

RAJALAKSHMI ENGINEERING COLLEGE
RAJALAKSHMI NAGAR, THANDALAM – 602 105



**RAJALAKSHMI
ENGINEERING COLLEGE**
An AUTONOMOUS Institution
Affiliated to ANNA UNIVERSITY, Chennai

(REGULATION 2023)

**CS23432
Software Construction**

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE
LABORATORY RECORD NOTEBOOK**

MS ARULOLI

Name :

2nd/AIML/FA

Year / Branch / Section :

Register No. : 2116-231501020

Semester : 4th Semester

Academic Year : 2024-2025



RAJALAKSHMI ENGINEERING COLLEGE (AUTONOMOUS)
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BONAFIDE CERTIFICATE

NAME MS ARULOLI REGISTER NO. 2116-231501020

ACADEMIC YEAR 2024-25 SEMESTER- IV BRANCH: AIML-B.Tech

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

INDEX

Name: MS ARULOLI Branch: AIML Sec: FA Roll no: 231501020

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231501020

CS23432

EXP NO: 1
DATE:

AZURE DEVOPS ENVIRONMENT SETUP

Aim:

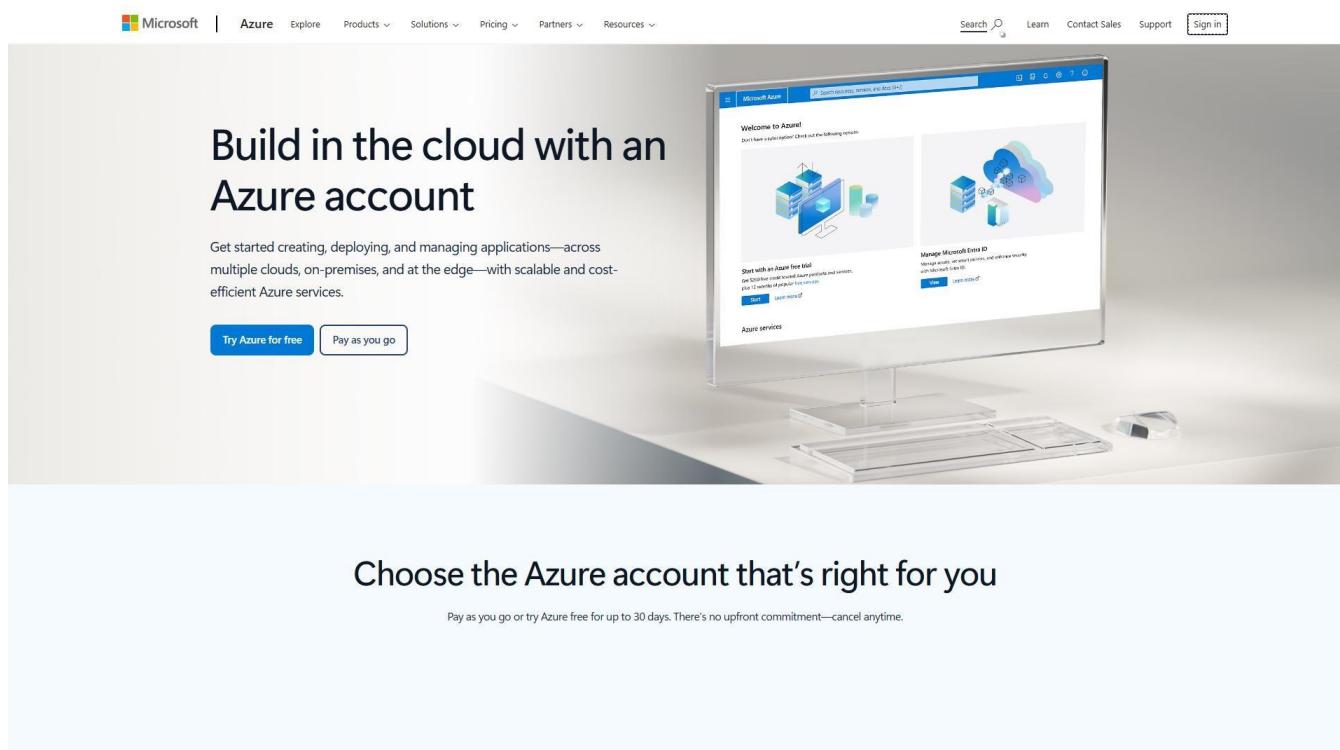
To set up and access the Azure DevOps environment by creating an organization through the Azure portal.

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>



The screenshot shows the Microsoft Azure homepage. At the top, there's a navigation bar with links for Azure, Explore, Products, Solutions, Pricing, Partners, and Resources. On the right side of the header are buttons for Search, Learn, Contact Sales, Support, and Sign in. The main content area features a large banner with the text "Build in the cloud with an Azure account". Below the banner, there's a section for "Try Azure for free" and "Pay as you go". A central image shows a computer monitor displaying the "Welcome to Azure" screen, which includes options like "Start with an Azure free trial", "Manage Microsoft Entra ID", and "Azure services". The overall theme is the promotion of Azure services and the ease of getting started with them.

2. Azure home page

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. At the top, there's a navigation bar with icons for search, Copilot, notifications, and user profile. Below the bar, the "Azure services" section features a "Create a resource" button and icons for Azure DevOps organizations, App Services, App Service Domains, SSH keys, Virtual machines, Subscriptions (which is highlighted with a yellow box), All resources, Azure AI services, and More services. The "Resources" section shows a table of recent resources, with one entry for "Azure for Students" listed as a Subscription type viewed 3 months ago. The "Navigate" section includes links for Subscriptions, Resource groups, All resources, and Dashboard. The "Tools" section lists Microsoft Learn, Azure Monitor, Microsoft Defender for Cloud, and Cost Management. The "Useful links" section contains links for Azure mobile app and other Azure services. The overall interface is clean and modern, designed for managing cloud resources.

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

The screenshot shows the Azure DevOps Organization Home page. At the top, there's a message about managing billing and subscriptions. Below it, the "Azure DevOps" logo is displayed, followed by a sub-headline: "Plan smarter, collaborate better, and ship faster with a set of modern dev services". A "My Azure DevOps Organizations" link is present. The main content area features a large, colorful illustration of people working on a rocket launching from a base of code and data, symbolizing the power of DevOps. The illustration includes various icons like servers, databases, and user profiles. At the bottom, there are links for "Get started using Azure DevOps", "Give feedback", and "Tell us about your experience with the Azure DevOps page".

Result:

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

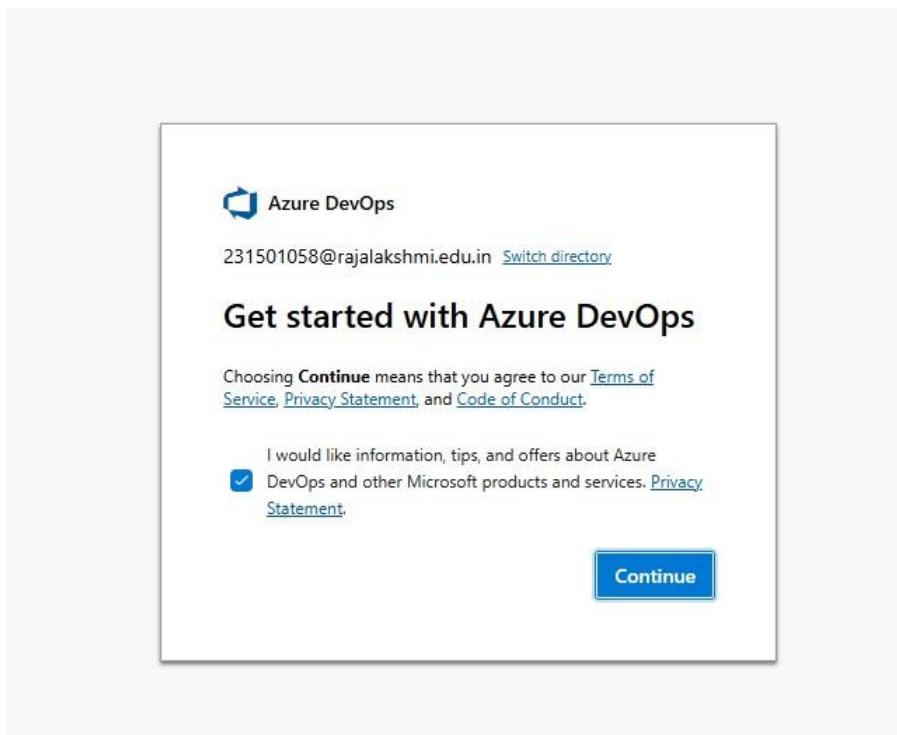
EXP NO: 2

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 new project

X

Project name *

Evaluation of Academic Performance

Description

Evaluation of academic performance is the systematic assessment of a student's learning progress and educational achievement over a specific period. It involves measuring various aspects such as grades, attendance, participation, assignments, projects, and examination results. The goal is to understand a student's strengths and weaknesses, ensure they meet learning objectives, and guide further academic development. Effective evaluation not only reflects individual student growth but also helps educators improve teaching strategies and curriculum design to enhance overall educational quality.

Visibility



Public

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



Private

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

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

▼ Advanced

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 the Azure DevOps Organizations interface. On the left, there's a circular profile picture with 'AN' in the center, followed by the user's name 'Avishikar Kannan N' and email '231501029@rajalakshmi.edu.in'. Below this is a dropdown menu set to 'Microsoft account' with 'India' selected. To the right, the 'Azure DevOps Organizations' page lists several projects under 'Society': 'dev.azure.com/2315010290885' (Owner), 'dev.azure.com/2315010290957' (Owner), 'dev.azure.com/avi12346566' (Owner), and 'dev.azure.com/231501055' (Member). A 'Create new organization' button is at the top right.

4. Project dashboard

The screenshot shows the Azure DevOps project dashboard for 'Evaluation of Academic Performance'. The left sidebar includes links for Overview, Summary, Dashboards, Wiki, Boards, Repos, Pipelines, Test Plans, Artifacts, and Project settings. The main content area displays the project title 'Evaluation of Academic Performance' and an 'About this project' section with a bulleted list of features: Student Performance Tracking, Progress and Analytics, Performance Prediction, Feedback and Evaluation Tools, and Admin Controls. To the right, there are sections for 'Project stats' (1 work item) and 'Members' (AN, GB, DK).

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 interface for managing work items. The left sidebar is titled 'Evaluation of Academic...' and includes options like Overview, Boards, Work items, Boards, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, Artifacts, and Project settings. The 'Work items' section is currently selected. The main area is titled 'Work items' and shows a table of user stories. The columns are ID, Title, Assigned To, State, Area Path, and Tags. One row is highlighted for 'Bug 2'. Other rows include 'Bug Finding', 'Major CGPA Compliance Check', 'CGPA Threshold Checker for Overall CGPA', 'Performance Bug', 'Performance Evaluation Test', 'Test 1', 'Program Dismissal Automation', 'Academic Probation Trigger', and 'Academic Warning Assignment'. The 'Area Path' column shows 'Evaluation of Academic Perfor...' for most items.

ID	Title	Assigned To	State	Area Path	Tags
47	Bug 2	Unassigned	New	Evaluation of Academic Perfor...	
46	Bug Finding	Gunavazhagan B	Design	Evaluation of Academic Perfor...	
44	Bug Finding	Avishikar Kannan N	Active	Evaluation of Academic Perfor...	
45	Bug Finding	Unassigned	New	Evaluation of Academic Perfor...	
43	Bug Finding	Gunavazhagan B	Design	Evaluation of Academic Perfor...	
9	Major CGPA Compliance Check	Gunavazhagan B	Active	Evaluation of Academic Perfor...	
6	CGPA Threshold Checker for Overall CGPA	Gunavazhagan B	Active	Evaluation of Academic Perfor...	
42	Performance Bug	Unassigned	New	Evaluation of Academic Perfor...	
41	Performance Evaluation Test	Gunavazhagan B	Design	Evaluation of Academic Perfor...	
40	Test 1	Gunavazhagan B	Design	Evaluation of Academic Perfor...	
31	Program Dismissal Automation	Unassigned	New	Evaluation of Academic Perfor...	
28	Academic Probation Trigger	Unassigned	New	Evaluation of Academic Perfor...	
24	Academic Warning Assignment	Unassigned	New	Evaluation of Academic Perfor...	

Result:

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

EXP NO: 3

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

Aim:

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

Create Epic, Features, User Stories, Task

The screenshot shows a backlog board titled "Evaluation of Academic Performance Team". It displays three work items: an Epic named "Academic Performance Evaluation Process", a Feature named "Course Grade Evaluation Engine", and a Task named "Grade Comparison Logic". The Epic has a priority of 14, effort of 1, and business value of 1. The Feature has a priority of 1, effort of 1, and business value of 1. The Task has a priority of 1, effort of 1, and business value of 1. The board also includes columns for Order, Work Item Type, Title, State, Effort, Business Value, and Value.

1. Fill in Epics

The screenshot shows the details of an epic work item titled "Academic Performance Evaluation Process". The epic is active and was created by Avishikar Kannan N. It is associated with the "Evaluation of Academic Performance" area and iteration. The epic covers the development of an annual academic performance evaluation system that checks the student's CGPA metrics against the required benchmarks set by their degree program. The epic has a priority of 1, effort of 14, and business value of 1. The deployment section indicates that releases can be tracked via Azure Boards. The development section provides instructions for linking to Azure Repos. The related work section lists a feature work item titled "Course Grade Evaluation Engine".

2. Fill in Features

The screenshot shows the 'Create Feature' page in Azure DevOps. The feature is titled 'Course Grade Evaluation Engine' (ID 3) and is assigned to 'Gunavazhagan B'. It has a status of 'New' and is linked to the 'Evaluation of Academic Performance' area and iteration. The 'Description' section contains the following text: 'Enable detailed evaluation of individual course grades as part of the overall academic performance process.' The 'Planning' section includes fields for Priority (set to 2), Risk, and Effort. The 'Deployment' section provides instructions on tracking releases. The 'Development' section includes an 'Add link' button and a note about linking to Azure Repos. The 'Related Work' section includes an 'Add link' button and a note about adding existing work items.

3. Fill in User Story Details

The screenshot shows the 'Create User Story' page in Azure DevOps. The user story is titled 'Core Course Grade Validator' (ID 6) and is assigned to 'No one selected'. It has a status of 'New' and is linked to the 'Evaluation of Academic Performance' area and iteration. The 'Description' section contains the following text: 'As an evaluator, I want to validate core course grades to ensure students meet minimum pass criteria so that academic eligibility is ensured.' The 'Acceptance Criteria' section lists three points: 1. System retrieves the list of core courses. 2. Compares the grades to the minimum requirement. 3. Flags any deficiencies. The 'Classification' section includes fields for Value area (set to Business). The 'Planning' section includes fields for Story Points, Priority (set to 2), and Risk. The 'Deployment' section provides instructions on tracking releases. The 'Development' section includes an 'Add link' button and a note about linking to Azure Repos. The 'Related Work' section includes an 'Add link' button and a note about adding existing work items.

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 Academic Performance Evaluation Project.

Sprint Planning

Sprint 1

The screenshot shows a taskboard interface for the 'Evaluation of Academic Performance Team'. The interface includes navigation tabs for Taskboard, Backlog, Capacity, and Analytics. It features filters for Iteration 1 and Person: All. The main area displays two user stories in a grid:

	New	Active
6 CGPA Threshold Checker for Overall CGPA	Active	Gunavazhagan B
9 Major CGPA Compliance Check	Active	Gunavazhagan B

Sprint 2

The screenshot shows a taskboard interface for the 'Evaluation of Academic Performance Team' for Sprint 2. The interface includes navigation tabs for Taskboard, Backlog, Capacity, and Analytics. It features filters for Iteration 2 and Person: All. The main area displays two user stories in a grid:

	New	Active	Resolved
13 Core Course Grade Validator	New	Unassigned	
16 Elective Course Grade Validator	New	Unassigned	

Sprint 3

⌚ Evaluation of Academic Performance Team ⌚ ☆ 8%

Taskboard Backlog Capacity Analytics

Iteration 3 ▼ Person: All ▼

▲ Collapse all	New	Active
▼ 21 Assign Good Standing Status ● New ○ Unassigned		
▼ 24 Academic Warning Assignment ● New ○ Unassigned		

Sprint 4

⌚ Evaluation of Academic Performance Team ⌚ ☆ 8%

Taskboard Backlog Capacity Analytics

Iteration 4 ▼ Person: All ▼

▲ Collapse all	New	Active
▼ Unparented	45 Bug Finding ● New ○ Unassigned	
▼ 28 Academic Probation Trigger ● New ○ Unassigned		
▼ 31 Program Dismissal Automation ● New ○ Unassigned		

Result:

The Sprints are created for SMS/MMS Sending Project.

EXP NO: 5

POKER ESTIMATION

Aim:

Create Poker Estimation for the user stories Academic Performance Evaluation Project.

Poker Estimation

USER STORY 6

6 CGPA Threshold Checker for Overall CGPA

GB Gunavazhagan B 0 Comments Add Tag

State Active Area Evaluation of Academic Performance
Reason Implementation started Iteration Evaluation of Academic Performance\Iteration 1

Description	Planning
<p>As a system administrator, I want to compare a student's Overall CGPA against the required threshold, so that I can determine if the student meets academic standards.</p>	<p>Story Points 8</p> <p>Priority 1</p> <p>Risk 1 - High</p>

Acceptance Criteria	Classification
<ol style="list-style-type: none">1. The system should fetch and validate the student's Overall CGPA.2. The threshold should be retrieved based on the degree program.3. The result should indicate Pass or Fail.	<p>Value area Business</p>

Result:

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

EXP NO: 6

DESIGNING CLASS AND SEQUENCE DIAGRAMS FOR PROJECT ARCHITECTURE

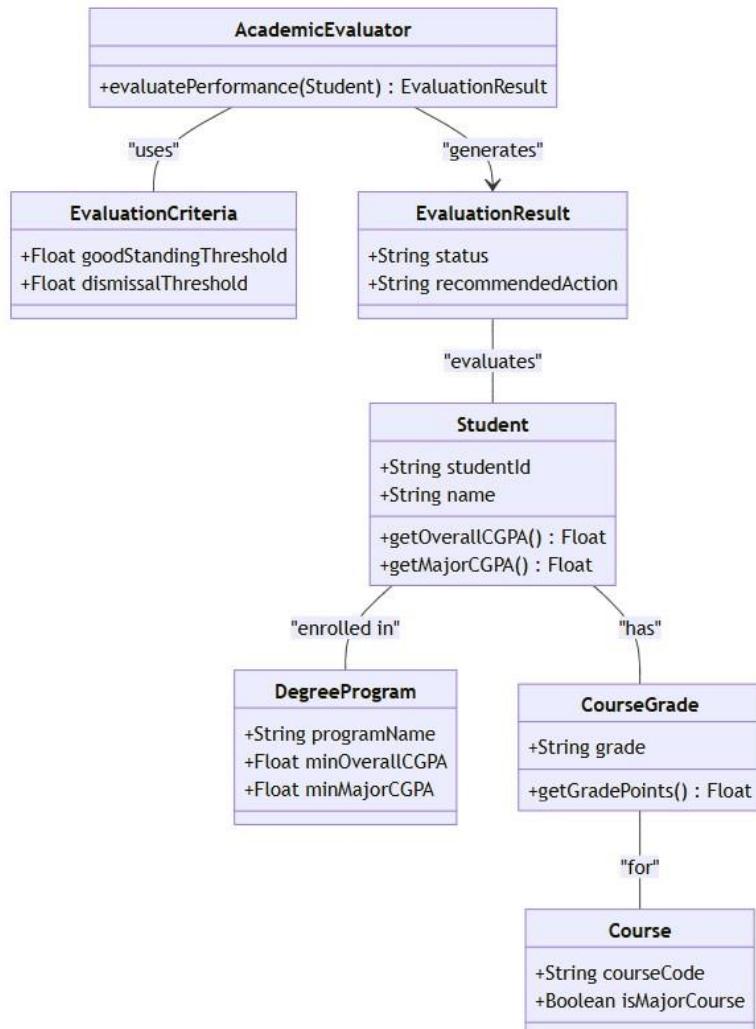
Aim:

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

6A. Class Diagram

Class Diagram

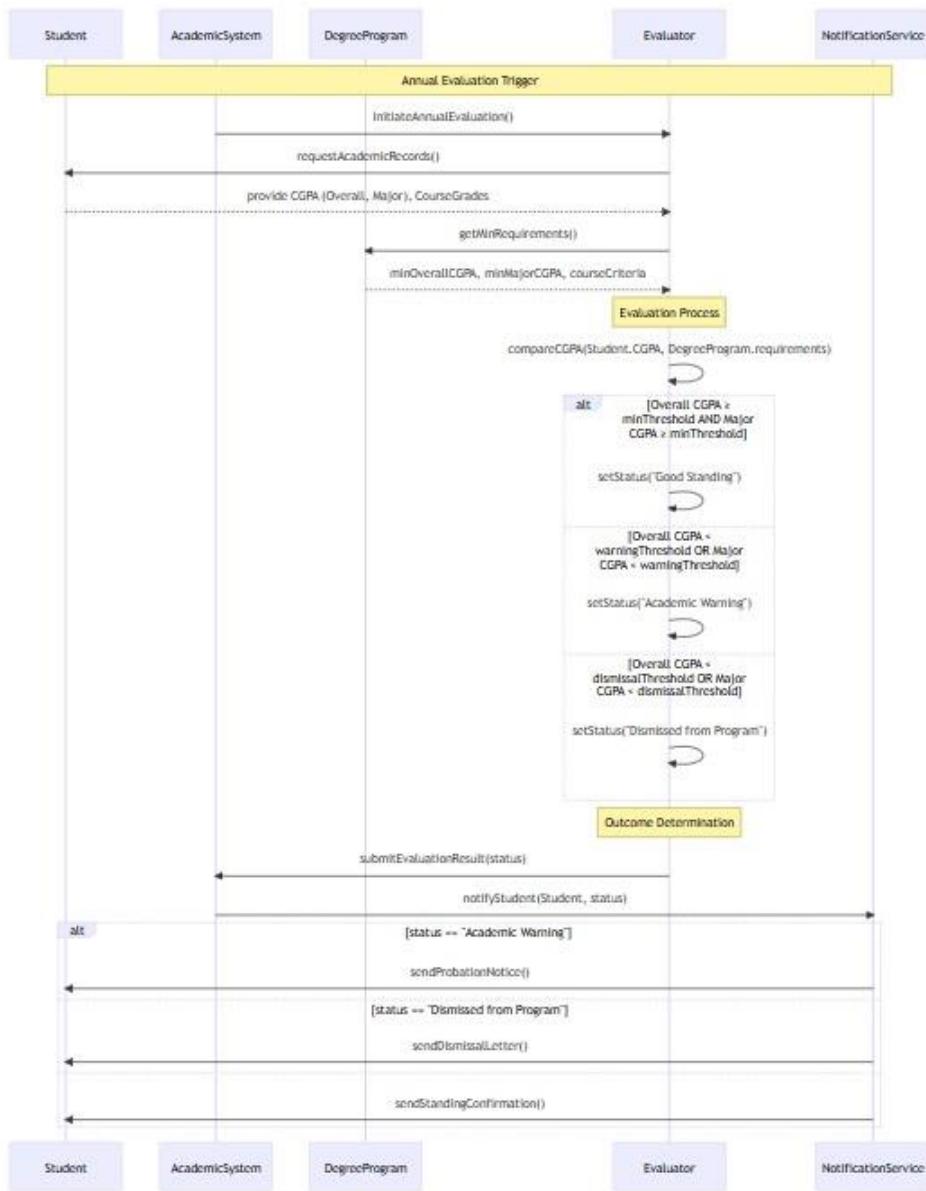
Gunavazhagan B Yesterday



6B. Sequence Diagram

Sequence Diagram

● Gurwinderpal S - Yesterday



Result:

The Class Diagram and Sequence Diagram is designed Successfully for the SMS/MMS Sending Project

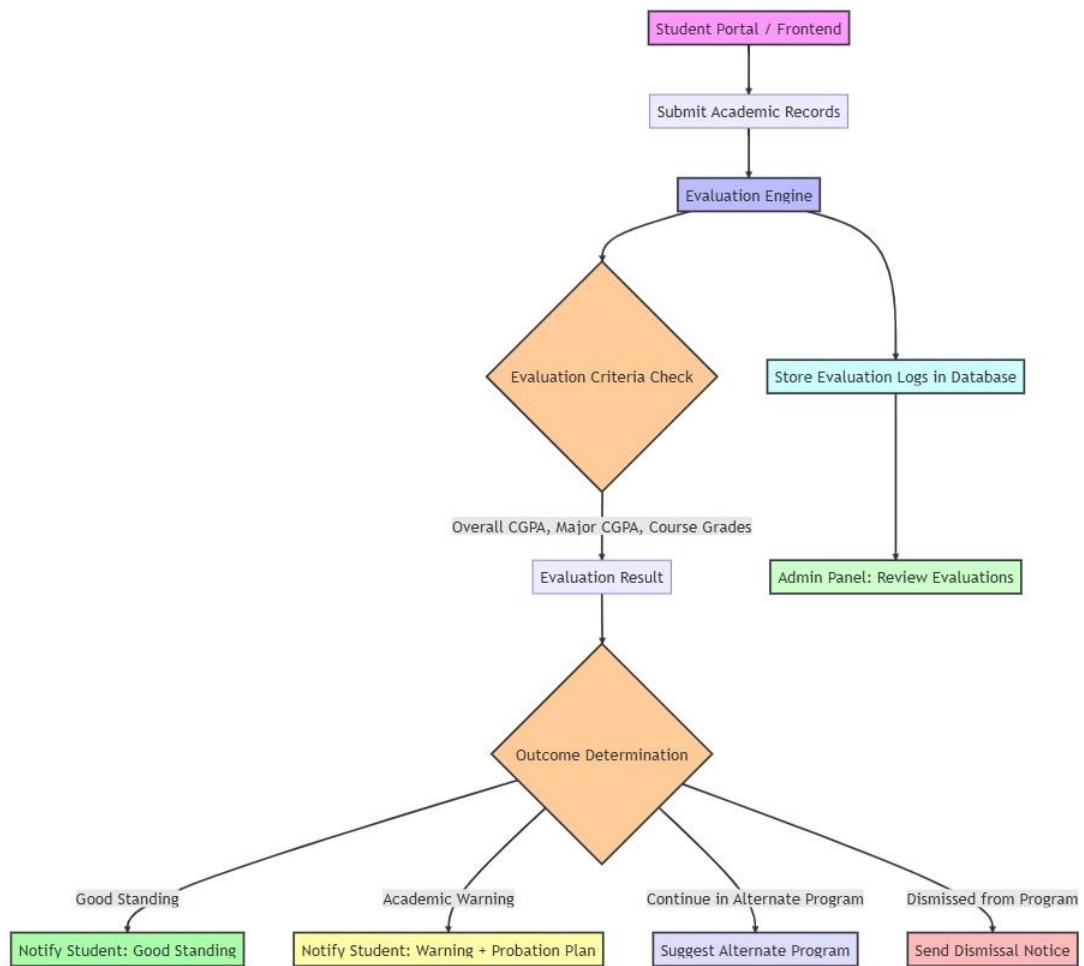
Aim:

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

7A. Architectural Diagram

Architecture Diagram

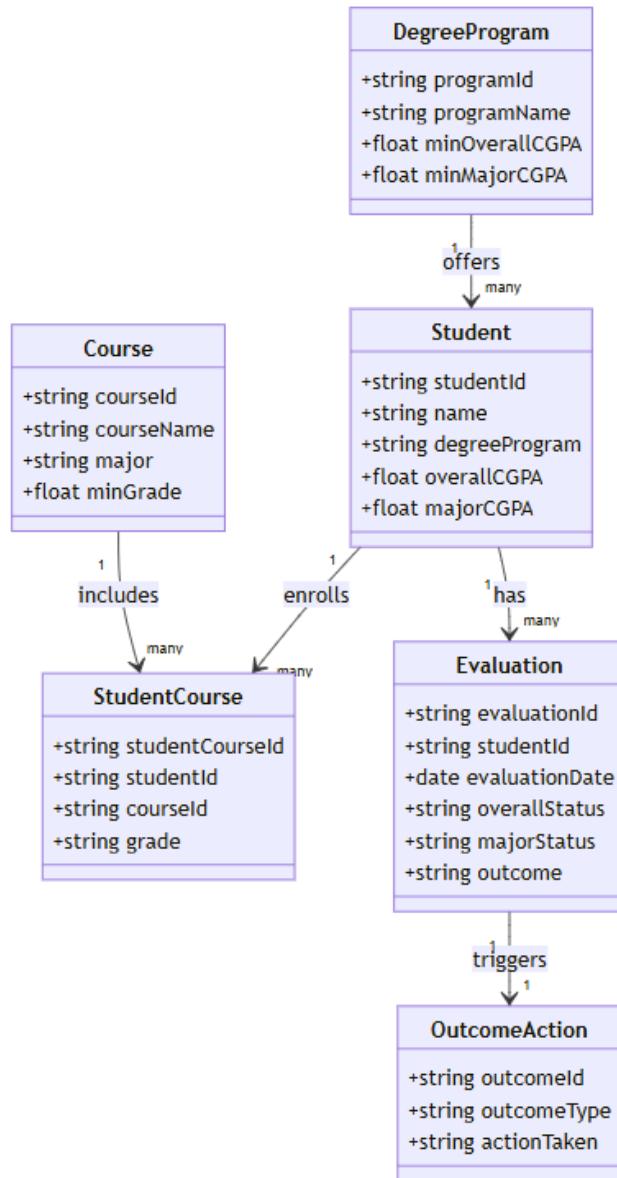
Dilip Kannan K · Saturday



7B.ER Diagram

Entity Relationship Diagram

Dilip Kannan K Saturday



Result:

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

EXP NO: 8	TESTING – TEST PLANS AND TEST CASES
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Aim:

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

SMS/Text Messaging Service - Test Plans

Here's the test plan, incorporating your user stories and providing a structure for testing in Azure DevOps:

USER STORIES

- As an academic administrator, I want the system to automatically evaluate student CGPAs against program requirements (ID: APE01).
- Administrators should see evaluation results (Good Standing, Warning, Probation, Dismissal) for each student (ID: APE02).
- Students and advisors receive notifications when academic status changes (ID: APE03).
- The system should enforce minimum CGPA requirements (e.g., 2.0 for Good Standing) (ID: APE04).
- Users can view Major CGPA separately from Overall CGPA (ID: APE05).
- Advisors can create academic improvement plans for at-risk students (ID: APE06).
- The system should track completion of academic improvement plan requirements (ID: APE07).
- Administrators can override automatic status determinations in special cases (ID: APE08).
- The system should generate reports of students in each academic status category (ID: APE09).
- The system should support different evaluation criteria by degree program (ID: APE10).

Test Suites**Test Suite Organization in Azure DevOps:**

- **TS01 - CGPA Evaluation Process** (ID: 201)
- **TS02 - Course Performance Analysis** (ID: 202)
- **TS03 - Academic Status Determination** (ID: 203)
- **TS04 - Status-Based Interventions** (ID: 204)
- **TS05 - Threshold Configuration** (ID: 205)
- **TS06 - Rules Transparency** (ID: 206)

Test Cases

Test Suite: TS01 - CGPA Evaluation Process (ID: 201)

1. **TC01 - Successful Annual CGPA Evaluation** (ID: 301)

- **Action:**

1. Configure system for annual evaluation
 2. Load test data for 500 students
 3. Trigger annual evaluation process
 4. Check evaluation results
- **Expected Results:**
 1. Process completes within 15 minutes
 2. All 500 students are evaluated
 3. Correct status assigned based on CGPAs
 4. Evaluation timestamp recorded
 - **Type:** Happy Path

2. **TC02 - Evaluation with Missing Data (ID: 302)**

- **Action:**
 1. Create test student with missing CGPA data
 2. Trigger evaluation process
 3. Check system response
- **Expected Results:**
 1. System flags incomplete records
 2. Evaluation continues for other students
 3. Error log created for missing data
- **Type:** Error Path

Test Suite: TS02 - Course Performance Analysis (ID: 202)

1. **TC03 - Core Course Failure Detection (ID: 303)**

- **Action:**
 1. Create test student with failing core course grade
 2. Run course performance analysis
 3. Check alert generation
- **Expected Results:**
 1. System detects core course failure
 2. Advisor alert generated within 1 hour
 3. Student record updated with failure flag

- **Type:** Happy Path

2. **TC04 - Prerequisite Validation (ID: 304)**

- **Action:**

1. Attempt to register student for course without prerequisites
2. Check system response

- **Expected Results:**

1. Registration blocked
2. Clear error message displayed
3. Missing prerequisites listed

- **Type:** Error Path

Test Suite: TS03 - Academic Status Determination (ID: 203)

1. **TC05 - Automatic Probation Assignment (ID: 305)**

- **Action:**

1. Create test student with CGPA below probation threshold
2. Trigger status determination
3. Check status assignment

- **Expected Results:**

1. Probation status assigned within 5 minutes
2. Probation letter generated
3. Advisor notified

- **Type:** Happy Path

2. **TC06 - Status Override Process (ID: 306)**

- **Action:**

1. Attempt status override without proper authorization
2. Check system response

- **Expected Results:**

1. Override attempt rejected
2. Security alert generated
3. Audit log entry created

- **Type:** Error Path

Test Suite: TS04 - Status-Based Interventions (ID: 204)

1. **TC07 - Probation Workflow Execution** (ID: 307)

o **Action:**

1. Assign probation status to test student
2. Monitor automated workflow

o **Expected Results:**

1. All probation steps completed within 24 hours
2. Mandatory advising session scheduled
3. Student notification sent

o **Type:** Happy Path

2. **TC08 - Dismissal Case Creation** (ID: 308)

o **Action:**

1. Create test student meeting dismissal criteria
2. Trigger evaluation process

o **Expected Results:**

1. Dismissal case file created
2. Registrar notified
3. Appeal process documented

o **Type:** Happy Path

Test Suite: TS05 - Threshold Configuration (ID: 205)

1. **TC09 - CGPA Threshold Update** (ID: 309)

o **Action:**

1. Log in as administrator
2. Update program CGPA threshold
3. Verify change persistence

o **Expected Results:**

1. Change saved successfully
2. Version history updated
3. Affected users notified

o **Type:** Happy Path

2. **TC10 - Invalid Threshold Entry** (ID: 310)

o **Action:**

1. Attempt to set CGPA threshold above 4.0
2. Check system response

o **Expected Results:**

1. Change rejected
2. Validation error displayed
3. No change to existing threshold

o **Type:** Error Path

Test Suite: TS06 - Rules Transparency (ID: 206)

1. **TC11 - Student Requirements Display** (ID: 311)

o **Action:**

1. Log in as test student
2. Access academic requirements view

o **Expected Results:**

1. All program requirements displayed clearly
2. Current standing shown accurately
3. Mobile-responsive display

o **Type:** Happy Path

2. **TC12 - Advisor Policy Access** (ID: 312)

o **Action:**

1. Log in as advisor
2. Search for academic policy

o **Expected Results:**

1. Relevant policy documents returned
2. Search results within 2 seconds
3. Complete policy text available

o **Type:** Happy Path

Test Cases

The screenshot shows the Azure DevOps interface for the 'Evaluation of Academic Performance' project. The left sidebar is collapsed, and the main area displays a list of work items under the 'Work items' tab. The list includes the following items:

ID	Title	Assigned To	State	Area Path	Tags
34	Load Test	Gunavazhagan B	Design	Evaluation of Academic Performance	
38	test1	Gunavazhagan B	Design	Evaluation of Academic Performance	
40	Test 1	Gunavazhagan B	Design	Evaluation of Academic Performance	
41	Performance Evaluation Test	Gunavazhagan B	Design	Evaluation of Academic Performance	
42	Performance Bug	Unassigned	New	Evaluation of Academic Performance	
43	Bug Finding	Gunavazhagan B	Design	Evaluation of Academic Performance	
44	Bug Finding	Avishikar Kannan N	Active	Evaluation of Academic Performance	
45	Bug Finding	Unassigned	New	Evaluation of Academic Performance	
46	Bug Finding	Gunavazhagan B	Design	Evaluation of Academic Performance	
47	Bug 2	Unassigned	New	Evaluation of Academic Performance	

The screenshot shows the detailed view of a work item titled 'Performance Evaluation Test' (ID 41). The work item details are as follows:

- Assignee:** Gunavazhagan B
- Comments:** 0
- Add Tag:** (button)
- State:** Design
- Area:** Evaluation of Academic Performance
- Reason:** New
- Iteration:** Evaluation of Academic Performance\Iteration 4

The 'Steps' section contains the following steps:

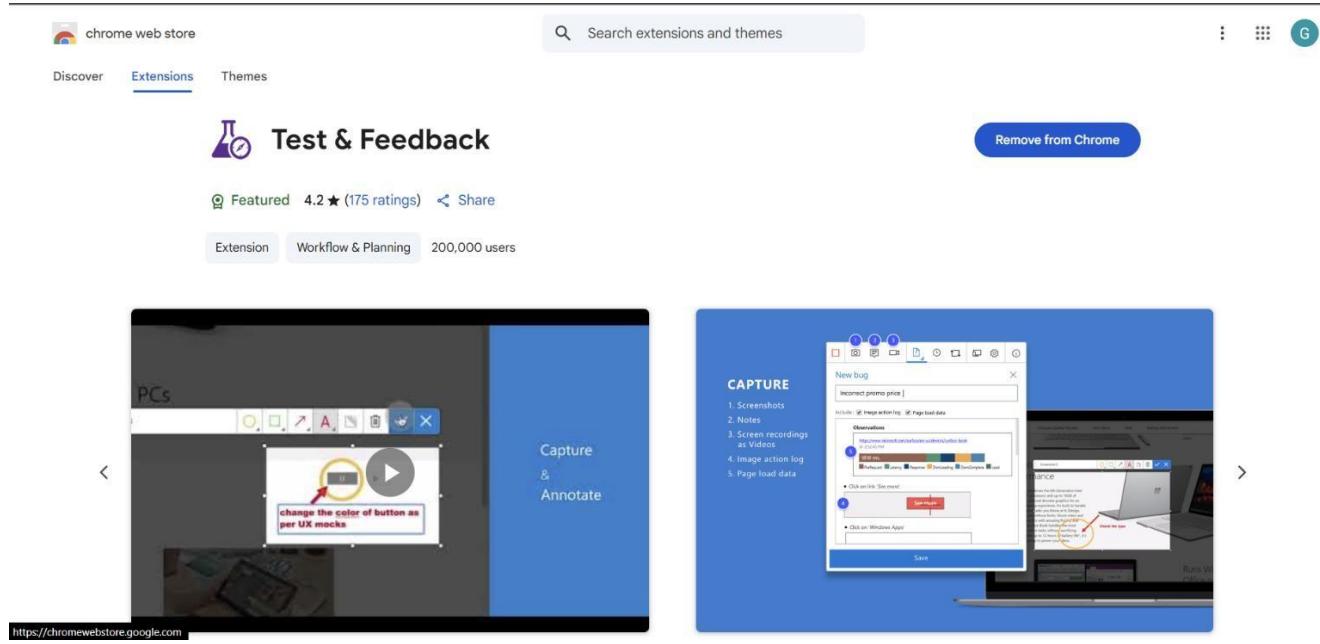
- Click on 'Performance Evaluation'.
- Click on text box
- Update input field with value 'S1'
- Update input field with value 'S1001'
- Click on button 'Search'.
- Click on button 'Evaluate Performance'.

The 'Expected result' column shows the text 'Search student using Register Number'. A deployment status reporting card is present, stating: '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 an 'Add link' button and a note: '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.'

The 'Related Work' section is currently empty.

1. Installation of test



2. Running the test cases

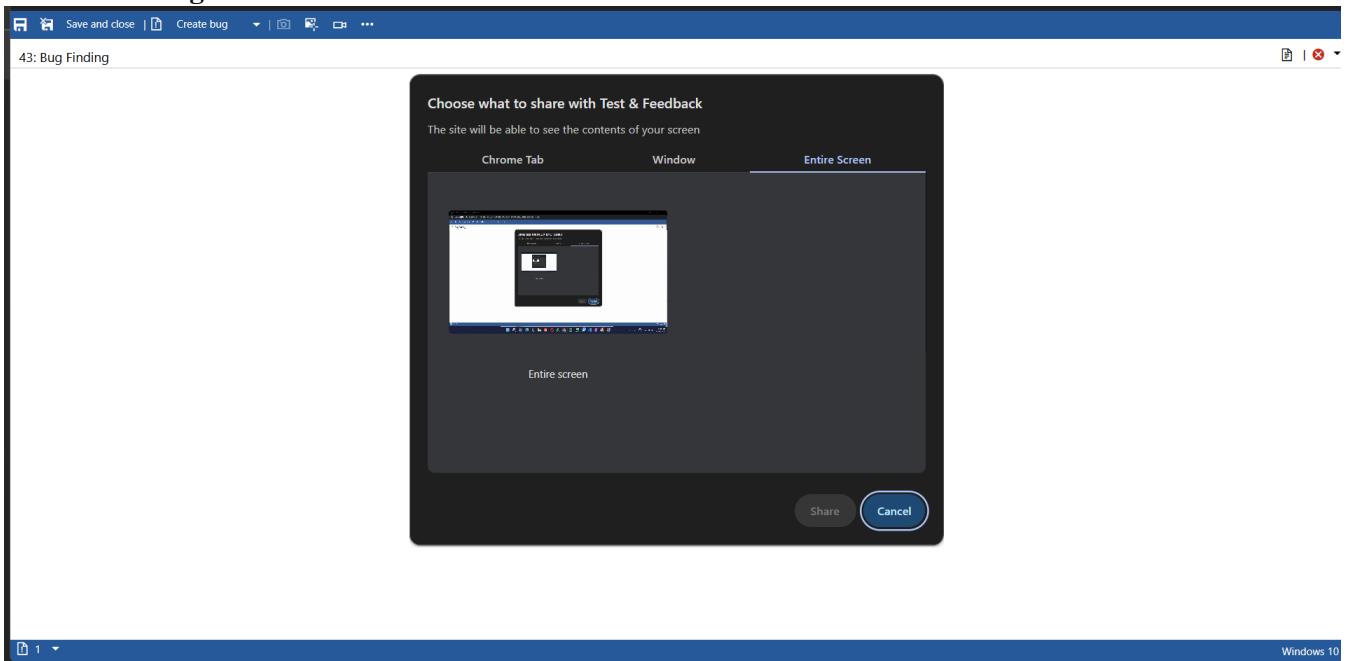
The screenshot shows the Azure DevOps Test Plans interface. On the left, the navigation bar includes 'Evaluation of Academic Perf...', 'Overview', 'Boards', 'Repos', 'Pipelines', 'Test Plans' (selected), 'Test plans', 'Progress report', 'Runs', and 'Artifacts'. Below this is a 'Project settings' link. The main area displays the 'Evaluation of Academic Performance Team...' test plan, specifically the '4 : Academic Performance Evaluation Process (ID: 39)' suite. The 'Test Points (2 items)' table lists two entries: 'test1' (Active, Order 1, Test Case Id 38) and 'Bug Finding' (Active, Order 2, Test Case Id 43). A context menu is open over 'Bug Finding', showing options: 'View execution history', 'Mark Outcome', 'Run', 'Reset test to active', and three run-related options: 'Run for web application', 'Run for desktop application', and 'Run with options'. The top right corner features a search bar, a help icon, and a 'GB' button.

Title	Outcome	Order	Test Case Id
test1	Active	1	38
Bug Finding	Active	2	43

Context menu options for 'Bug Finding':

- View execution history
- Mark Outcome
- Run
- Reset test to active
- Run for web application
- Run for desktop application
- Run with options

3. Recording the test case



4. Creating the bug

NEW BUG *

Bug Finding

Avishikar Kannan N

0 comments Add tag

Save & Close

State: New Area: Evaluation of Academic Performance

Reason: New Iteration: Evaluation of Academic Performance

Repro Steps

30/04/2025 16:07 Bug filed on "Bug Finding"

Test Configuration: Windows 10

System Info

Browser - Name	Google Chrome 135
Browser - Language	en-US
Browser - Height	816
Browser - Width	1536
Browser - User agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/135.0.0.0 Safari/537.36
Operating system - Name	Windows NT 10.0; Win64; x64
Operating system - Architecture	x86_64

Planning

Resolved Reason

Story Points: 8

Priority: 1

Severity: 1 - Critical

Activity: Testing

Effort (Hours)

Original Estimate

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

Parent

Test case results

The screenshot shows the Azure DevOps interface for 'Evaluation of Academic Perf...' project. The left sidebar navigation bar is visible with options like Overview, Boards, Repos, Pipelines, Test Plans, Test plans, Progress report, Runs, and Artifacts. The 'Test Plans' section is currently selected. The main content area displays the 'Evaluation of Academic Performance Evaluation Process (ID: 39)'. It includes a 'Test Suites' section with a dropdown menu for filtering by name, and a 'Test Points (2 items)' table. The table lists two items: 'test1' and 'Bug Finding', both marked as 'Passed' with an outcome of 1 and Test Case Ids 38 and 43 respectively. There are tabs for 'Execute' and 'Chart' at the top right.

5. Test report summary

The screenshot shows the Azure DevOps interface for 'Evaluation of Academic Perf...' project. The left sidebar navigation bar is visible with options like Overview, Boards, Work items, Boards, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, Artifacts, and a 'Required actions' section with a link to https://dev.azure.com/231501055. The 'Work items' section is currently selected. The main content area displays a 'Recently updated' board with one item: 'BUG 42 Performance Bug'. The work item details show it was filed on '30/04/2025 15:15' with 'Bug filed on "Load Test"'. The 'Test Configuration:' is listed as 'Windows 10'. The 'System Info' table includes columns for Browser - Name, Language, Height, Width, User agent, Operating system - Name, Architecture, and Processor. The 'Development' section shows a 'Details' button and a note about tracking releases via Azure Boards. The 'Effort (Hours)' section has a placeholder 'Original Estimate'. The bottom right corner shows a 'Related Work' section.

- Assigning bug to the developer and changing state

Bug 2

Search users: 0 comments Add tag

Save & Close

Evaluation of Academic Performance
Evaluation of Academic Performance

Planning Deployment

Resolved Reason: 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.

Story Points: 10

Priority: 2

Severity: 3 - Medium

Activity: + Add link

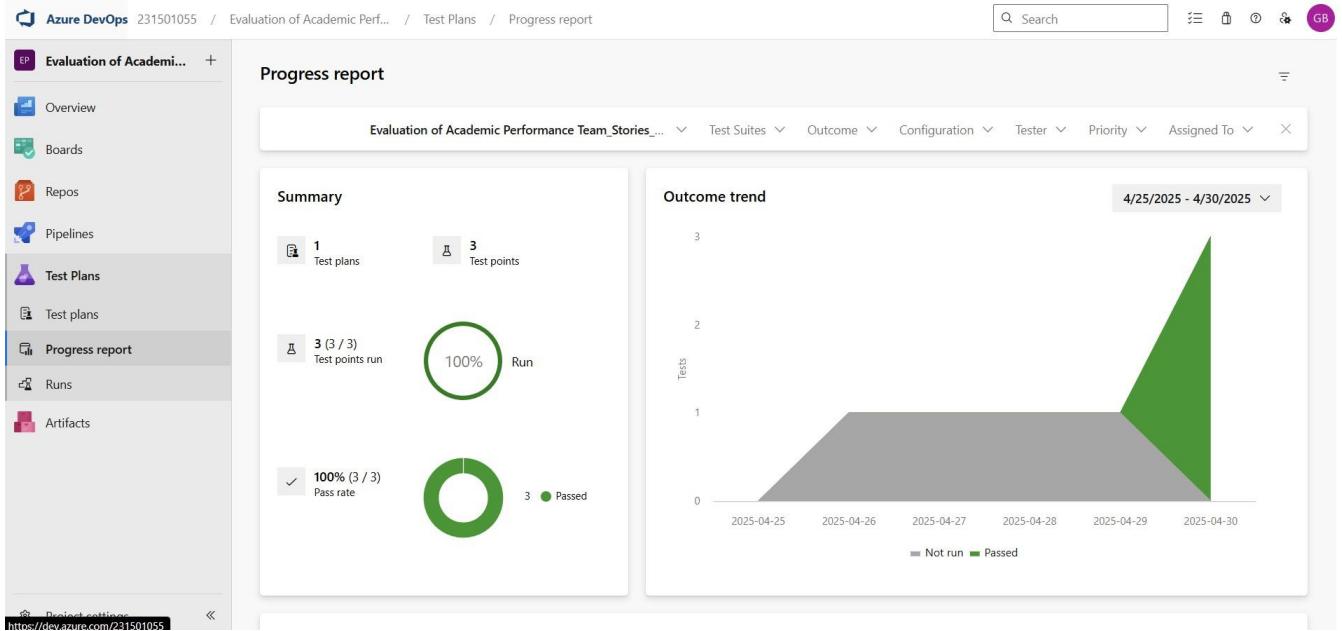
Effort (Hours): Original Estimate: 10 hours

Related Work: + Add link Parent: -

System Info:

Browser - Name	Google Chrome 135
Browser - Language	en-US
Browser - Height	816
Browser - Width	1536
Browser - User agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/135.0.0.0 Safari/537.36
Operating system - Name	Windows NT 10.0; Win64; x64
Operating system - Architecture	x86_64

Progress report



6. Changing the test template

The screenshot shows the 'Organization Settings' page under 'Settings'. The 'Process' section is highlighted in the sidebar. The main content area displays a list of available processes: 'Basic (default)', 'Agile' (selected), 'Scrum', and 'CMMI'. Each process entry includes a description and a 'Team projects...' link. The 'Agile' template is described as being flexible for most teams using Agile planning methods.

7. View the new test case template

The screenshot shows the 'Create new work item type' dialog in the Azure DevOps interface. The 'Name' field is set to 'Test Case Template - 2'. The 'Description' field contains the text: 'tests to be conducted on a increased priority'. The 'Icon color' is set to yellow. At the bottom right, there are 'Create' and 'Cancel' buttons.

Result:

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

EXP NO: 9	LOAD TESTING AND PERFORMANCE TESTING
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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.
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

TestRun_4/30/2025_7:54:48 PM | My Information | Test Plan 35 Evaluation of Acad | Microsoft Word - SC Record.doc | Academic Performance Evaluati... | +

portal.azure.com/Microsoft.Azure.Education.correlationId=13fb4961-d9f5-4e47-a547-8b54a36e0454#view/Microsoft.Azure.CloudNativeTesting/NewReport/testId/721865cd-4ab4...

Microsoft Azure | Search resources, services, and docs (G+) | Copilot | 231501055@rajalakshmi... DEFAULT DIRECTORY

Home > Microsoft.CloudNativeTesting1746022655243 | Overview > Evaluation-of-Academic-Performance >

TestRun_4/30/2025_7:54:48 PM ...

Last updated by: 231501055@rajalakshmi.edu.in | Initiated on: 4/30/2025, 7:54 PM

View all test runs Stop Refresh Rerun Compare App components Configure metrics Download Copy artifacts Share Delete test run Mark as baseline Auto refresh off

Test run details

Start time	End time	Test run ID	Test type	Engine instances	Debug mode	Test result	Status
4/30/2025, 7:54:53 PM		721865cd-4ab4-4759-ab...	URL	2	Disabled	Not Applicable	Done

Load test results Engine health

Statistics

Load 2.88 M Total requests	Duration 20 mins, 6 secs	Response time 270.00 ms 90th percentile response time	Error percentage 0 % Aggregate requests which failed	Throughput 2391.44 /s Request rate
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Client-side metrics

Requests : All Region : 0 Aggregation : P90 Error type : All Time range : 4/30/2025, 7:54:53 PM - 4/30/2025, 8:05:54 PM Group by : 1m

Virtual Users (Max)

Response time (successful responses)

Request1-1 200 Request1-0 200 Request1 200 Aggregate 200

Requests/sec (Avg)

Errors (total)

Request1-0 Pct 90 193.81 ms Request1-0 Pct 90 360.38 ms Request1-1 Pct 90 192.9 ms Aggregate Pct 90 269 ms

Request1-1 Non HTTP res... 1 Request1-0 Non HTTP res... 1

Academic Performance Evaluation

Welcome to Academic Performance Evaluation System
Monitor and evaluate student academic performance based on CGPA requirements and program standards.

Total Students 1,248 **Good Standing** 1,012 **Academic Warning** 156 **Alternate Program** 64 **Dismissed** 16

Student ID	Name	Program	Overall CGPA	Major CGPA	Status	Date
S1001	John Smith	Computer Science	3.45	3.60	Good Standing	2023-05-15
S1002	Emily Johnson	Electrical Engineering	2.85	2.70	Academic Warning	2023-05-15
S1003	Michael Brown	Mechanical Engineering	1.95	1.80	Continue in Alternate	2023-05-14
S1004	Sarah Davis	Business Administration	1.65	1.50	Dismissed	2023-05-14
S1005	David Wilson	Computer Science	3.20	3.35	Good Standing	2023-05-13

Academic Performance Evaluation

Dark Mode

Student ID: S1001

Search

Name: John Smith	Program: Computer Science	Current Status: Good Standing
------------------	---------------------------	-------------------------------

Overall CGPA: 3.45

Major CGPA: 3.6

Number of Failed Courses: 1

Evaluation Date: dd-mm-yyyy

Academic Performance Evaluation

Dark Mode

Number of Failed Courses

1

Evaluation Date

dd-mm-yyyy

Evaluate Performance **Clear Form**

Evaluation Result

Overall CGPA:	Major CGPA:	Failed Courses:	Program Requirements:
3.45	3.60	1	Overall: 2, Major: 2.3, Max Failed: 2

Academic Status: **Good Standing**

Recommendation: **Continue in current program**

Result:

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

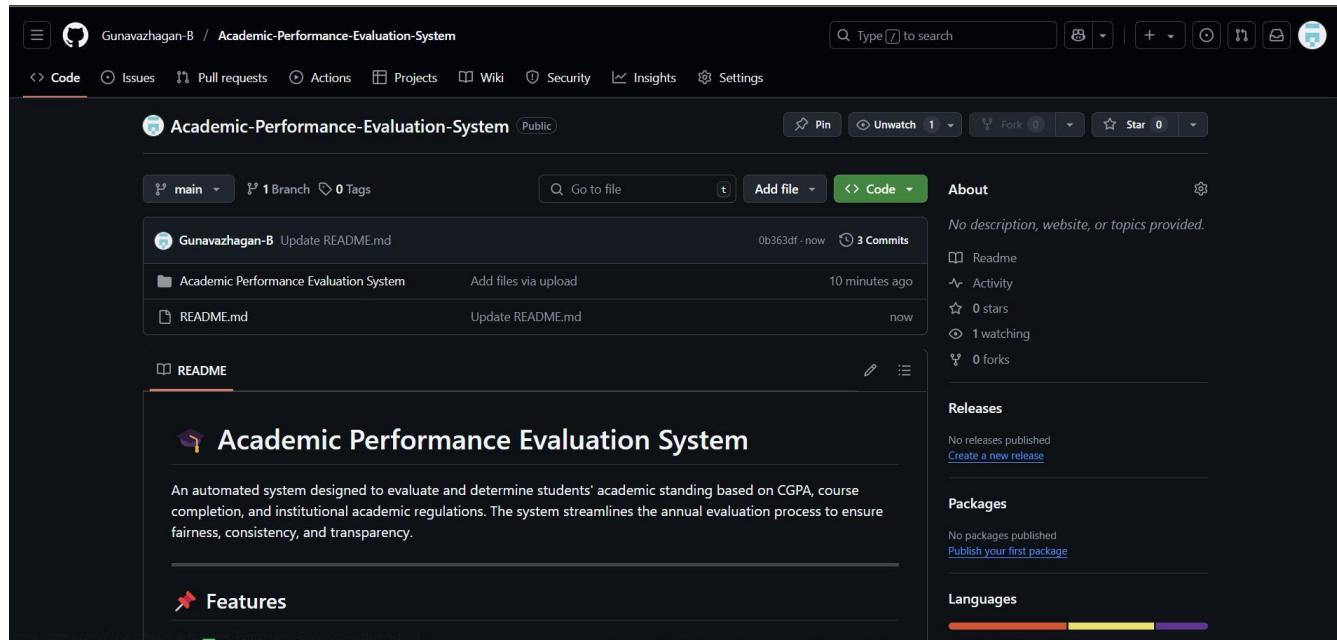
EXP NO: 10

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 **Academic Performance Evaluation System** for effective and transparent assessment of student academic standing.

GitHub Project Structure



Result:

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

231501055

CS23432