

Aim:

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

INSTALLATION

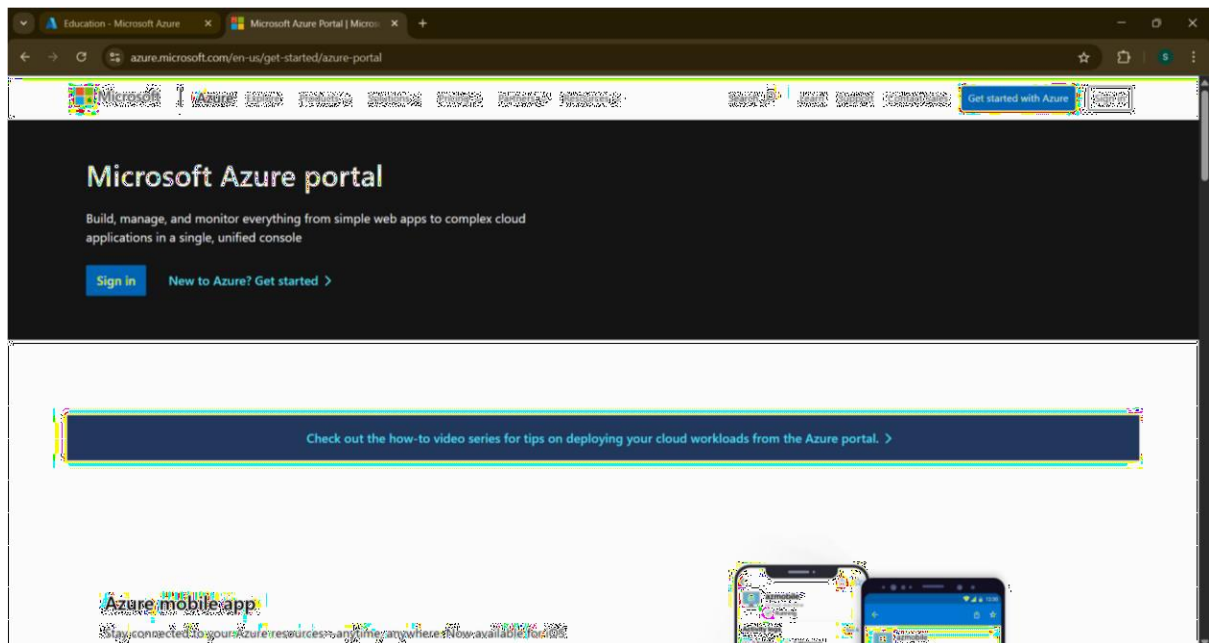
1. Open your web browser and go to the Azure website:

<https://azure.microsoft.com/en-us/get-started/azure-portal>.

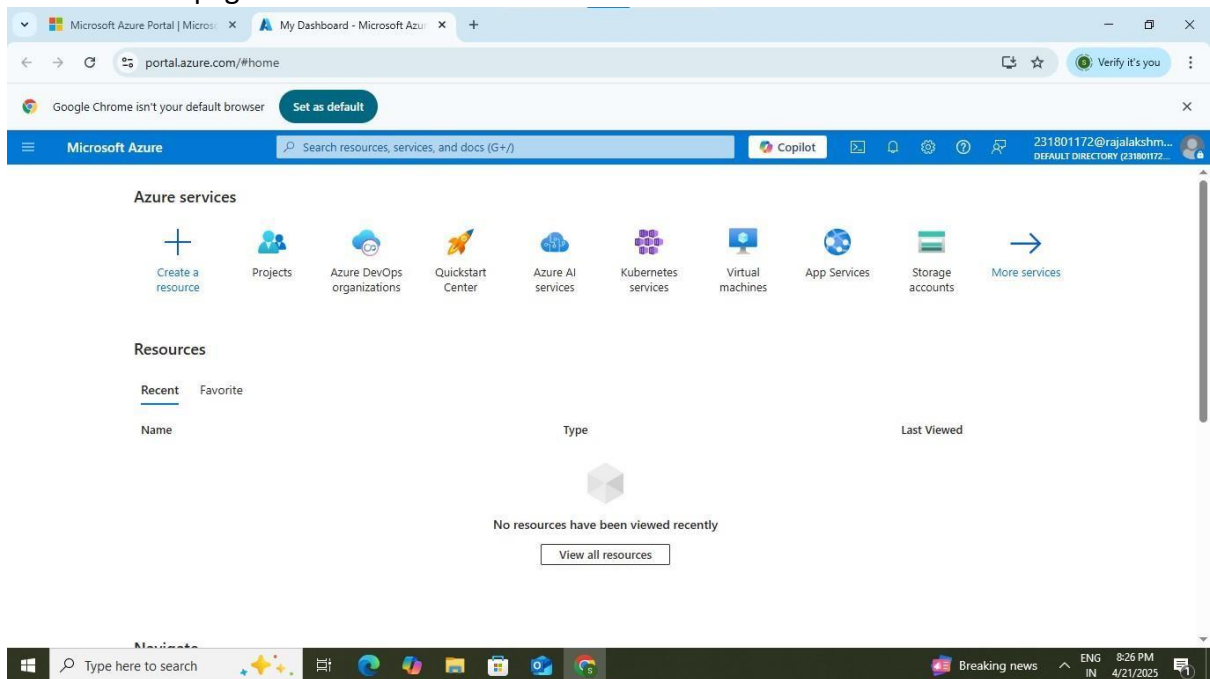
Sign in using your Microsoft account credentials.

If you don't have a Microsoft account, you can create one here:

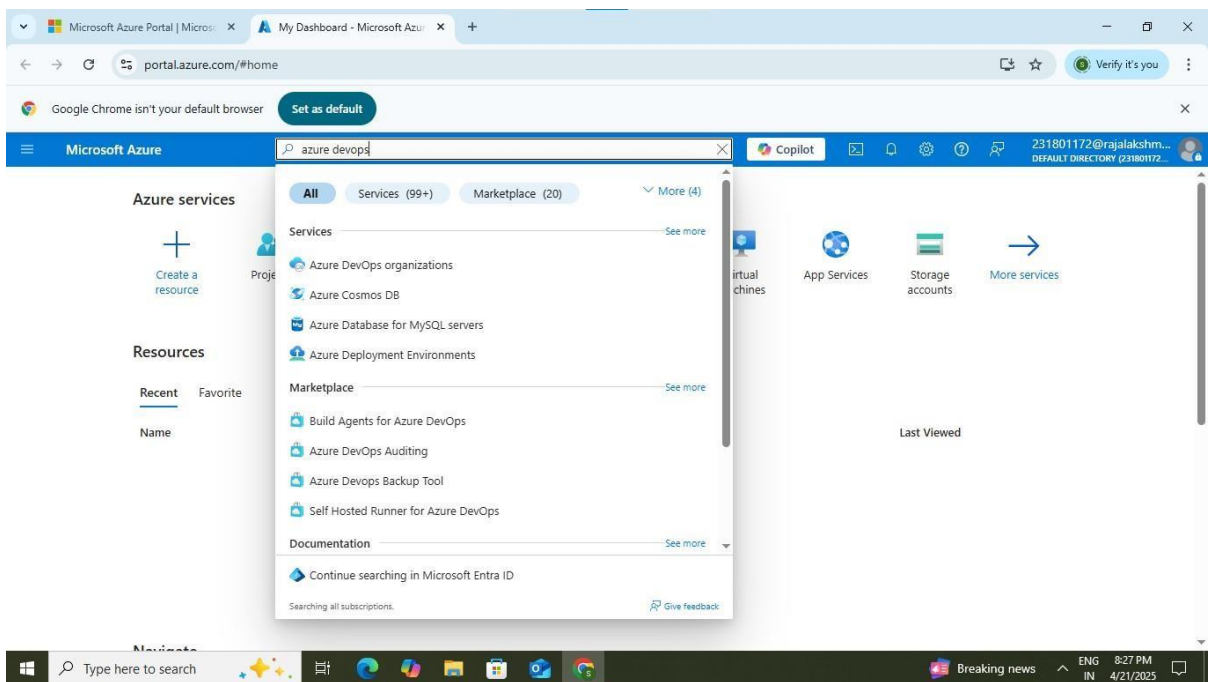
<https://signup.live.com/?lic=1>



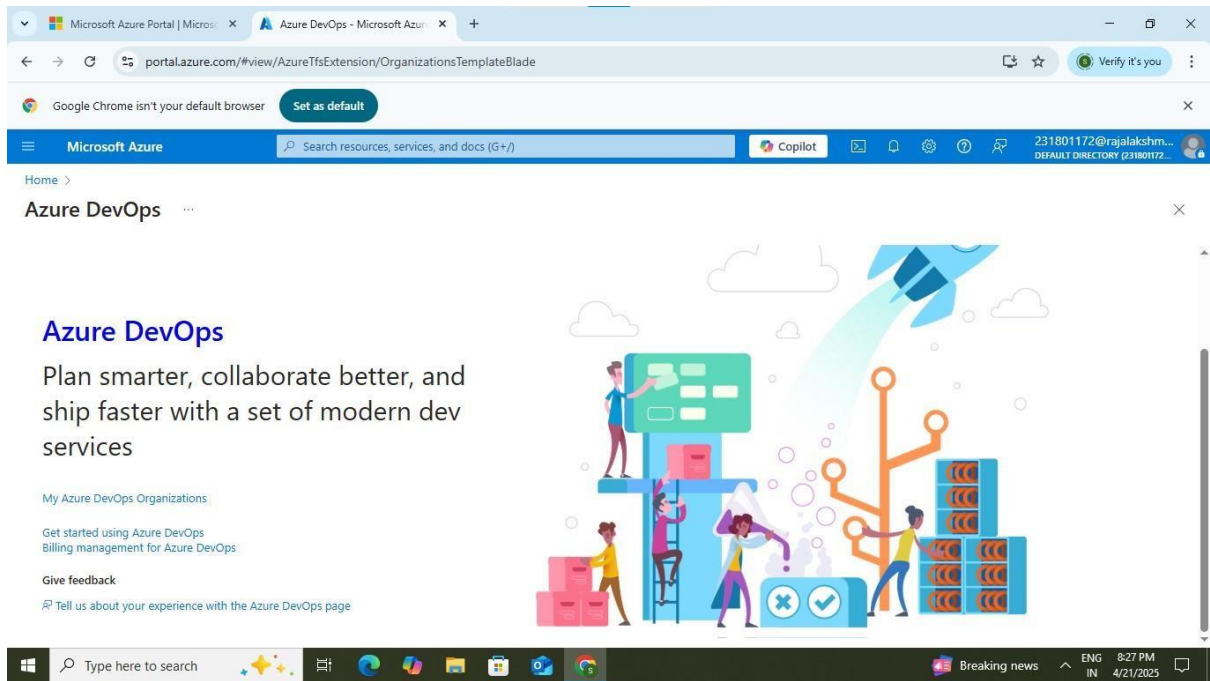
2. Azure home page



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



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



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

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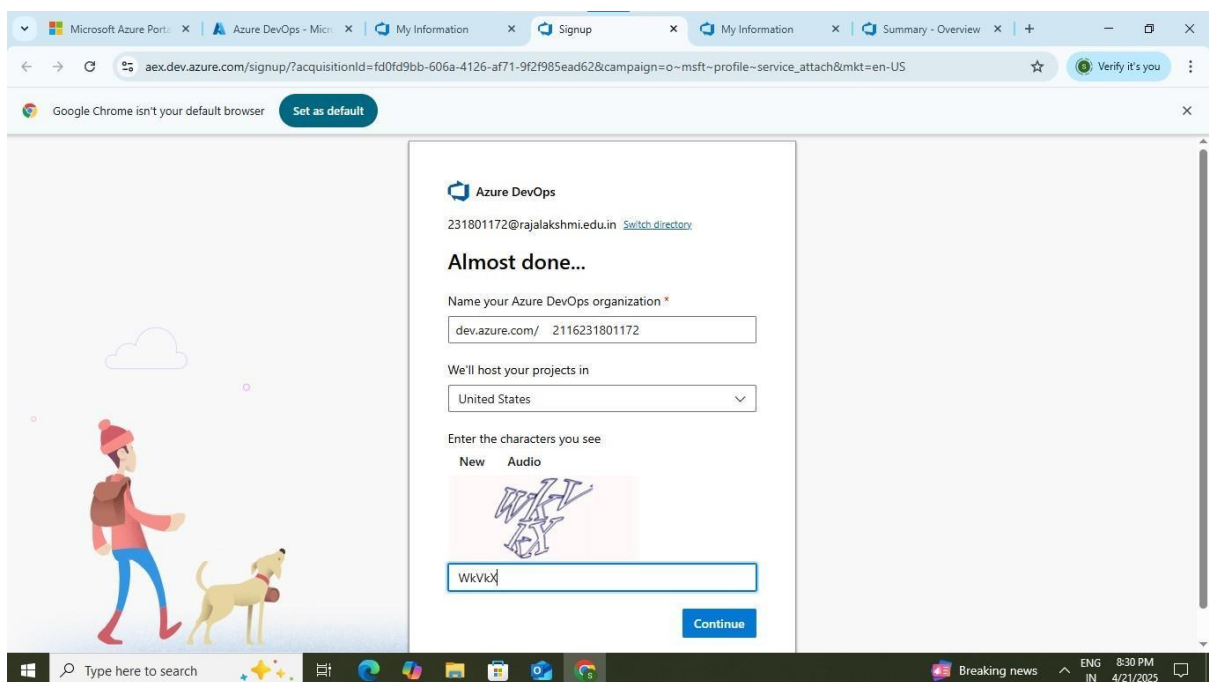
EXP NO: 2

AZURE DEVOPS PROJECT SETUP AND USER STORY MANAGEMENT

Aim:

To set up an Azure DevOps project for efficient collaboration and agile work management.

1. Create An Azure Account

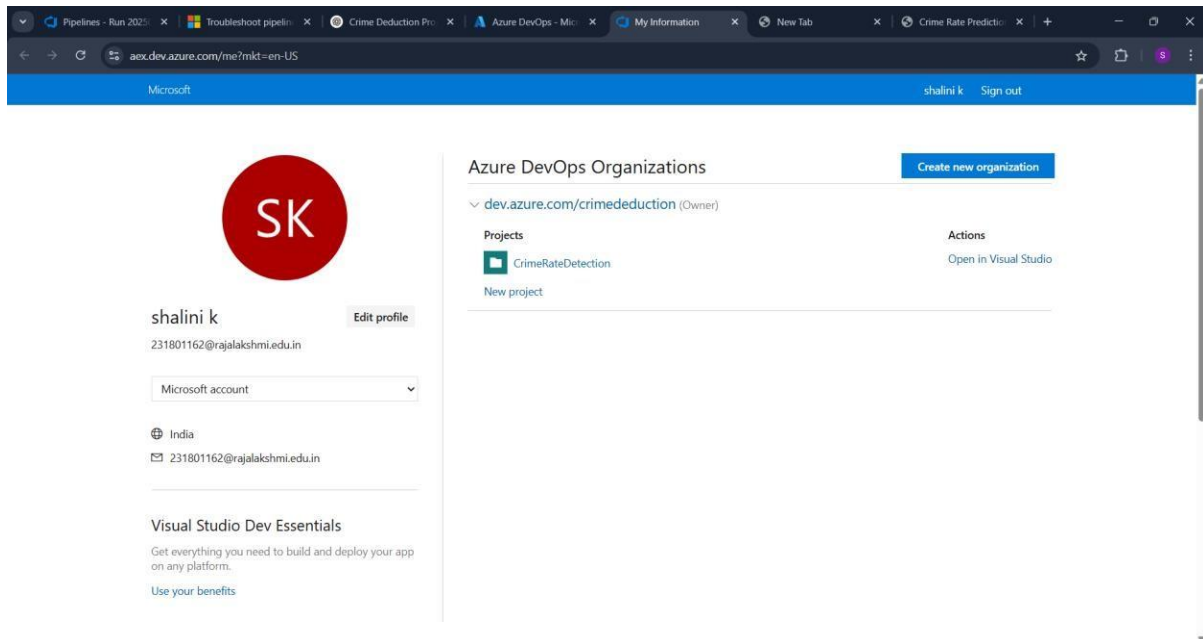


The screenshot shows the Azure DevOps 'Almost done...' setup page. The user's email is 231801172@rajalakshmi.edu.in. The organization name is dev.azure.com/ 2116231801172. The hosting region is United States. The CAPTCHA challenge is WkVix. The 'Continue' button is visible at the bottom right of the form.

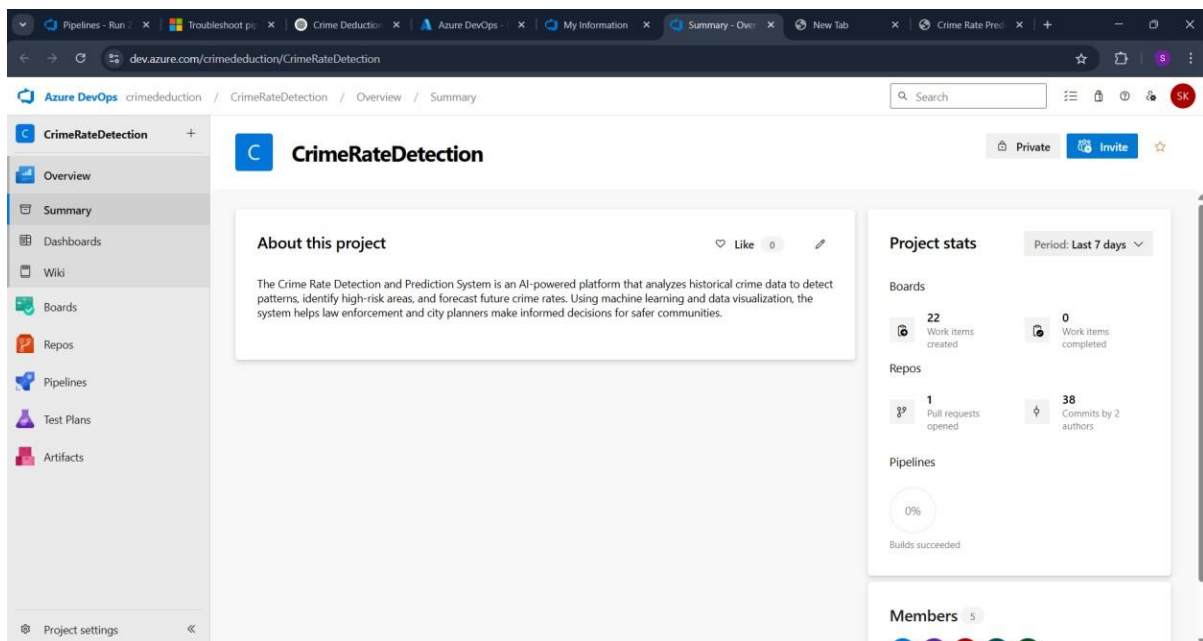
2. Create the First Project in Your Organization

- After the organization is set up, you'll need to create your first **project**. This is where you'll begin to manage code, pipelines, work items, and more.
- On the organization's **Home page**, click on the **New Project** button.
- Enter the project name, description, and visibility options:
 - Name:** Choose a name for the project (e.g., LMS).
 - Description:** Optionally, add a description to provide more context about the project.
 - Visibility:** Choose whether you want the project to be **Private** (accessible only to those invited) or **Public** (accessible to anyone).
- Once you've filled out the details, click **Create** to set up your first project.

3. Once logged in, ensure you are in the correct organization. If you're part of multiple organizations, you can switch between them from the top left corner (next to your user profile). Click on the Organization name, and you should be taken to the Azure DevOps Organization Home page.



4. Project dashboard

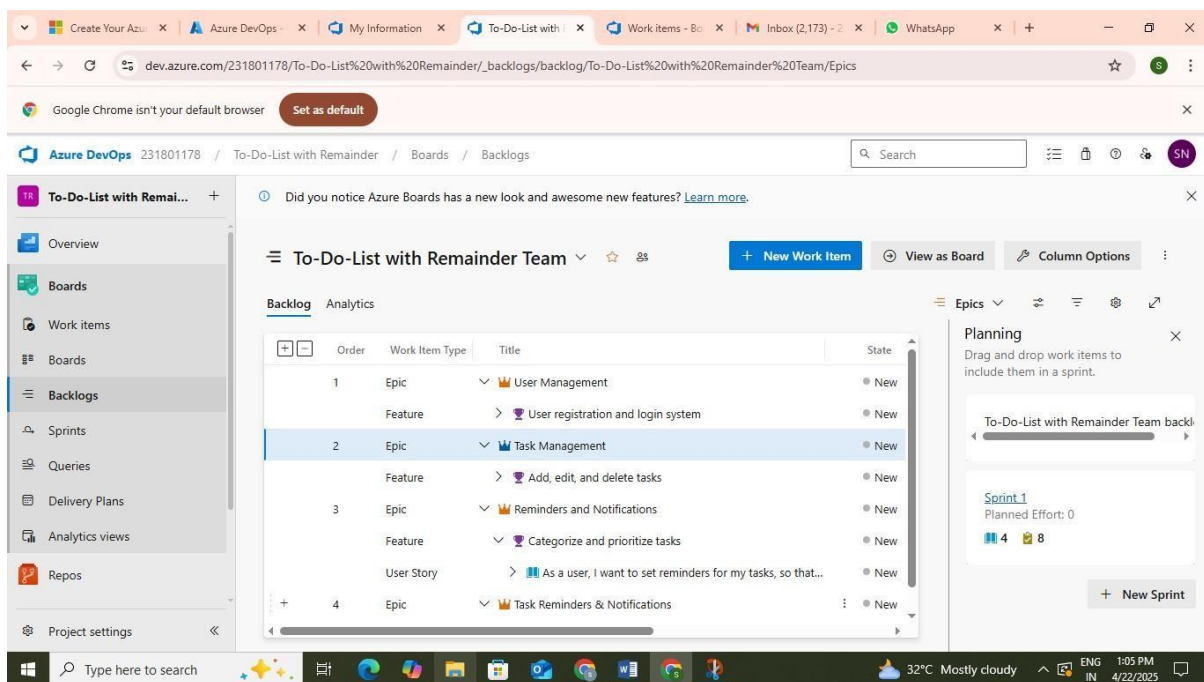


5. To manage user stories:

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a. From the **left-hand navigation menu**, click on **Boards**. This will take you to the main **Boards** page, where you can manage work items, backlogs, and sprints.

b. On the **work items** page, you'll see the option to **Add a work item** at the top. Alternatively, you can find a + button or **Add New Work Item** depending on the view you're in. From the **Add a work item** dropdown, select **User Story**. This will open a form to enter details for the new User Story.



Result: successfully created an Azure DevOps project with user story management and agile workflow setup.

EXP NO: 3

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

Aim:

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

Create Epic, Features, User Stories, Task

1.Fill in Epics

The screenshot shows the Azure DevOps interface for a project named 'CrimeRateDetection'. The left sidebar contains navigation options: Overview, Boards, Work items, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Artifacts. The main area displays the 'Epic 13' page for 'Data collection and preprocessing'. It includes a 'Recently updated' section, a 'Description' field, a 'Discussion' section, and a 'Planning' section with fields for Priority, Risk, Effort, Business Value, Time Criticality, Start Date, and Target Date. There are also 'Deployment' and 'Development' sections on the right.

2.Fill in Features

The screenshot shows the Azure DevOps interface for a project named 'To-Do-List with Remainder Team'. The left sidebar contains navigation options: Overview, Boards, Work items, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Artifacts. The main area displays the 'Backlog' view for the 'To-Do-List with Remainder Team' project. It shows a list of work items with columns for Order, Work Item Type, Title, and State. The work items are categorized into Epics, Features, and User Stories. The right sidebar shows the 'Planning' section with a 'Sprint 1' view.

Order	Work Item Type	Title	State
1	Epic	User Management	New
	Feature	User registration and login system	New
2	Epic	Task Management	New
	Feature	Add, edit, and delete tasks	New
3	Epic	Reminders and Notifications	New
	Feature	Categorize and prioritize tasks	New
	User Story	As a user, I want to set reminders for my tasks, so that...	New
4	Epic	Task Reminders & Notifications	New

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3.Fill in User Story Details

The screenshot displays the Azure DevOps interface for the 'CrimeRateDetection' team. The main view is the 'Backlog' for the 'Analytics' area. It shows a list of four user stories, each with a title, state (New), and value area (Business). The right sidebar shows the 'Planning' view, which includes a 'CrimeRateDetection Team backlog' section and three iterations (Iteration 1, Iteration 2, and Iteration 3). Iteration 1 has a planned effort of 9 and a total of 9 items (3 blue, 6 yellow). Iteration 2 and Iteration 3 have no work scheduled yet.

Order	Work Item Type	Title	State	Story...	Value Area
1	User Story	As a data engineer, I want to collect crime data from public...	New	3	Business
2	User Story	As a data engineer, I want to clean and preprocess the crim...	New	3	Business
3	User Story	As a data scientist, I want to train a machine learning model...	New	3	Business
4	User Story	As a developer, I want to deploy the model as a REST API so...	New		Business

Planning

Drag and drop work items to include them in a sprint.

CrimeRateDetection Team backlog

Iteration 1
Planned Effort: 9
3 9

Iteration 2
No work scheduled yet

Iteration 3
No work scheduled yet

+ New Sprint

Result:

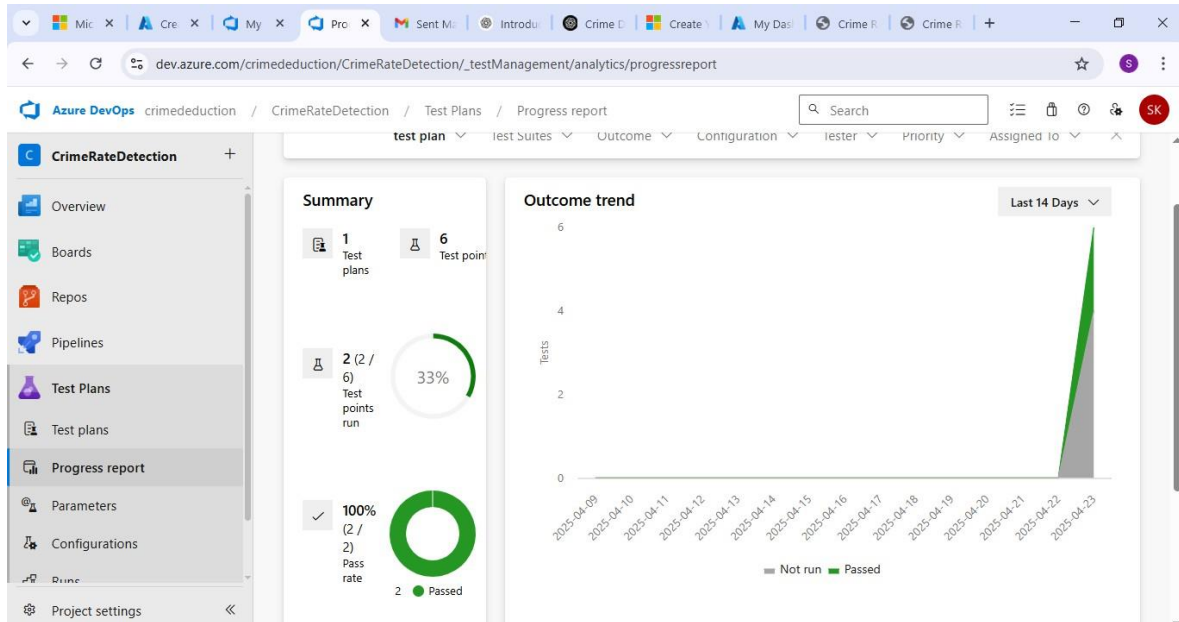
Thus, the creation of epics, features, user story and task has been created successfully.

Aim:

To assign Test case ,Test suites and Test case specific sprint for the Crime Rate Detection Project.

Test Planning :**Test suites and Test Cases:**

The screenshot shows the Azure DevOps Test Plans interface for the 'CrimeRateDetection' project. The left sidebar contains navigation links: Overview, Boards, Repos, Pipelines, Test Plans (selected), Test plans, Progress report, Parameters, Configurations, and Project settings. The main area displays the 'test plan' for 'Apr 23 - Apr 30' with a 'Current' status and '33% run, 100% passed'. Below this, the 'Test Suites' section shows a filter by name and a list of suites: 'test plan' and 'New Suite'. The 'Test Cases (3 items)' section lists three test cases: 'Title', 'Verify ingestion of local CSV file', and 'Verify crime data is collected from a public API'. The 'Define' tab is active, showing the test case details for '15 : As a data engineer, I want to collect crime data from public APIs and CSV files so I can build a comprehensive dataset. (ID: 38)'.

Test Run:

Test Suites:

Run 4 - 15 : As a data engineer, I want to collect crime data from public APIs and CSV files so ...

Summary

Passed

Run by: shalini k
Tested build: not available
Test Plan: test plan
Priority: 2
Test suite: 15 : As a data engineer, I want to collect crime data from public APIs and CSV files so I can build a comprehensive dataset.
Test Case: Verify ingestion of local CSV file
Configuration: Windows 10

Analysis

Owner: shalini k
Failure type: None
Resolution: None
Comment: not available

Attachments (0)

Linked Items (0)

TestRuns deployments:

Microsoft.CloudNativeTesting1745335435905 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Your deployment is complete

Deployment name: Microsoft.CloudNativeTestin... Start time: 4/22/2025, 8:54:19 PM
Subscription: Azure for Students Correlation ID: 2245f192-0acc-4700-99a8-f...
Resource group: CrimeRateDetection

Deployment details

Next steps

Go to resource

Cost management

Get notified to stay within your budget and prevent unexpected charges on your bill.
Set up cost alerts >

Microsoft Defender for Cloud

Secure your apps and infrastructure
Go to Microsoft Defender for Cloud >

Free Microsoft tutorials

Start learning today >

Work with an expert

RESULT : Thus , the Test plan ,Test suites and Test cases of the Crime Rate Detection was executed Successfully

Aim:

Create Poker Estimation for the user stories – Crime Rate Detection Project.

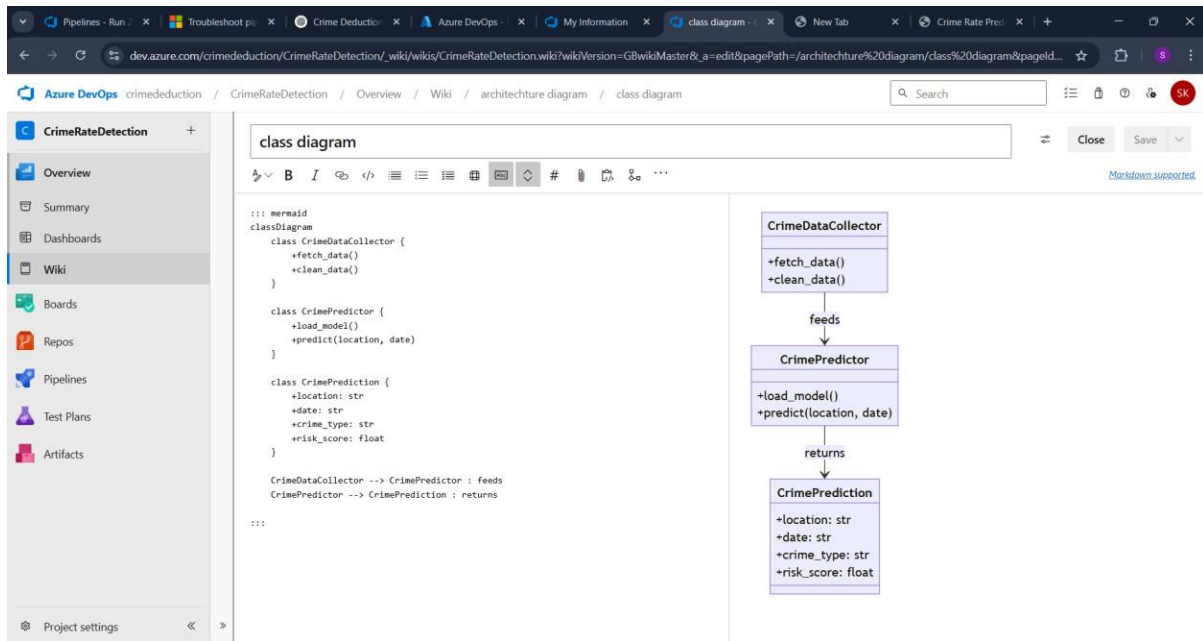
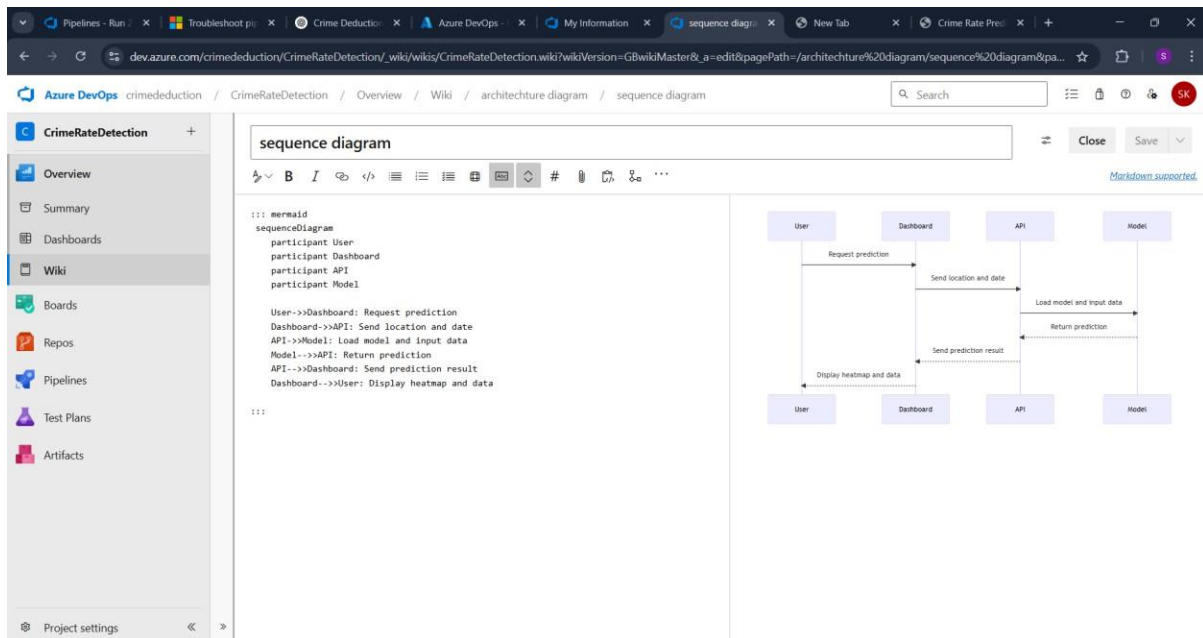
Poker Estimation

The screenshot displays the Azure DevOps web interface for a project named 'crimedetection'. The left sidebar shows the navigation menu with 'Work items' selected. The main area shows a 'USER STORY 15' titled 'As a data engineer, I want to collect crime data from public APIs and CSV files so I can build a comprehensive dataset.' The story is assigned to 'Shruthi S' and has 0 comments. The story is in the 'New' state and is part of the 'CrimeRateDetection' area. The 'Description' field is empty, and the 'Acceptance Criteria' field is also empty. The 'Planning' section shows 'Story Points: 3', 'Priority: 2', and 'Risk:'. The 'Classification' section shows 'Value area: Business'. The 'Deployment' section has a link to 'Add link'. The 'Development' section has a link to 'Add link'. The bottom of the interface shows a comment box with the text 'Add a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request.'

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

Aim:

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

6A. Class Diagram**6B. Sequence Diagram**

Result: The Class Diagram and Sequence Diagram is designed Successfully for the Music Playlist Batch Creator.

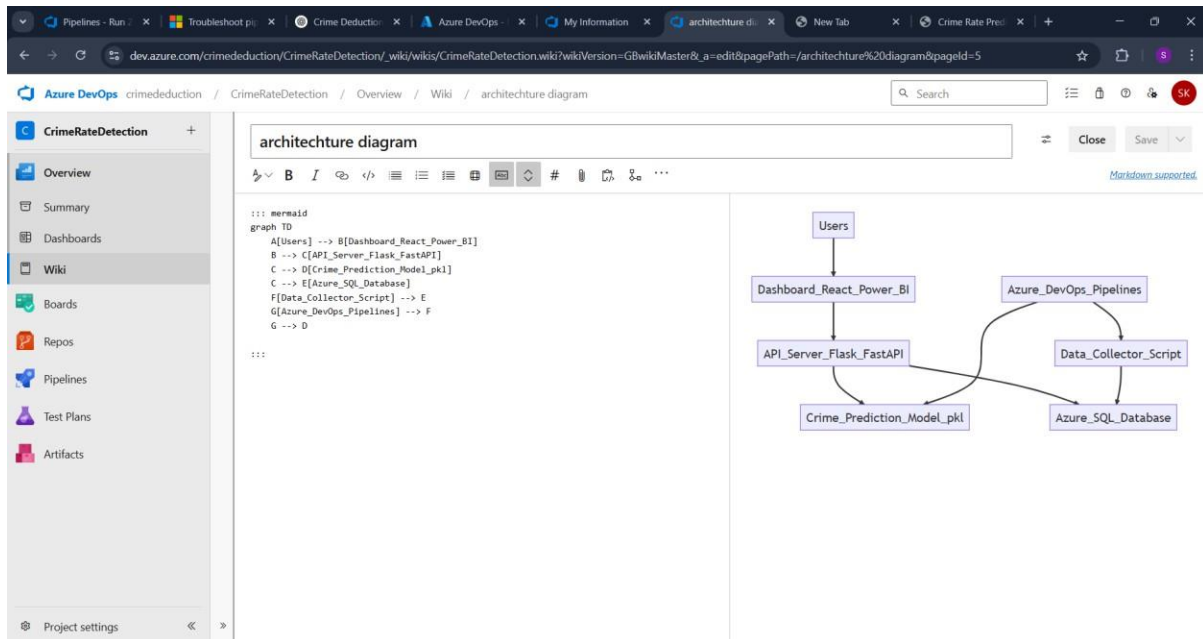
EXP NO: 7

DESIGNING ARCHITECTURAL AND ER DIAGRAMS FOR PROJECT STRUCTURE

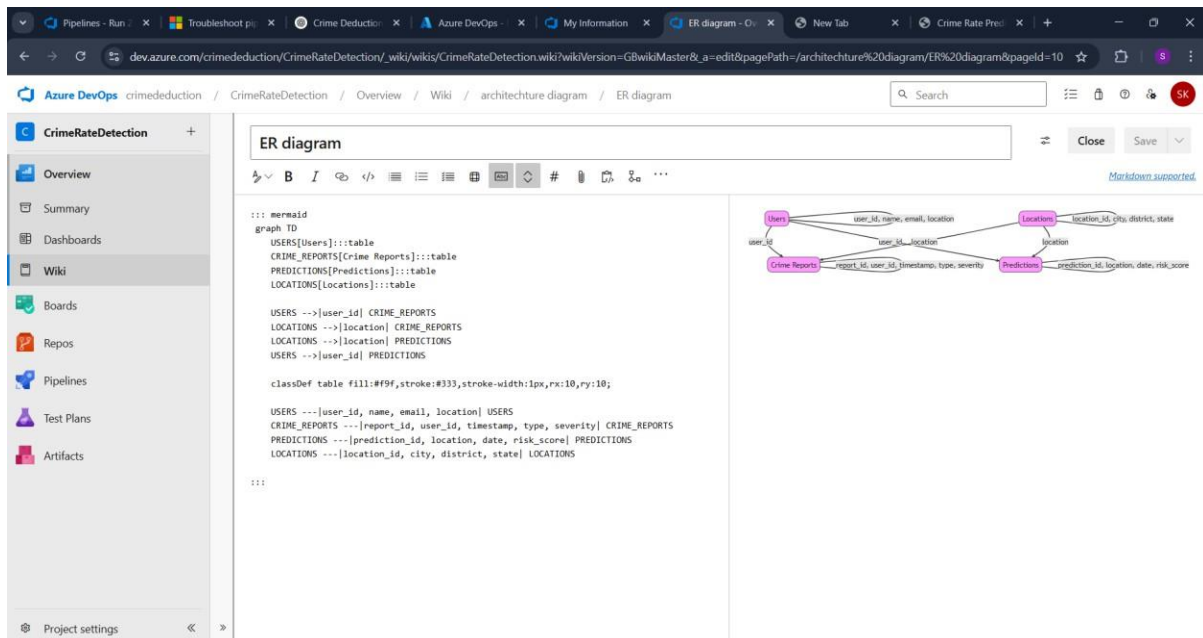
Aim:

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 the Crime Rate Detection Project.

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SPRINT PLANNING

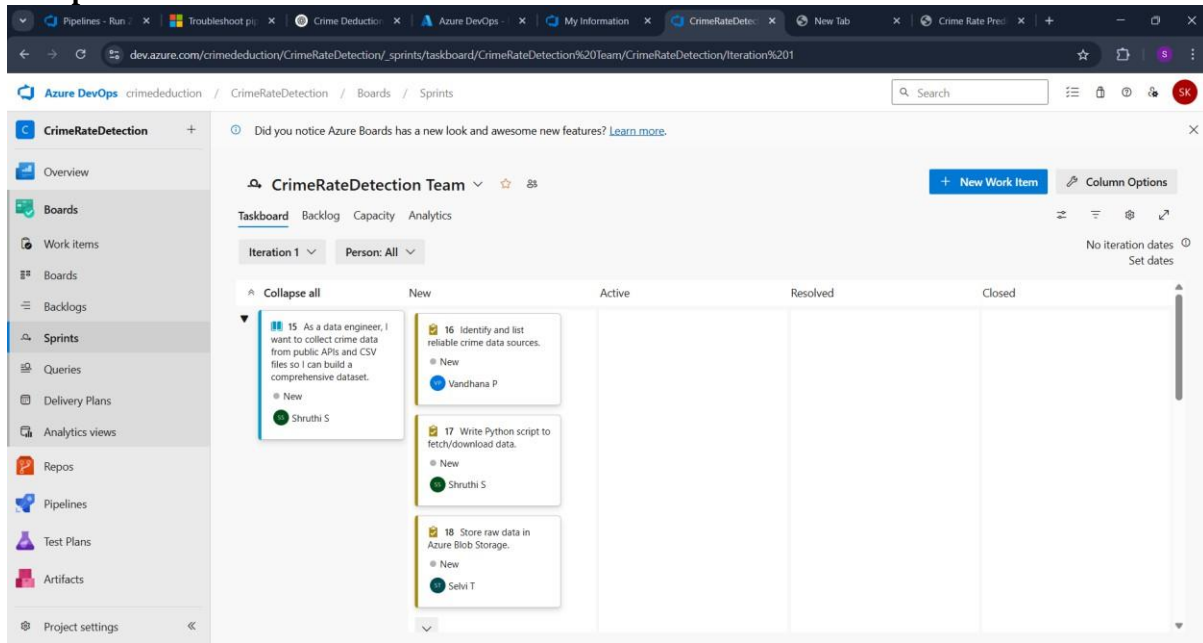
Create Epic, Features, User Stories, Task

Aim:

To assign user story to specific sprint for the Crime Rate Detection Project.

Sprint Planning

Sprint 1

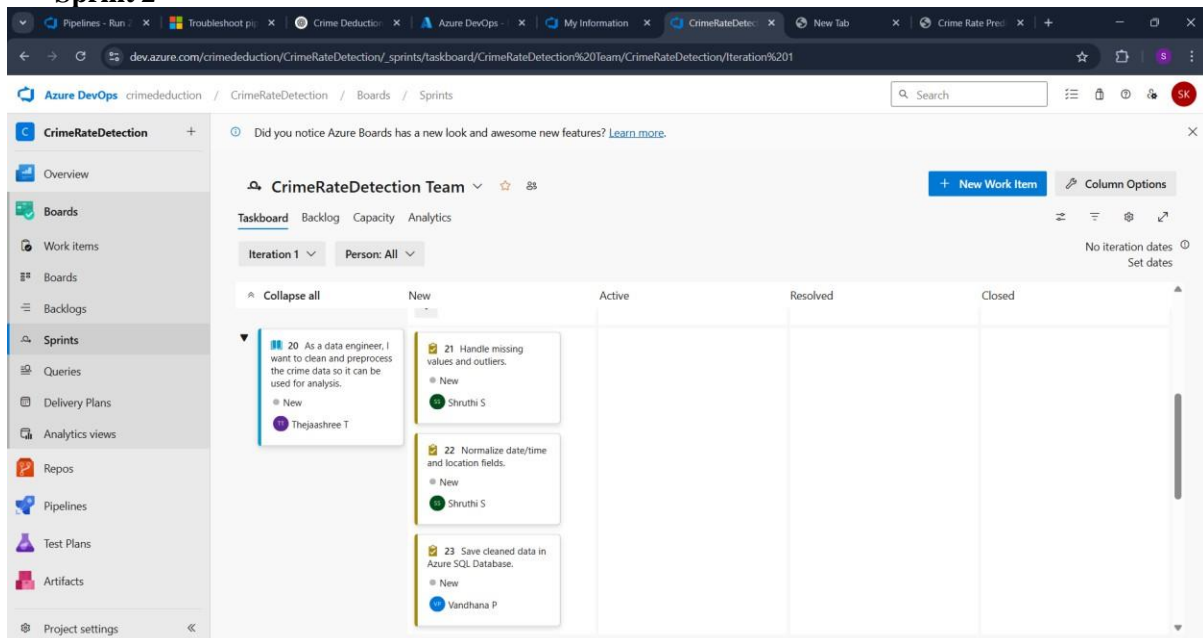


The screenshot shows the Azure DevOps Sprints board for the 'CrimeRateDetection Team'. The board is titled 'CrimeRateDetection Team' and has tabs for 'Taskboard', 'Backlog', 'Capacity', and 'Analytics'. The 'Taskboard' tab is selected, showing a Kanban board with columns: 'New', 'Active', 'Resolved', and 'Closed'. The 'New' column contains three items:

- Item 15: As a data engineer, I want to collect crime data from public APIs and CSV files so I can build a comprehensive dataset. (Assigned to Shruthi S)
- Item 16: Identify and list reliable crime data sources. (Assigned to Vandhana P)
- Item 17: Write Python script to fetch/download data. (Assigned to Shruthi S)
- Item 18: Store raw data in Azure Blob Storage. (Assigned to Selvi T)

The left sidebar shows the project structure: Overview, Boards, Work items, Boards, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Artifacts. The top navigation bar includes links to Pipelines, Run, Troubleshoot, Crime Deduction, Azure DevOps, My Information, CrimeRateDetection, and New Tab.

Sprint 2



The screenshot shows the Azure DevOps Sprints board for the 'CrimeRateDetection Team'. The board is titled 'CrimeRateDetection Team' and has tabs for 'Taskboard', 'Backlog', 'Capacity', and 'Analytics'. The 'Taskboard' tab is selected, showing a Kanban board with columns: 'New', 'Active', 'Resolved', and 'Closed'. The 'New' column contains three items:

- Item 20: As a data engineer, I want to clean and preprocess the crime data so it can be used for analysis. (Assigned to Thejaashree T)
- Item 21: Handle missing values and outliers. (Assigned to Shruthi S)
- Item 22: Normalize date/time and location fields. (Assigned to Shruthi S)
- Item 23: Save cleaned data in Azure SQL Database. (Assigned to Vandhana P)

The left sidebar shows the project structure: Overview, Boards, Work items, Boards, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Artifacts. The top navigation bar includes links to Pipelines, Run, Troubleshoot, Crime Deduction, Azure DevOps, My Information, CrimeRateDetection, and New Tab.

Sprint 3

The screenshot displays the Azure DevOps interface for the 'CrimeRateDetection' project. The left sidebar shows the navigation menu with options like Overview, Boards, Work items, Boards, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, Artifacts, and Project settings. The main area shows the 'CrimeRateDetection Team' Kanban board. The board has columns for 'New', 'Active', 'Resolved', and 'Closed'. There are four work items in the 'New' column:

- 26 As a data scientist, I want to train a machine learning model to forecast crime rates by region. (New, shalini k)
- 27 Prepare features (e.g., time, location, crime type). (New, shalini k)
- 28 Train regression/classification models. (New, shalini k)
- 29 Evaluate model accuracy (R², MAE, etc.) (New, shalini k)

Result:

The Sprints are created for the Crime Rate Detection Project.

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.

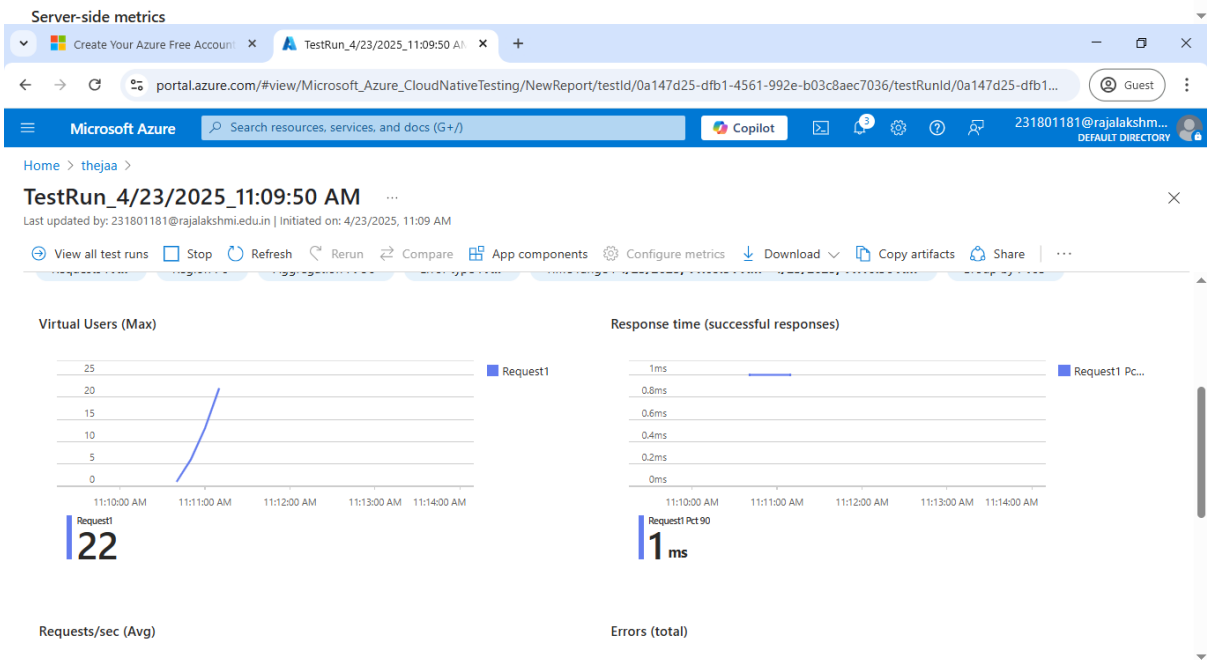
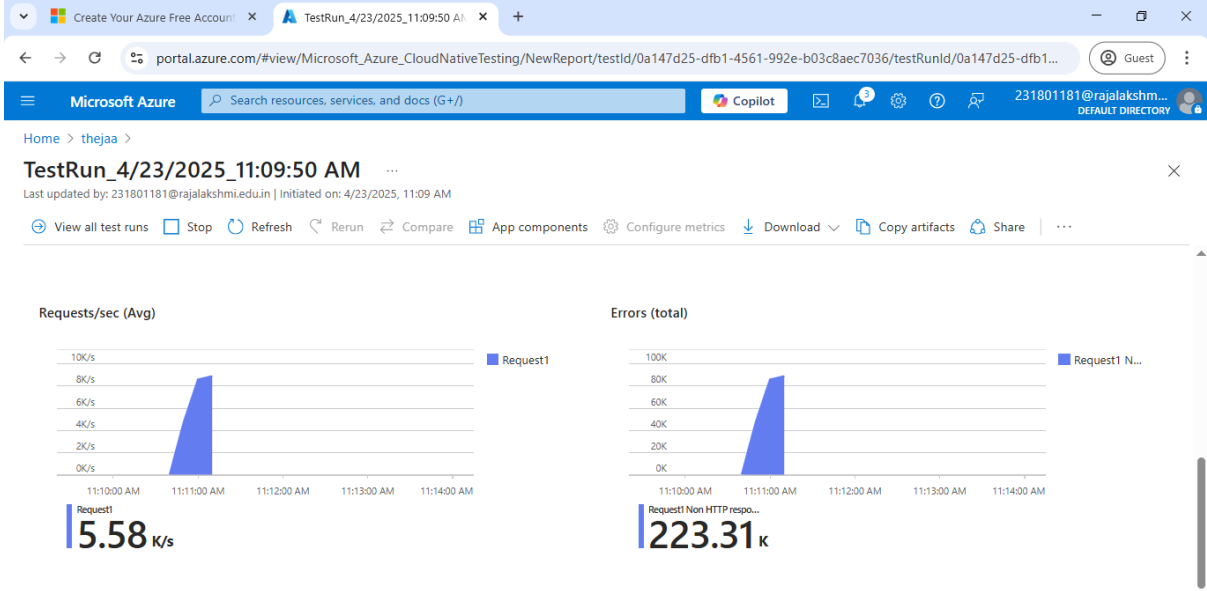
2. Create the Resource
 - Go to *Create a resource* → Search for “Azure Load Testing”.
 - Select Azure Load Testing and click Create.
3. Fill in the Configuration Details
 - *Subscription*: Choose your Azure subscription.
 - *Resource Group*: Create new or select an existing one.
 - *Name*: Provide a unique name (no special characters).
 - *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
 - *Test Name*: Provide a unique name.
 - *Description*: (Optional) Add test purpose.
 - *Run After Creation*: Keep checked.
3. Load Settings
 - *Test URL*: Enter the target endpoint (e.g., <https://yourapi.com/products>).
4. Click Review + Create → Create to start the test.

Load Testing

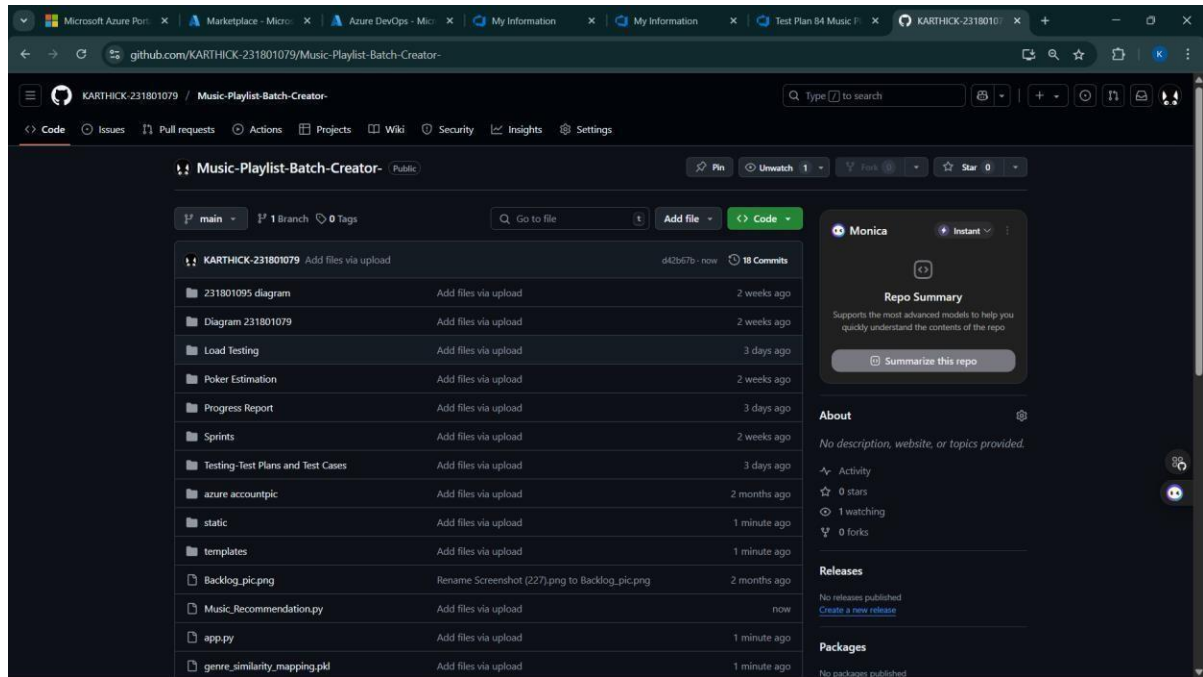


Result:

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

Aim:

To provide a clear and organized view of the project's folder structure and file naming conventions, helping contributors and users easily understand, navigate, and extend the Music Playlist Batch Creator project.

GitHub Project Structure**Result:**

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