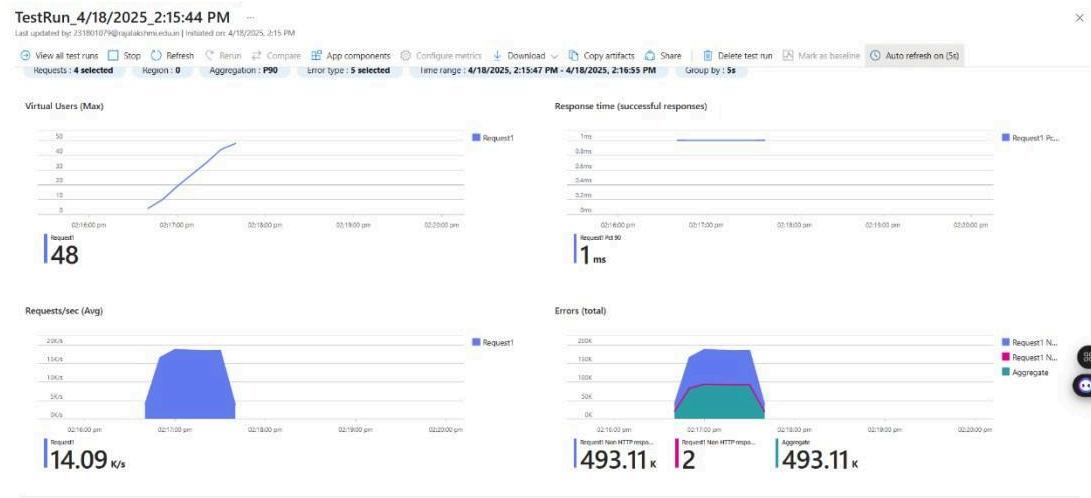
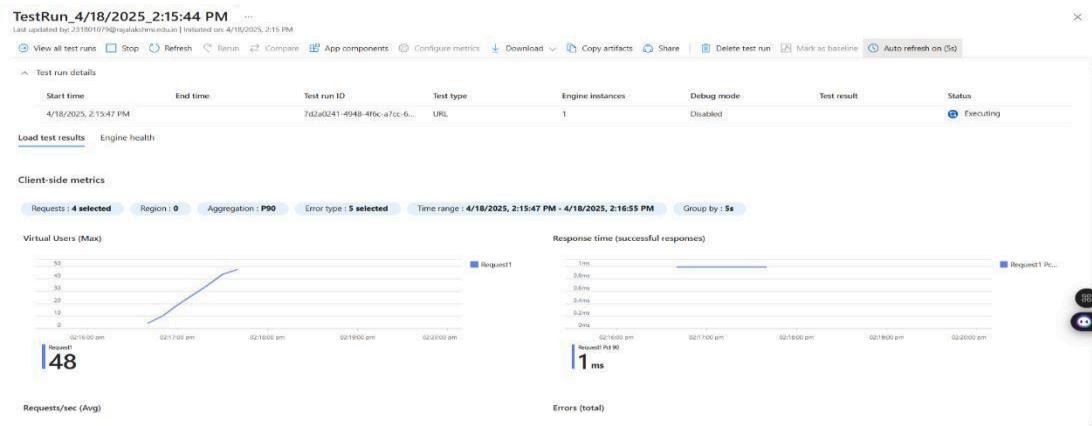
1. Sign in to Azure Portal  
Go to <https://portal.azure.com> and log in.
2. Create the Resource
  - o Go to *Create a resource* → Search for “Azure Load Testing”.
  - o Select Azure Load Testing and click Create.
3. Fill in the Configuration Details
  - o *Subscription*: Choose your Azure subscription.
  - o *Resource Group*: Create new or select an existing one.
  - o *Name*: Provide a unique name (no special characters).
  - o *Location*: Choose the region for hosting the resource.
4. (Optional) Configure tags for categorization and billing.
5. Click Review + Create, then Create.
6. Once deployment is complete, click Go to resource.

**Steps to Create and Run a Load Test:**

Once your resource is ready:

1. Go to your Azure Load Testing resource and click Add HTTP requests > Create. In
2. Basics Tab
  - o *Test Name*: Provide a unique name.
  - o *Description*: (Optional) Add test purpose.
  - o *Run After Creation*: Keep checked.
3. Load Settings
  - o *Test URL*: Enter the target endpoint (e.g., <https://yourapi.com/products>).
4. Click Review + Create → Create to start the test.

## Load Testing



Welcome, kishore.292006@gmail.com

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Intro to Full Stack Development

[Access Course](#)

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This courses is intende for CSE/ECE undergrads for embedded systems.

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Operating system Fundamentals

This course id designed for basic OS concepts scheduling, RTOS and working in linux environment

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[Logout](#)



**Result:**

Successfully created the Azure Load Testing resource and executed a load test to assess the performance of the specified endpoint.

**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 E-learning platform project.

### **GitHub Project Structure**

The screenshot shows a GitHub repository page for 'Education-platform' owned by 'Giridharan-D29'. The repository is public and contains 7 commits. The commit history shows files like 'static/images', 'templates', 'Procfile', 'README.md', 'app.py', 'requirements.txt', and 'vercel.json' being added. The 'Code' tab is selected, showing the main branch. The repository has 1 branch and 0 tags. The 'About' section indicates no description, website, or topics provided. It shows 0 stars, 1 watching, and 0 forks. There are sections for 'Releases' (no releases published), 'Packages' (no packages published), and 'Languages' (a progress bar indicating language distribution).

### **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.