



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

**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**LAB MANUAL**

**CS23432 – Software Construction**

**(REGULATION 2023)**

**RAJALAKSHMI ENGINEERING COLLEGE**  
**Thandalam, Chennai-602015**

Name: Abinaya M

Register No: 231001005

Year / Branch / Section: 2<sup>nd</sup> /IT/ FA

Semester: IV

Academic Year: 2024 - 2025

# INDEX

S.No.	Date	Title
1.	22/01/25	Azure Devops Environment Setup.
2.	07/02/25	Azure Devops Project Setup and User Story Management.
3.	14/02/25	Setting Up Epics, Features, And User Stories for Project Planning.
4.	20/03/25	Sprint Planning.
5.	28/03/25	Poker Estimation.
6.	04/04/25	Designing Class and Sequence Diagrams for Project Architecture.
7.	16/04/25	Designing Architectural and ER Diagrams for Project Structure.
8.	18/04/25	Testing – Test Plans and Test Cases.
9.	25/04/25	Load Testing and Pipelines.
10.	02/05/25	GitHub: Project Structure & Naming Conventions.

<b>Exp.No: 1</b>	<b>AZURE DEVOPS ENVIRONMENT SETUP</b>
<b>Date:22/01/2025</b>	

**AIM:** To set up and access the Azure DevOps environment by creating an organization through the Azure Portal.

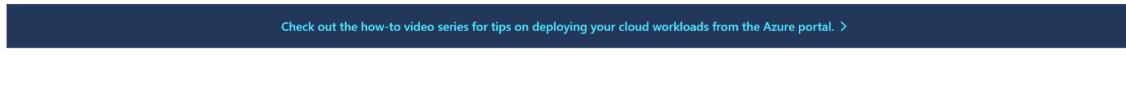
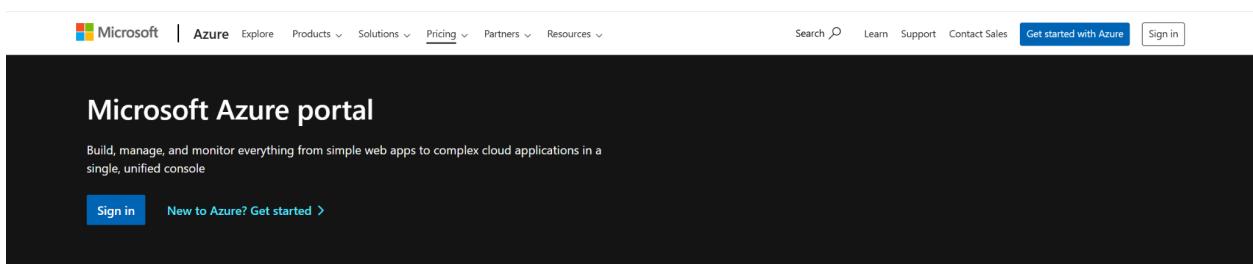
## INSTALLATION

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

<https://azure.microsoft.com/en-us/getstarted/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>



### Azure mobile app

Stay connected to your Azure resources—anytime, anywhere. Now available for iOS and Android.

[Learn more >](#)



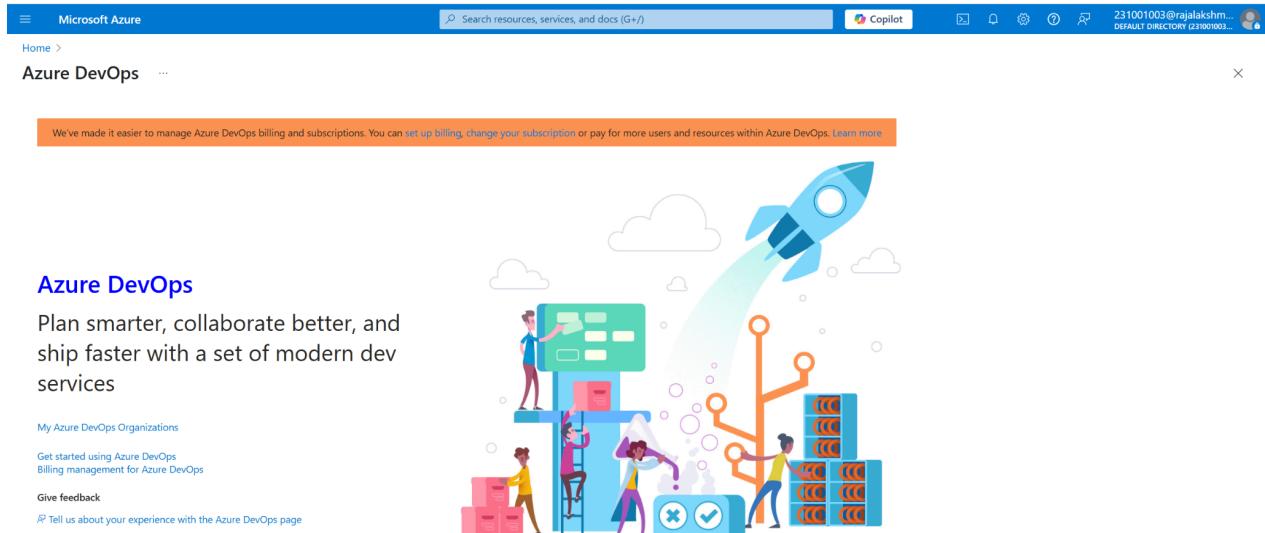
## 2. Azure home page

The screenshot shows the Microsoft Azure home page. At the top, there's a search bar and a Copilot button. Below the search bar, there's a row of service icons: Create a resource, Subscriptions, All resources, Azure DevOps organizations, Quickstart Center, Azure AI services, Kubernetes services, Virtual machines, App Services, and More services. The 'More services' icon is highlighted with a blue arrow. Underneath this is a section titled 'Resources' with tabs for 'Recent' and 'Favorite'. It lists two items: 'MYBANKAPP' (Azure Load Testing) and 'BankProject' (Resource group). Below this is a 'Navigate' section with links to Subscriptions, Resource groups, All resources, and Dashboard. A 'Tools' section follows, featuring Microsoft Learn, Azure Monitor, Microsoft Defender for Cloud, and Cost Management. The bottom of the page has a 'Useful links' section with links to Technical Documentation, Azure Services, Recent Azure Updates, and a 'Azure mobile app' section with links to the App Store and Google Play.

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

This screenshot is similar to the one above, but the search bar at the top contains the text 'devops'. The search results are displayed below the search bar, showing a list of services related to DevOps, such as Azure Native New Relic Service, Managed DevOps Pools, Azure DevOps organizations, and Azure Native Dynatrace Service. The rest of the page layout is identical to the first screenshot, including the service tiles, resource lists, and useful links.

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



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

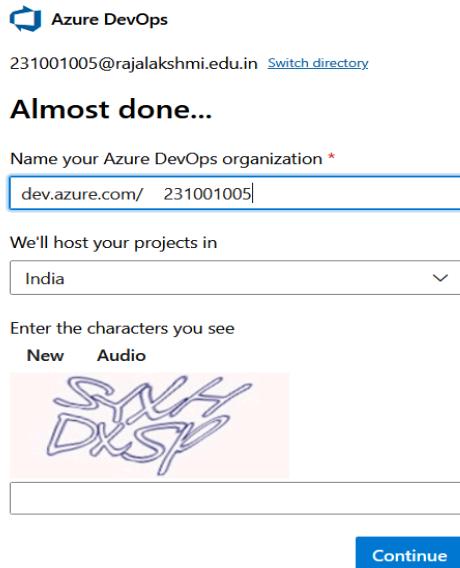
Exp.No: 2
Date: 07/02/2025

## AZURE DEVOPS PROJECT SET UP AND USER STORY MANAGEMENT

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

### STEPS:

- 1.Create An Azure Account



The screenshot shows the first step of creating an Azure DevOps organization. The title 'Almost done...' is displayed above a form field where the organization name 'dev.azure.com/ 231001005' is entered. Below this, a dropdown menu shows 'India' selected for hosting projects. A CAPTCHA image with the text 'SNH DXSP' is shown for verification. A 'Continue' button is at the bottom right.

Azure DevOps  
231001005@rajalakshmi.edu.in [Switch directory](#)

Almost done...

Name your Azure DevOps organization \*

dev.azure.com/ 231001005

We'll host your projects in

India

Enter the characters you see

New Audio

SNH DXSP

Continue

## 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** ×

Project name \*  
Online-BankingSystem

Description

Visibility

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

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

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

^ Advanced

Version control [?](#)  
Git

Work item process [?](#)  
Agile

Cancel Create

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

The screenshot shows the Azure DevOps Organizations home page. On the left, there is a user profile card for 'Abinaya Manivannan' with a red circular icon containing 'AM'. Below the icon, the name 'Abinaya Manivannan' and email '231001005@rajalakshmi.edu.in' are displayed, along with a 'Edit profile' button. A dropdown menu shows 'Microsoft account'. Below this, location information 'India' and email '231001005@rajalakshmi.edu.in' are listed. A 'Visual Studio Dev Essentials' section is present with a link to 'Use your benefits'. On the right, the main header reads 'Azure DevOps Organizations' with a 'Create new organization' button. Below it, the URL 'dev.azure.com/231001005' and the status '(Owner)' are shown. A 'Projects' section lists 'OnlineBankingSystem' with a 'New project' button. An 'Actions' section includes a 'Open in Visual Studio' button.

#### 4. Project dashboard

The screenshot shows the Azure DevOps project dashboard for 'OnlineBankingSystem'. The left sidebar contains navigation links: Overview, Summary, Dashboards, Wiki, Boards, Repos, Pipelines, Test Plans, and Artifacts. The 'Summary' link is currently selected. The main content area displays the 'About this project' section. It includes a 'Project Description' which states: 'This project is a modular Online Banking System designed to enhance the digital banking experience by providing secure and efficient financial services. The application is structured around key functional themes: Transfers and Services, Cards and Loans, Investments and Insurance.' Below this, a note says: 'Each module is independently manageable, ensuring scalability, and is designed with user experience and security in mind. The system promotes paperless, real-time banking operations with a focus on usability and reliability.' There are 'Like' and edit icons at the top right of the content area.

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 this user story.

The screenshot shows the Azure Boards interface for the 'OnlineBankingSystem' project. The left sidebar contains navigation links for Overview, Boards, Work items, Backlogs, Sprints, Queries, Delivery Plans, Analytics views, Repos, Pipelines, Test Plans, and Artifacts. The 'Backlogs' link is currently selected. The main area displays the 'Backlog' view for the 'OnlineBankingSystem Team'. At the top right are buttons for '+ New Work Item' and 'View'. Below the header is a table with columns: Order, Work Item Type, Title, State, Effort, Business, Value Area, and Tags. The table lists nine user stories, all of which are 'Epic' type and have a state of 'New'. The titles of the epics are: Account Management & Transactions, User Authentication & Account Access, Fund Transfers & Receipt Management, Bill Payments & Recharges, Debit Card, Credit Card, Loans, Insurance Services, and Investment Management.

Order	Work Item Type	Title	State	Effort	Business	Value Area	Tags
1	Epic	> Account Management & Transactions	New		Business		
2	Epic	> User Authentication & Account Access	New		Business		
3	Epic	> Fund Transfers & Receipt Management	New		Business		
4	Epic	> Bill Payments & Recharges	New		Business		
5	Epic	> Debit Card	New		Business		
6	Epic	> Credit Card	New		Business		
7	Epic	> Loans	New		Business		
8	Epic	> Insurance Services	New		Business		
9	Epic	> Investment Management	New		Business		

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

<b>Exp.No: 3</b>
<b>Date: 14/02/2025</b>

## **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.

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

EPIC 4

4 Account Management & Transactions

No one selected 0 Comments Add Tag

State: New Area: OnlineBankingSystem

Reason: New Iteration: OnlineBankingSystem\sprint 2

Save and Close Follow Details

Description

Click to add Description.

Planning

Priority: 2

Risk

Effort

Business Value

Time Criticality

Start Date

Select a date...

Target Date

Select a date...

Deployment

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

Discussion

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

switch to Markdown editor

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

Child

20 Account Details & Profile Management Updated Mar 27 New

21 Transactions & Deposits Updated Mar 27 New

9leek\_

## 2.Fill in Features

FEATURE 20

20 Account Details & Profile Management

No one selected 0 Comments Add Tag

State: New Area: OnlineBankingSystem  
Reason: New Iteration: OnlineBankingSystem\sprint 2

Planning

Priority: 2 Risk:

Deployment

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

Development

Add link

Link an Azure Repos [commit](#), [pull request](#) or [branch](#) to see the status of your development. You can also [create a branch](#) to get started.

Related Work

4 Account Management & Transactions Updated Mar 27 New

50 As a user, I want to be able to edit my acc... Updated 58m ago New

48 As a user, I want to view my account detail... Updated 1h ago New

Classification

Value area Business

Gleek

@geek\_

Description

Click to add Description.

Discussion

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

switch to Markdown editor

## 3.Fill in User Story Details

USER STORY 48

48 As a user, I want to view my account details (name, address, etc.) so that I can check my personal information.

Dhakshinya P 0 Comments Add Tag

State: New Area: OnlineBankingSystem  
Reason: New Iteration: OnlineBankingSystem\sprint 2

Planning

Story Points: 1 Risk:

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

20 Account Details & Profile Management Updated Mar 27 New

177 Create a profile page to display the user's... Updated 54m ago New

Classification

Value area Business

Gleek

@geek\_

Description

Click to add Description.

Acceptance Criteria

1. The account details page should display the user's name, email, address, and phone number.
2. The page should allow the user to update their profile information

Discussion

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

switch to Markdown editor

## 4.Fill in Task Details

The screenshot shows the details page for work item 177, titled "Create a profile page to display the user's personal information." The page is organized into several sections:

- Header:** Shows the work item ID (177), title, and a button to "Save and Close". It also includes a "Follow" button, a "Details" tab, and other navigation icons.
- Basic Information:** Includes fields for "State" (New), "Area" (OnlineBankingSystem), "Reason" (New), and "Iteration" (OnlineBankingSystem\sprint 2).
- Description:** A text area with placeholder text "Click to add Description."
- Planning:** Shows "Priority" (2) and "Activity".
- Deployment:** A note about tracking releases associated with the work item, linking to [Releases](#) and [Options menu](#).
- Discussion:** A comment input field with placeholder text "Add a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request." and a "switch to Markdown editor" link.
- Effort (Hours):** Shows "Original Estimate", "Remaining", and "Completed".
- Development:** A note about linking to Azure Repos, with links to [commit](#), [pull request](#), and [branch](#).
- Implementation:** Shows "Integrated in Build".
- Related Work:** A list with one item: "As a user, I want to view my account detail..." by user "Gleek" (48), updated 1h ago.
- Text Input:** A text input field containing "9|eek\_".

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

<b>Exp.No: 4</b>
<b>Date: 20/03/2025</b>

## **SPRINT PLANNING**

**AIM:** To assign user story to specific sprint for the Online Banking Project.

### **SPRINT PLANNING**

#### **Sprint 1**

The screenshot shows the Microsoft Azure Boards interface for the project "OnlineBankingSystem". The left sidebar includes links for Overview, Boards, Work items, Boards, Backlogs, Sprints (which is selected), Queries, Delivery Plans, and Analytics views. The top navigation bar has links for Did you notice Azure Boards has a new look and awesome new features? (Learn more), OnlineBankingSystem Team, Taskboard, Backlog, Capacity, Analytics, New Work Item, Column Options, and a date range from May 3 - June 3 with 22 work days remaining.

The main area displays the "Sprint 1" backlog. It lists four user stories under the "New" column:

- User Story 39: As a user, I want to buy health insurance so that I can cover my medical expenses. Assigned to Anu N.
- User Story 37: As a user, I want to view my insurance policies so that I can keep track of my coverage. Assigned to Anu N.
- User Story 36: As a user, I want to purchase life insurance so that I can protect my family's future. Assigned to Anu N.
- User Story 35: As a user, I want to view and manage my fixed deposits so that I can track my investments. Assigned to Anu N.

## Sprint 2

The screenshot shows the Azure Boards Taskboard for the OnlineBankingSystem Team. The backlog is organized into four columns: New, Active, Resolved, and Closed. The 'New' column contains the following items:

- #32 As a user, I want to transfer funds between my own accounts so that I can manage my money efficiently.  
● New  
Aarthi A P
- #34 As a user, I want to reset my password if I forget it so that I can regain access to my account.  
● New  
Dhakshinya P I
- #38 As a user, I want to generate a debit card PIN so that I can activate and use my card securely.  
● New  
Abinaya Manivannan
- #40 As a user, I want to send money to another user's account so that I can make payments easily.  
● New
- #163 Implement a backend API for internal account transfers.  
● New  
Aarthi A P
- #175 Create a "Forgot Password?" option on the login page.  
● New  
Dhakshinya P I
- #168 Design PIN generation interface  
● New  
Abinaya Maniv...
- #165 Implement validation for recipient account details.  
● New

The 'Backlog' tab is selected at the top. The sprint duration is listed as June 6 - July 5, 21 work days.

## Sprint 3

The screenshot shows the Azure Boards Backlog for the OnlineBankingSystem Team. The backlog is organized into a table with columns: Order, Title, State, Assigned To, and Rema... (partially visible). The items are:

Order	Title	State	Assigned To	Rema...
1	> #1 As a user, I want to be able to edit my account details so th... ● New	Dhakshinya P I		
2	> #1 As a user, I want to deposit money into my bank account so... ● New	Aarthi A P		
3	> #1 As a user, I want to view a detailed list of my transactions so... ● New	Aarthi A P		
4	> #1 As a user, I want to view the receipt after transferring funds ... ● New	Aarthi A P		
5	> #1 As a user, I want to recharge my mobile balance so that I ca... ● New	Aarthi A P		
6	> #1 As a user, I want to block my debit card so that I can stop u... ● New	Abinaya Maniv...		
7	> #1 As a user, I want to unblock my card if found so that I can r... ● New	Abinaya Maniv...		
8	> #1 As a user, I want to pay my electricity bill online so that I do... ● New	Aarthi A P		

The 'Backlog' tab is selected at the top. The sprint duration is listed as July 15 - August 10, 19 work days.

## Sprint 4

The screenshot shows the Microsoft Azure DevOps Backlog board for the 'OnlineBankingSystem Team'. The board is set to 'sprint 4' and displays 11 user stories. The columns are Order, Title, State, Assigned To, and Remaining. The user stories are as follows:

Order	Title	State	Assigned To	Remaining
1	> As a user, I want to view my credit card details so that I can ... ● New	New	Abinaya Maniv...	
2	> As a user, I want to see recent transactions so that I can mo... ● New	New	Aarthi A P	
3	> As a user, I want to pay my credit card bill so that I can avoi... ● New	New	Abinaya Maniv...	
4	> As a user, I want to get a confirmation after payment so tha... ● New	New	Aarthi A P	
5	> As a user, I want to save my frequently used mobile number... ● New	New	Dhakshinya P I	
6	> As a user, I want to apply for a credit card so that I can mak... ● New	New	Abinaya Maniv...	
7	> As a user, I want to get eligibility suggestions so that I apply... ● New	New	Abinaya Maniv...	
8	> As a user, I want to view my loan accounts so that I can che... ● New	New	Abinaya Maniv...	
9	> As a user, I want to see loan repayment schedules so that I ... ● New	New	Abinaya Maniv...	
10	> As a user, I want to apply for a loan so that I can meet finan... ● New	New	Abinaya Maniv...	
11	> As a user, I want to check eligibility before applying so that ... ● New	New	Abinaya Maniv...	

The backlog is dated from August 15 to September 10, spanning 19 work days. The board includes standard navigation tabs like Taskboard, Backlog, Capacity, and Analytics, along with options to New Work Item, Column Options, Create Query, and more.

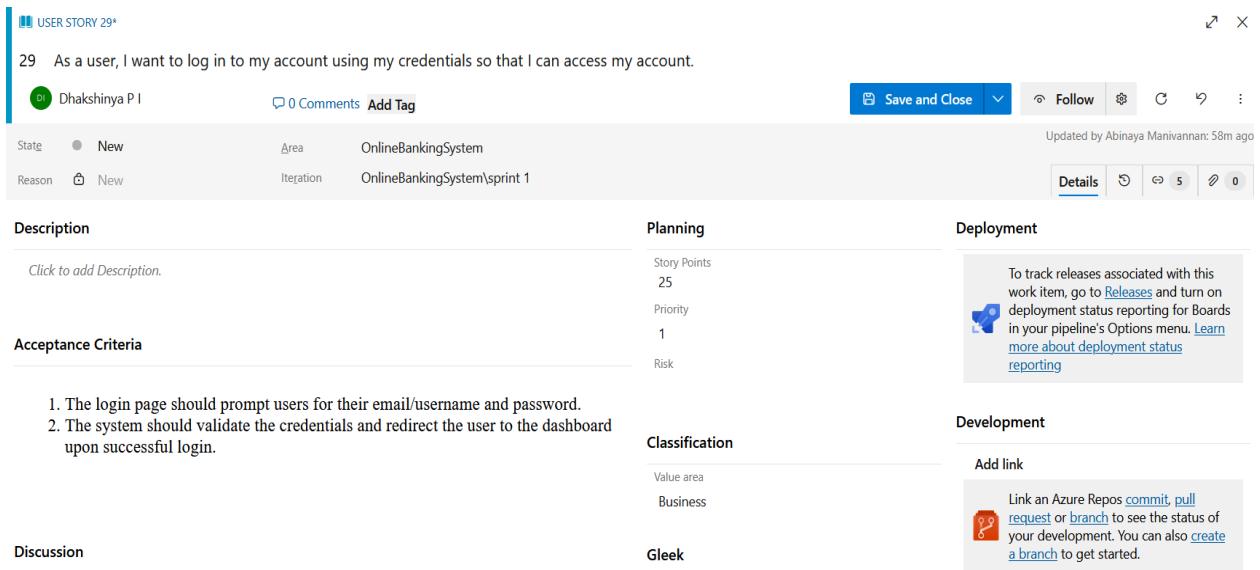
**RESULT:** The Sprints are created for the Online Banking Project.

<b>Exp.No: 5</b>
<b>Date: 28/03/2025</b>

## POKER ESTIMATION

**AIM:** Create Poker Estimation for the user stories - Online Banking System Project.

### POKER ESTIMATION



The screenshot shows a detailed view of a User Story card in Azure DevOps. The card is titled "USER STORY 29" and describes the requirement: "As a user, I want to log in to my account using my credentials so that I can access my account." The story was created by "Dhakshinya P I" and has "0 Comments" and "Add Tag" options. It is currently in the "New" state under "Area: OnlineBankingSystem" and "Iteration: OnlineBankingSystem\sprint 1". The "Save and Close" button is visible at the top right. The card includes sections for "Description" (with a placeholder "Click to add Description."), "Acceptance Criteria" (listing two items: "The login page should prompt users for their email/username and password." and "The system should validate the credentials and redirect the user to the dashboard upon successful login."), "Discussion" (empty), "Planning" (Story Points: 25, Priority: 1, Risk: 0), "Deployment" (instructions to track releases via Boards), "Classification" (Value area: Business), and "Gleek" (link to Azure Repos development status). The card was last updated by "Abinaya Manivannan" 58m ago.

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

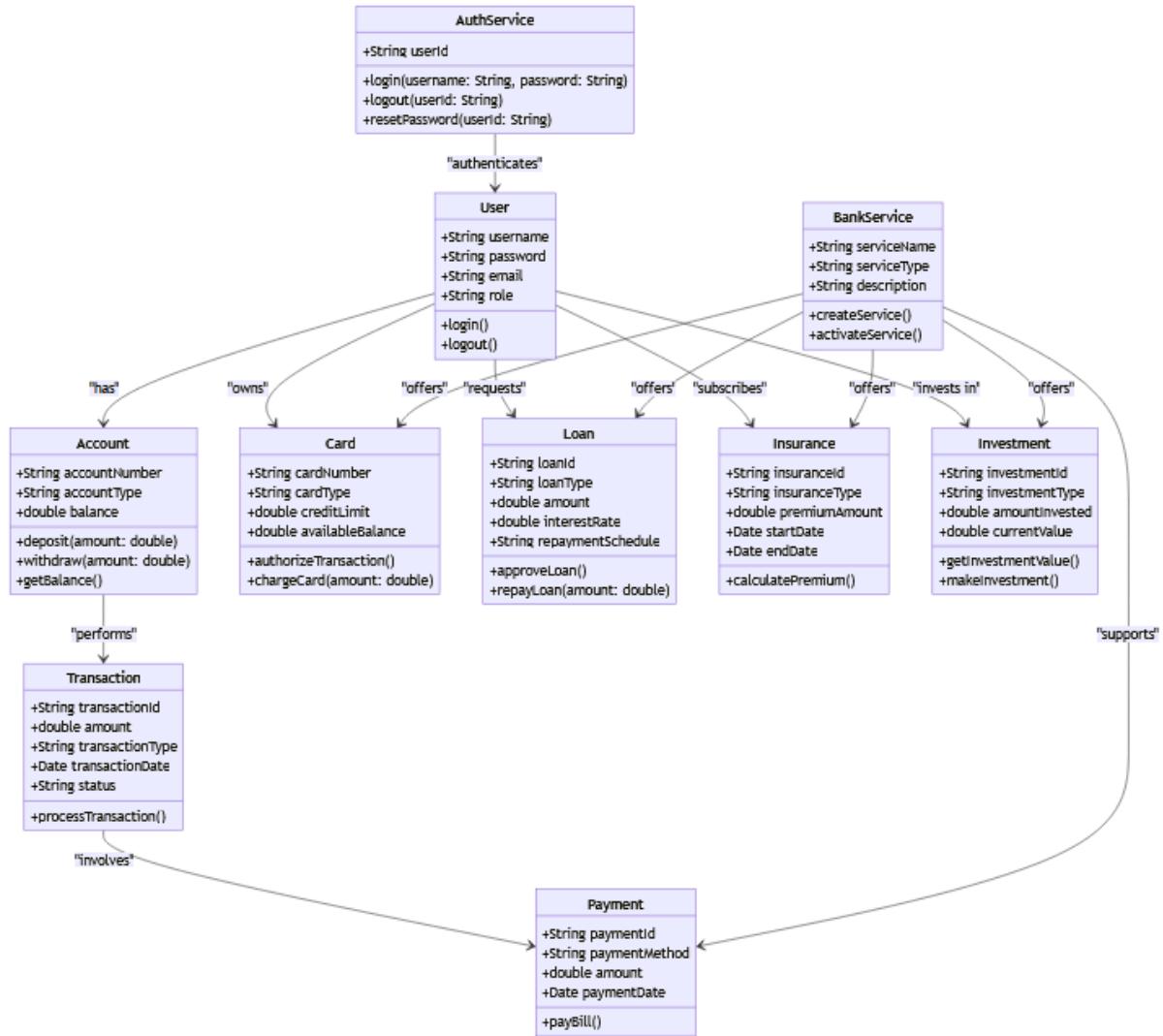
Exp.No: 6

Date: 04/04/2025

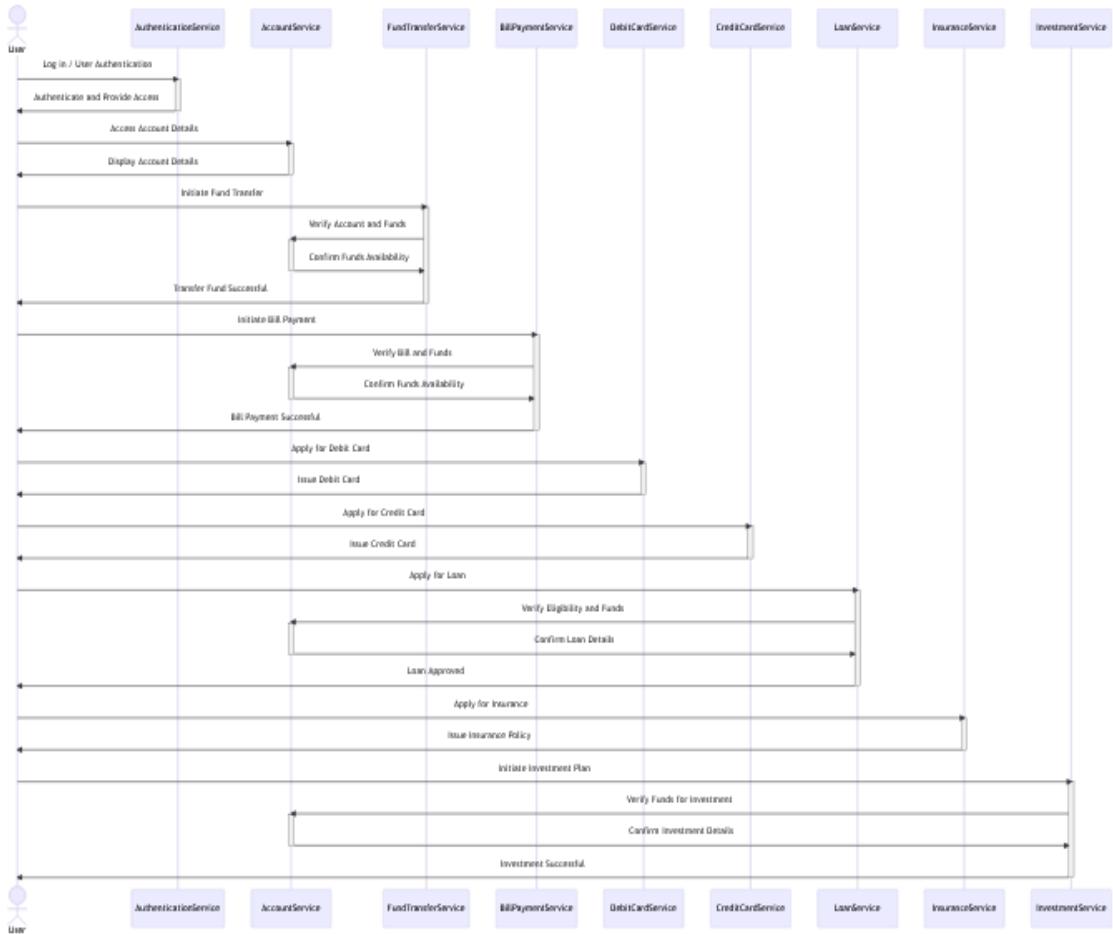
## DESIGNING CLASS DIAGRAM AND SEQUENCE DIAGRAMS FOR PROJECT ARCHITECTURE

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

### 6A. CLASS DIAGRAM



## 6B. SEQUENCE DIAGRAM



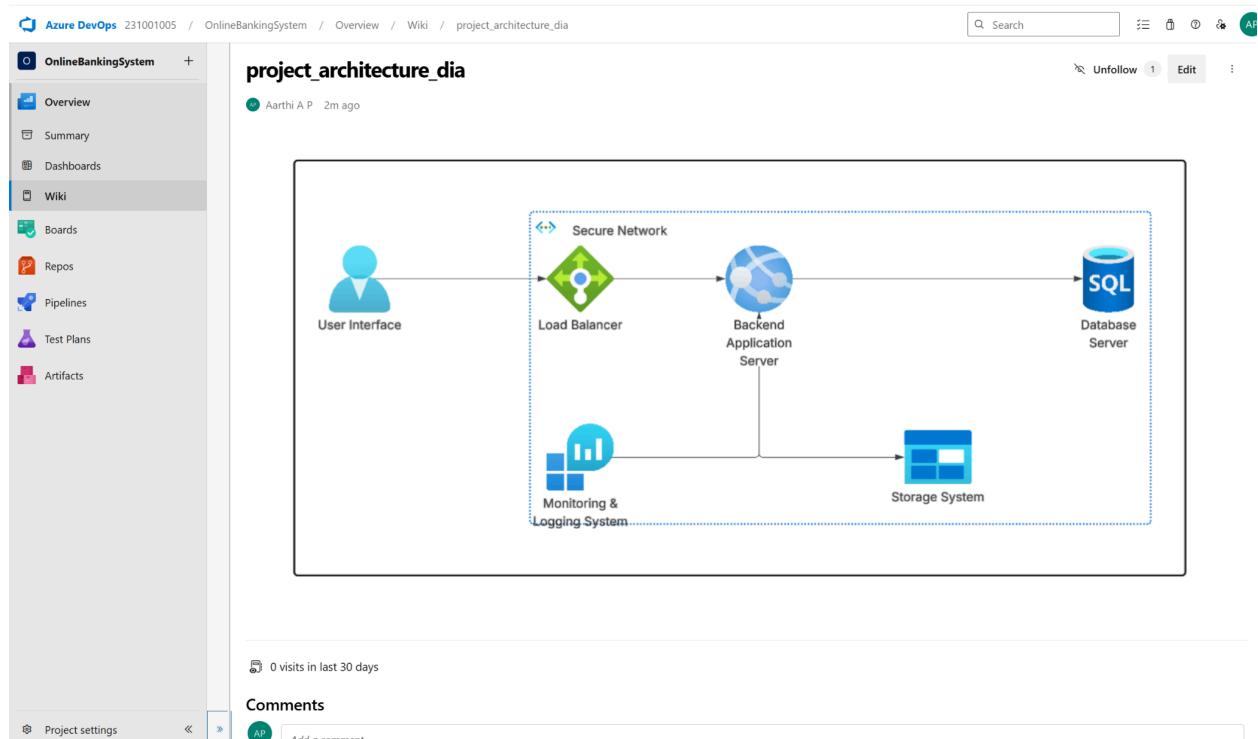
**RESULT:** The Class Diagram and Sequence Diagram is designed Successfully for the Online Banking System.

**Exp.No: 7**

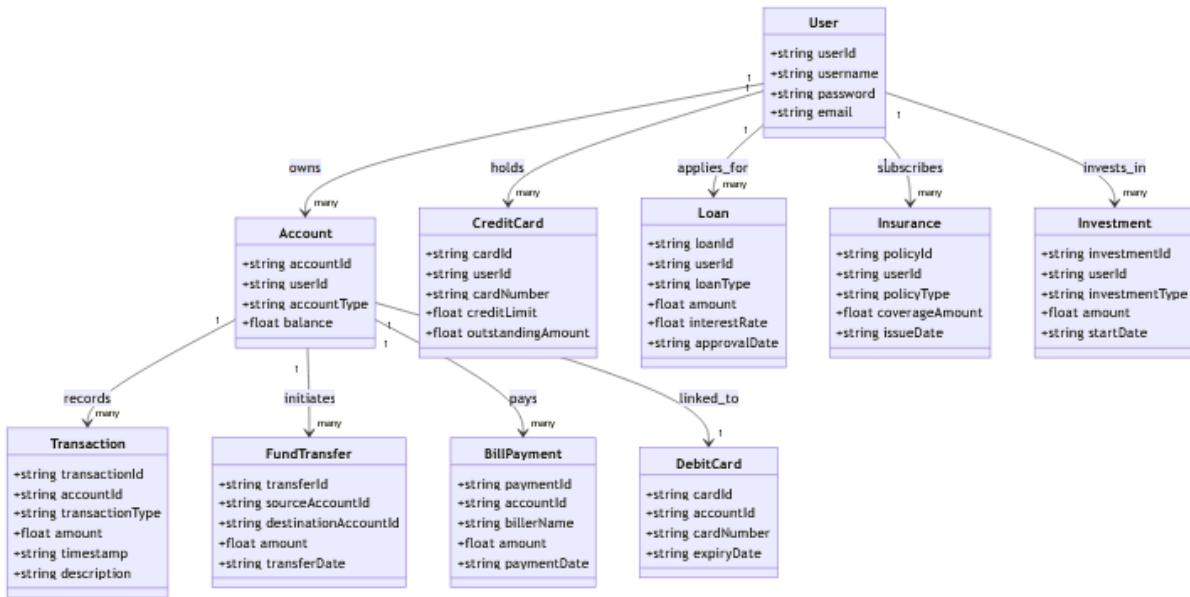
## **DESIGNING ARCHITECTURAL AND ER DIAGRAMS FOR PROJECT STRUCTURE**

**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 Online Banking System.

<b>Exp.No: 8</b>	<b>TESTING-TEST PLANS AND TEST CASES</b>
<b>Date: 18/04/2025</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

- User Authentication (Login, Forgot Password, MFA)
- Internal & External Fund Transfers
- Mobile Recharge and Bill Payments
- Debit/Credit Card Management (PIN generation, block/unblock, view)
- Loan and Insurance Services
- Investment Options (Mutual Funds, FDs)
- Account Dashboard (Balance, Transactions)

#### 2. Define User Interactions

Each test case reflects realistic user actions:

- Logging in securely
- Transferring funds to own or others' accounts
- Paying bills or recharging mobiles
- Blocking cards when lost
- Applying for loans or insurance

### 3. Design Happy Path Test Cases

- Focused on successful flows where inputs are valid and systems behave as expected.
- Examples:
  - User logs in with valid credentials
  - Transfers funds successfully
  - Views loan schedule or maturity details

### 4. Design Error Path Test Cases

- Focused on handling invalid, missing, or unexpected inputs.
- Examples:
  - Login fails due to incorrect password
  - Fund transfer fails due to insufficient balance
  - Card unblock denied without authentication

### 5. Break Down Steps and Expected Results

Each test case includes:

- Clear step-by-step actions
- Specific expected results for each step  
This ensures reproducibility and easy automation later.

### 6. Use Clear Naming and IDs

- Example:
  - TC01 – Login with Valid Credentials
  - TC05 – Fund Transfer Blocked (Insufficient Balance)
  - TC11 – Credit Card Bill Payment Successful
- Helps trace test cases to user stories and features in Azure DevOps

## 7. Separate Test Suites

Organize test cases based on functional modules:

- TS01 – User Authentication
- TS02 – Fund Transfers & Recharges
- TS03 – Cards & Loans
- TS04 – Investments & Insurance
- TS05 – Account Management & Security

### 1. New test plan

 New Test Plan

Name \*

Area Path \*

Iteration \*

Create Cancel

## 2.Test suite

The screenshot shows the Azure DevOps Test Plans interface. On the left, there's a sidebar with various project management and testing tools: Overview, Boards, Repos, Pipelines, Test Plans (selected), Test plans, Progress report, Parameters, Configurations, Runs, and Artifacts. The main content area is titled 'Online Banking System-Functional Validation Plan (ID: 191)'. It has tabs for Define, Execute, and Chart. Below the tabs is a search bar and a set of icons. A context menu is open over the 'Online Banking System-Functional Val...' suite, listing options: New Suite, Assign configurations, Export, Assign testers to run all tests, and Import test suites. The main area features a placeholder for adding a test case, featuring an illustration of a person painting on a canvas with a dog nearby. Below the illustration, it says 'Add a test case' and 'Use this tab to collate, add and manage test cases'. There's also a 'New Test Case' button.

## 3.Test case

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

Online Banking System– Test Plans

### User Stories – Banking Application

- **US199:** As a user, I want to securely log in to my bank account so I can view and manage my finances.
- **US200:** As a user, I want to transfer funds between my own accounts so that I can manage my money efficiently.
- **US196:** As a user, I want to generate a debit card PIN so that I can activate and use my card securely.
- **US198:** As a user, I want to open a fixed deposit so that I can earn guaranteed returns.
- **US201:** As a user, I want to pay my credit card bill so that I can avoid penalties.

## **TEST SUITE: TS01 – USER LOGIN (ID: 199)**

### **Test Case: TC01 – Login with Valid Credentials**

**User Story:** As a user, I want to securely log in to my bank account so I can view and manage my finances.

**Test Type:** Happy Path

#### **Steps and Expected Results:**

- **Action:** Navigate to the login page  
**Expected Result:** Login page is displayed with username and password fields
- **Action:** Enter valid username and password  
**Expected Result:** Input is accepted with no errors
- **Action:** Click the "Login" button  
**Expected Result:** User is redirected to the account dashboard

#### **Notes:**

Ensure the test user has an active bank account. This test simulates a successful login.

### **Test Case: TC02 – Login with Invalid Password**

**User Story:** As a user, I want to securely log in to my bank account so I can view and manage my finances.

**Test Type:** Error Path

#### **Steps and Expected Results:**

- **Action:** Navigate to the login page  
**Expected Result:** Login page is displayed
- **Action:** Enter valid username and incorrect password  
**Expected Result:** Password is rejected
- **Action:** Click the "Login" button  
**Expected Result:** Error message “Incorrect password” is shown

#### **Notes:**

Ensures failed login attempts are handled gracefully with proper error messages.

## **TEST SUITE: TS02 – FUND TRANSFER (ID: 200)**

### **Test Case: TC01 – Fund Transfer with Valid Inputs**

**User Story:** As a user, I want to transfer funds between my own accounts so that I can manage my money efficiently.

**Test Type:** Happy Path

#### **Steps and Expected Results:**

- **Action:** Log in and go to the "Fund Transfer" section  
**Expected Result:** Fund Transfer page is displayed
- **Action:** Select source and destination accounts, enter valid amount  
**Expected Result:** Amount is accepted; no validation error
- **Action:** Click "Transfer" and confirm the transaction  
**Expected Result:** Success message is shown and balances are updated

### **Test Case: TC02 – Fund Transfer with Insufficient Balance**

**User Story:** As a user, I want to transfer funds between my own accounts so that I can manage my money efficiently.

**Test Type:** Error Path

#### **Steps and Expected Results:**

- **Action:** Log in and go to the "Fund Transfer" section  
**Expected Result:** Fund Transfer page is displayed
- **Action:** Select source account with low balance, enter transfer amount greater than available balance  
**Expected Result:** Validation error or warning message is shown (e.g., "Insufficient balance")
- **Action:** Click "Transfer" and try to proceed  
**Expected Result:** Transaction is blocked, no funds are deducted

## TEST SUITE: TS03 – GENERATE DEBIT CARD PIN (ID: 196)

### Test Case: TC01 – Generate Debit Card PIN Successfully

**User Story:** As a user, I want to generate a debit card PIN so that I can activate and use my card securely.

**Test Type:** Happy Path

#### Steps and Expected Results:

- **Action:** Log in to the system and navigate to the "Generate Debit Card PIN" section  
**Expected Result:** The user is successfully logged in, and the "Generate Debit Card PIN" page or section is displayed
- **Action:** Enter the required card details (e.g., card number, expiry date), a new 4-digit PIN, and re-enter the same PIN for confirmation  
**Expected Result:** The system accepts the card details and both PIN entries without immediate error. The new and confirmation PIN entries should match
- **Action:** Click on "Generate PIN" and observe the system feedback  
**Expected Result:** The system initiates PIN generation and displays a success message: "Debit card PIN generated successfully."

### Test Case: TC02 – Generate Debit Card PIN with Mismatched Entries

**User Story:** As a user, I want to generate a debit card PIN so that I can activate and use my card securely.

**Test Type:** Error Path

#### Steps and Expected Results:

- **Action:** Log in to the system and navigate to the "Generate Debit Card PIN" section  
**Expected Result:** The user is successfully logged in, and the "Generate Debit Card PIN" page or section is displayed
- **Action:** Enter the required card details, a new 4-digit PIN, and re-enter a different 4-digit PIN for confirmation  
**Expected Result:** The system accepts the card details and both PIN entries without immediate error. The new PIN entered in the first instance is different from the confirmation PIN
- **Action:** Click on "Generate PIN" and observe the system feedback  
**Expected Result:** An error message is displayed indicating that the PINs do not match and the debit card PIN is not generated

## TEST SUITE: TS04 – OPEN FIXED DEPOSIT (ID: 198)

### Test Case: TC01 – Open Fixed Deposit with Valid Details

**User Story:** As a user, I want to open a fixed deposit so that I can earn guaranteed returns.

**Test Type:** Happy Path

#### Steps and Expected Results:

- **Action:** Log in to the system and navigate to the "Open Fixed Deposit" section  
**Expected Result:** The user is successfully logged in, and the "Open Fixed Deposit" page or section is displayed, showing options for deposit type and tenure
- **Action:** Select a deposit type and tenure, enter a valid deposit amount within the allowed range, and select the funding account  
**Expected Result:** The system accepts the selections and the entered deposit amount without immediate errors. The available funding accounts are displayed for selection
- **Action:** Review the terms and conditions and confirm the fixed deposit creation  
**Expected Result:** Upon confirmation, a success message is displayed and the details of the newly created fixed deposit are shown or accessible to the user

### Test Case: TC02 – Open Fixed Deposit with Invalid Amount

**User Story:** As a user, I want to open a fixed deposit so that I can earn guaranteed returns.

**Test Type:** Error Path

#### Steps and Expected Results:

- **Action:** Log in to the system and navigate to the "Open Fixed Deposit" section  
**Expected Result:** The user is successfully logged in, and the "Open Fixed Deposit" page or section is displayed, showing options for deposit type and tenure
- **Action:** Select a deposit type and tenure, and enter a deposit amount that is below the minimum allowed limit  
**Expected Result:** The system accepts the deposit type and tenure selections and allows the user to enter the deposit amount
- **Action:** Attempt to proceed with the fixed deposit creation  
**Expected Result:** The system prevents the creation of the fixed deposit. An error message is displayed to the user indicating that the entered amount is below the minimum allowed limit

## **TEST SUITE: TS05 – CREDIT CARD BILL PAYMENT (ID: 201)**

### **Test Case: TC01 – Pay Credit Card Bill Successfully**

**User Story:** As a user, I want to pay my credit card bill so that I can avoid penalties.

**Test Type:** Happy Path

#### **Steps and Expected Results:**

- **Action:** Log in, go to "Credit Card Payment," and select the card  
**Expected Result:** The user logs in successfully, and the "Credit Card Payment" section displays the user's credit card(s) for selection
- **Action:** Enter a valid payment amount and choose a payment method (e.g., bank account)  
**Expected Result:** The system accepts the payment amount (within the limit) and displays available payment methods for the user to choose from
- **Action:** Confirm the payment details and click "Pay Now"  
**Expected Result:** A success message appears ("Credit card bill payment successful."), and the credit card balance is updated to reflect the payment

### **Test Case: TC02 – Pay Credit Card Bill with Excess Amount**

**User Story:** As a user, I want to pay my credit card bill so that I can avoid penalties.

**Test Type:** Error Path

#### **Steps and Expected Results:**

- **Action:** Log in, go to "Credit Card Payment," and select the card  
**Expected Result:** The user logs in successfully, and the "Credit Card Payment" section displays the user's credit card(s) for selection
- **Action:** Enter a payment amount that is greater than the displayed outstanding balance  
**Expected Result:** The system accepts the entered amount. It might immediately show a warning or allow proceeding to the next step
- **Action:** Attempt to proceed with the payment  
**Expected Result:** The system prevents processing the payment. An error or warning message is shown

## Test Cases

TEST CASE 202\*

202 Successful Pin Generation

Abinaya Manivannan 0 Comments Add Tag

State: Design Area: OnlineBankingSystem  
Reason: New Iteration: OnlineBankingSystem\sprint 1

Save and Close Follow Associated Automation

Updated by Abinaya Manivannan: 24m ago

Steps | Summary | Associated Automation

Custom Test Type Happy Path

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.

Steps

Steps	Action	Expected result	Attach
1.	Log in to the system and navigate to the "Generate Debit Card PIN" section.	The user is successfully logged in, and the "Generate Debit Card PIN" page or section is displayed.	
2.	Enter the required card details (e.g., card number, expiry date), a new 4-digit PIN, and re-enter the same PIN for confirmation.	The system accepts the card details and both PIN entries without immediate error. The new and confirmation PIN entries should match.	
3.	Click on "Generate PIN" and observe the system feedback.	The system initiates PIN generation and displays a success message: "Debit card PIN generated successfully."	

Click or type here to add a step

Parameter values

NEW TEST CASE \*

Fund Transfer

Aarthi A P 0 Comments Add Tag

State: Design Area: OnlineBankingSystem  
Reason: New Iteration: OnlineBankingSystem\sprint 1

Save and Close Associated Automation

Steps | Summary | Associated Automation

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.

Steps

Steps	Action	Expected result	At
1.	Log in and go to the "Fund Transfer" section	Fund Transfer page is displayed	
2.	Select source and destination accounts, enter valid amount	Amount is accepted; no validation error	
3.	Click "Transfer" and confirm the transaction	Success message is shown and balances are updated	

Click or type here to add a step

Parameter values

**NEW TEST CASE \***

### Fund Transfer – Insufficient Balance

Aarthi A P 0 Comments Add Tag Save and Close

State	Design	Area	OnlineBankingSystem
Reason	New	Iteration	OnlineBankingSystem\sprint 1

**Steps**

Steps	Action	Expected result	At
1.	Log in and go to the "Fund Transfer" section	Fund Transfer page is displayed	
2.	Select source account with low balance, enter transfer amount greater than available balance	Validation error or warning message is shown (e.g., "Insufficient balance")	
3.	Click "Transfer" and try to proceed	Transaction is blocked, no funds are deducted	

*Click or type here to add a step*

**Custom**  
Test Type: Error Path

**Deployment**

**Development**

**Related Work**

**Status**  
Priority: 2  
Automation status: Not Automated

**Gleek**  
9|eek\_

**Parameter values**

**TEST CASE 204\***

### 204 Fund Transfer

Aarthi A P 0 Comments Add Tag Save and Close Follow Updated by Aarthi A P: 5m ago

State	Design	Area	OnlineBankingSystem
Reason	New	Iteration	OnlineBankingSystem\sprint 1

**Steps**

Steps	Action	Expected result	At
1.	Log in and go to the "Fund Transfer" section	Fund Transfer page is displayed	
2.	Select source and destination accounts, enter valid amount	Amount is accepted; no validation error	
3.	Click "Transfer" and confirm the transaction	Success message is shown and balances are updated	

*Click or type here to add a step*

**Custom**  
Test Type: Happy Path

**Deployment**

**Development**

**Related Work**

**Status**  
Priority: 2  
Automation status: Not Automated

**Gleek**  
9|eek\_

**Parameter values**

NEW TEST CASE \*

PIN mismatch during generation

Abinaya Manivannan 0 Comments Add Tag

State Design Area OnlineBankingSystem  
Reason New Iteration OnlineBankingSystem\sprint 1

Save and Close

Steps Summary Associated Automation

**Steps**

Steps Action Expected result Attach

1. Log in to the system and navigate to the "Generate Debit Card PIN" section.
2. Enter the required card details, a new 4-digit PIN, and re-enter a *different* 4-digit PIN for confirmation.
3. Click on "Generate PIN" and observe the system feedback.

The user is successfully logged in, and the "Generate Debit Card PIN" page or section is displayed.

The system accepts the card details and both PIN entries without immediate error. The new PIN entered in the first instance is different from the confirmation PIN entered in the second instance.

An error message is displayed to the user indicating that the PIN do not match and the debit card PIN is *not generated*.

Parameter values

**Custom**

Test Type Error Path

**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.

## 4. Installation of test

### Test and feedback

chrome web store

Discover Extensions Themes

Search extensions and themes

**Test & Feedback**

Featured 4.2 ★ (175 ratings) Share

Add to Chrome

Extension Workflow & Planning 200,000 users

Capture & Annotate

**CAPTURE**

New bug

Incorrect phone price

1. Screenshots  
2. Notes  
3. Screen recordings & Videos  
4. Image action log  
5. Page load data

Overview

## Showing it as an extension

The screenshot shows the Azure DevOps Test Plans interface for the OnlineBankingSystem project. The left sidebar is visible with options like Overview, Boards, Repos, Pipelines, Test Plans, Test plans, Progress report, Parameters, Configurations, Runs, and Artifacts. The 'Test plans' option is selected. The main area displays a test suite named 'TS01 : As a user, I want to log in to my account using my credentials (199)'. Below it, there are sections for 'Test Suites' and 'Test Cases (2 items)'. A modal window titled 'Extensions' is open in the top right corner, showing 'Full access' and listing extensions: McAfee® WebAdvisor and Test & Feedback. It also includes a 'Manage extensions' button.

Test Cases (2 items)

Order	Test Case Id	Assigned To
1	208	Dhakshinya P I D
2	210	Dhakshinya P I D

## 5. Running the test cases

The screenshot shows the Azure DevOps Test Plans interface for the OnlineBankingSystem project. The left sidebar is collapsed, and the main area displays a test suite named "Online Banking System-Fun...". The suite contains two items: "TS02 : As a user, I want to transfer funds between my own accounts so that I can manage my money efficiently. (ID: 200)" and "TS03 : As a user, I want to gen...". Below these are several other test cases like TS03, TS04, TS01, TS02, and TS05. The "Execute" tab is selected. On the right, the "Test Points (2 items)" section is shown with a table:

Title	Outcome	Order	Test Case Id
Fund Transfer-Valid Balance	Passed	1	204
Fund Transfer – Insufficient Balance	Failed	2	205

The screenshot shows a Firefox browser window titled "Runner - Test Plans — Mozilla Firefox" running a test case. The URL is https://dev.azure.com/231001005/OnlineBankingSystem/\_testExecution/Index. The page displays a step titled "211: Successful credit card bill payment" with the following details:

**Step Description:** Log in, go to "Credit Card Payment," and select the card.

**EXPECTED RESULT:** The user logs in successfully, and the "Credit Card Payment" section displays the user's credit card(s) for selection.

**Step Description:** Enter a valid payment amount and choose a payment method (e.g., bank account).

**EXPECTED RESULT:** The system accepts the payment amount (within the limit) and displays available payment methods for the user to choose from.

**Step Description:** Confirm the payment details and click "Pay Now".

**EXPECTED RESULT:** A success message appears ("Credit card bill payment successful."), and the credit card balance is updated to reflect the payment.

## 6.Recording the test case

The screenshot shows the Azure Test Execution interface. A recorded test case for 'Fund Transfer-Valid Balance' is displayed. The test steps and their expected results are listed:

- Log in and go to the "Fund Transfer" section  
EXPECTED RESULT: Fund Transfer page is displayed
- Select source and destination accounts, enter valid amount  
EXPECTED RESULT: Amount is accepted; no validation error
- Click "Transfer" and confirm the transaction  
EXPECTED RESULT: Success message is shown and balances are updated

A modal window titled 'Choose what to share with Test & Feedback' is open, showing options for 'Chrome Tab', 'Window', and 'Entire Screen'. The 'Entire Screen' option is selected, and a preview of the recorded session is shown.

## 7.Creating the bug

The screenshot shows the Azure DevOps 'New Bug' creation interface. The bug is titled 'BUG\_NO\_1' and is assigned to 'Unassigned'. The bug details include:

**State:** New  
**Reason:** New  
**Area:** OnlineBankingSystem  
**Iteration:** OnlineBankingSystem\sprint 1

**Severity:** 3 - Medium  
**Activity:**

**Effort (Hours):**

**Related Work:**

**Gleek:** 9|eek\_-

**System Info:**

Browser - Name	Google Chrome 136
Browser - Language	en-US
Browser - Height	1062
Browser - Width	1664
Browser - User Agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/136.0.0.0 Safari/537.36
Operating system - Name	Windows NT 10.0; Win64; x64
Operating system - Architecture	x86_64
Operating system - Processor model	12th Gen Intel(R) Core(TM) i7-1255U
Operating system - Number of processors	12
Memory - Available	638291968
Memory - Capacity	8405794816
Display - Pixels per inch (X axis)	144
Display - Pixels per inch (Y axis)	144

**BUG\_NO\_2**

**Repro Steps**

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

1. Failed Navigate to the login page  
Expected Result  
Login page is displayed
2. Failed Enter valid email/username and **incorrect** password  
Expected Result  
Input is accepted, but error is expected
3. Failed Click the "Login" button  
Expected Result  
Login fails, and error message is shown (e.g., "Incorrect password")

**Planning**

Resolved Reason  
Story Points  
Priority  
Severity  
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  
Parent  
29 As a user, I want to log in to my account ... Updated 7 hours ago, New

210 Login with Incorrect Password (Error Path...) Updated 30 minutes ago, Design

**Gleek**

**System Info**

## 8. Test case results

**Test Plan 190 Online Banking S...**

**OnlineBankingSystem**

**Test Suites**

**TS03 : As a user, I want to generate**

**Test Case Results**

Outcome	TimeSta...	Configuration	Run by	Tester	Test
Passed	Just now	Windows 10	Abinaya Maniv...	Abinaya Maniv...	Onli...
Failed	Just now	Windows 10	Abinaya Maniv...	Abinaya Maniv...	Onli...
Passed	21m ago	Windows 10	Abinaya Maniv...	Abinaya Maniv...	Onli...
Passed	26m ago	Windows 10	Abinaya Maniv...	Abinaya Maniv...	Onli...

[Open execution history for current test point](#)

## 9. Test report summary

The screenshot shows the Azure DevOps interface for the 'OnlineBankingSystem' project. The left sidebar is collapsed, and the main area displays a work item titled 'BUG\_213'. The work item details are as follows:

- Title:** BUG\_213\*
- State:** New
- Area:** OnlineBankingSystem
- Reason:** New
- Iteration:** OnlineBankingSystem\sprint 1

**Repro Steps:**

Step	Result	Title
1.	Passed	Log in and go to the "Fund Transfer" section Expected Result Fund Transfer page is displayed
2.	Failed	Select source account with low balance, enter transfer amount greater than available balance Expected Result Validation error or warning message is shown (e.g., "Insufficient balance")
3.	Failed	Click "Transfer" and try to proceed

**Planning:**

- Resolved Reason
- Story Points
- Priority: 2
- Severity: 3 - Medium
- Activity

**Deployment:**

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

**Development:**

Add link

Link an Azure Repos [commit](#), [pull request](#) or [branch](#) to see the status of your development. You can also [create a branch](#) to get started.

**Effort (Hours):**

- Original Estimate
- Remaining
- Completed

**Related Work:**

- Assigning bug to the developer and changing state

The screenshot shows the same Azure DevOps interface after changes have been made to the work item. The work item details are now:

- Title:** BUG\_213
- State:** New
- Area:** OnlineBankingSystem
- Reason:** Aarthi A P
- Iteration:** OnlineBankingSystem\sprint 1

**Repro Steps:**

Step	Result	Title
1.	Passed	Log in and go to the "Fund Transfer" section Expected Result Fund Transfer page is displayed
2.	Failed	Select source account with low balance, enter transfer amount greater than available balance Expected Result Validation error or warning message is shown (e.g., "Insufficient balance")
3.	Failed	Click "Transfer" and try to proceed

**Planning:**

- Resolved Reason
- Story Points
- Priority: 2
- Severity: 3 - Medium
- Activity

**Deployment:**

To track releases associated with this work item, go to [Releases](#) and turn on deployment status reporting for Boards in your pipeline's Options menu. [Learn more about deployment status reporting](#)

**Development:**

Add link

Link an Azure Repos [commit](#), [pull request](#) or [branch](#) to see the status of your development. You can also [create a branch](#) to get started.

**Effort (Hours):**

- Original Estimate
- Remaining
- Completed

**Related Work:**

## 10. Progress report

Screenshot of the Azure DevOps Test Plans Progress report page for the OnlineBankingSystem project.

The left sidebar shows the following navigation:

- Overview
- Boards
- Repos
- Pipelines
- Test Plans
- Test plans
- Progress report** (selected)
- Parameters
- Configurations
- Runs
- Artifacts

The main content area displays the following information:

### Summary

- 1 Test plans
- 10 Test points
- 10 (10 / 10) Test points run (100% Run)
- 6 Passed (green) and 4 Failed (red) Pass rate

### Outcome trend

Last 14 Days

Date	Passed	Failed
2025-04-21	0	0
2025-04-22	0	0
2025-04-23	0	0
2025-04-24	0	0
2025-04-25	0	0
2025-04-26	0	0
2025-04-27	0	0
2025-04-28	0	0
2025-04-29	0	0
2025-04-30	0	0
2025-05-01	0	0
2025-05-02	0	0
2025-05-03	0	0
2025-05-04	10	0
2025-05-05	10	0

### Details

Test plan name	Test points	Run %	Passed %	Failed %	Not run count
Online Banking System-Functional Validation Plan	10	100	60	40	0

Screenshot of the Azure DevOps Test Plans Progress report page for the Online Banking System-Functional Validation Plan.

The top navigation bar includes the project name, test plan name, and user "Abinaya Manivannan".

The main content area displays the following information:

### Summary

- 1 Test plans
- 4 Test points
- 4 (4 / 4) Test points run (100% Run)
- 2 Passed (green) and 2 Failed (red) Pass rate

### Outcome trend

Last 14 Days

Date	Passed	Failed
2025-04-21	0	0
2025-04-22	0	0
2025-04-23	0	0
2025-04-24	0	0
2025-04-25	0	0
2025-04-26	0	0
2025-04-27	0	0
2025-04-28	0	0
2025-04-29	0	0
2025-04-30	0	0
2025-05-01	0	0
2025-05-02	0	0
2025-05-03	0	0
2025-05-04	2	2
2025-05-05	2	2

## 11.Changing the test template

The screenshot shows the Azure DevOps Organization Settings interface. On the left, there's a sidebar with sections like General, Security, and Boards. The main area is titled 'All processes' and lists several process templates:

Name	Description	Team projects
Basic (default)	This template is flexible for any process and great for teams getting started with Az...	0
Agile	This template is flexible and will work great for most teams using Agile planning me...	0
231001005 Agile	...	1
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 improv...	0

## 12.View the new test case template

The screenshot shows the 'Add a field to Test Case' dialog. On the left, there's a sidebar with tabs for Definition, Options, and Layout. The main area has a heading 'Add a field to store custom, queryable data about your work items.' and two options:

- Use an existing field  
Field: Acceptance Criteria
- Create a field  
Name: Test Type  
Type: Text (single line)  
Description: Optionally provide a description for the field

At the bottom, there are 'Learn more' and 'Add field' buttons.

The screenshot shows the Azure DevOps Organization Settings page for process configuration. The left sidebar lists categories like General, Security, Boards, and Process. The main area shows the 'Test Case' field being edited under the 'Layout' tab. The 'Steps' section is selected, and the 'Custom' section contains fields for 'Test Type' (Text (single line)) and 'Recent test results'. Other sections like 'Deployment', 'Development', and 'Related Work' are also visible. A 'Search' bar and various navigation icons are at the top right.

**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>
<b>Date: 25/04/2025</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.

Microsoft Azure

Home > Create a resource > Marketplace > Azure Load Testing >

### Create a load testing resource

Basics    Encryption    Tags    Review + create

Azure Load Testing is a fully managed load-testing service that makes it easy to generate high-scale load and identify performance bottlenecks. [Learn more](#)

**Project details**  
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription: Azure for Students  
Resource group: (New) BankProject

**Instance details**  
Name: MYBANKAPP  
Region: East Asia

Previous    Next    Review + create

Microsoft Azure

Home > Create a resource > Marketplace > Azure Load Testing >

### Create a load testing resource

Validation passed.

Basics    Encryption    Tags    Review + create

**Basics**  
Subscription: Azure for Students  
Resource group: BankProject  
Name: MYBANKAPP  
Region: East Asia

**Encryption**  
Encryption type: MMK

Microsoft Azure

Microsoft.CloudNativeTesting1746461401491 | Overview

Deployment

Search    Delete    Cancel    Redeploy    Download    Refresh

**Overview**

Your deployment is complete

Deployment name: Microsoft.CloudNativeTesting1746461401491  
Subscription: Azure for Students  
Resource group: BankProject

**Deployment details**

Start time: 5/5/2025, 9:40:23 PM  
Correlation ID: ab036e0a-0f70-4d67-9550-f59c511ecd62

**Next steps**

Go to resource

**Give feedback**  
Tell us about your experience with deployment

**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**  
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.  
[Find an Azure expert >](#)

## 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.

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Microsoft.CloudNativeTesting1746461401491 | Overview > MYBANKAPP

Create a URL-based test ...

Basics Test plan Parameters Load Monitoring Test criteria Review + create

Get started by creating a test for a URL, or configure an advanced load test for multiple URLs with additional options. [Learn more](#)

**Test details**

Provide a test name and a description. Test name and description will help you identify a test in the list of tests created in this resource.

Test name \*

Test description

Run test after creation

Debug mode   
If this is enabled, the first test run will run in debug mode providing debug logs along with request and response data for failed requests. The test run in debug mode will run with only one engine and up to 10 minutes duration. [Learn more](#)

Enable advanced settings

Configure a test with multiple requests in the 'Test plan' tab.

Previous Next Review + create

**Create a URL-based test ...**

Validation passed.

Basics Test plan Parameters Load Monitoring Test criteria Review + create

**Basics**

Test tool JMeter  
Test name Test\_5/5/2025,9:41:40 PM  
Test description  
Debug mode Disabled

**Test plan**

Test method URL  
Requests Request1  
Input data files

**Load**

Engine instances 1  
Load pattern Linear  
Concurrent users per engine 50  
Test duration (minutes) 20  
Ramp-up time (minutes) 1

**Load distribution**

East Asia 1

**Resources**

Resources 0

Previous Next Create

## Load Testing

Home > MYBANKAPP | Tests > Test\_5/5/2025\_9:41:40 PM >

**TestRun\_5/5/2025\_10:06:05 PM** ...

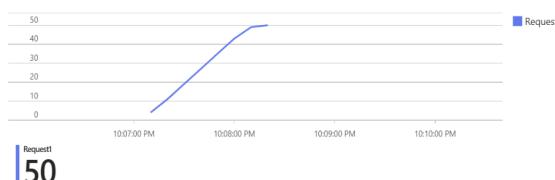
Last updated by: 231001003@rajalakshmi.edu.in | Initiated on: 5/5/2025, 10:06 PM

[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](#)

### Client-side metrics

Requests : All Region : 0 Aggregation : P90 Error type : All Time range : 5/5/2025, 10:06:08 PM - 5/5/2025, 10:07:15 PM Group by : 10s

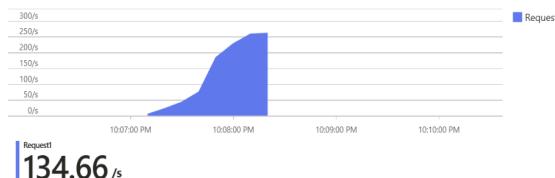
#### Virtual Users (Max)



#### Response time (successful responses)



#### Requests/sec (Avg)



#### Errors (total)



### Server-side metrics

Home > MYBANKAPP | Tests > Test\_5/5/2025\_9:41:40 PM >

**TestRun\_5/5/2025\_10:06:05 PM** ...

Last updated by: 231001003@rajalakshmi.edu.in | Initiated on: 5/5/2025, 10:06 PM

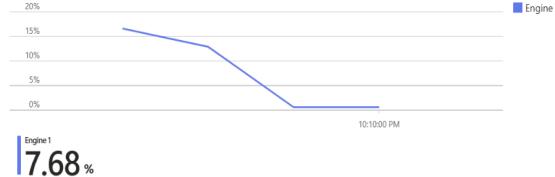
[View all test runs](#) [Stop](#) [Refresh](#) [Rerun](#) [Compare](#) [App components](#) [Configure metrics](#) [Download](#) [Copy artifacts](#) [Share](#) | [Delete test run](#) [Mark as baseline](#) [Auto refresh on \(10s\)](#)

#### Load engine nearn metrics

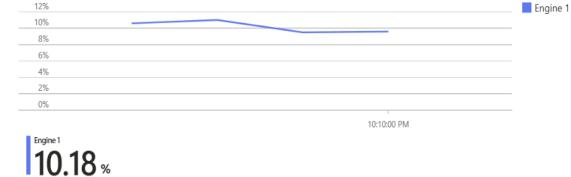
Monitor and troubleshoot the performance of the load test engines. [Learn more](#)

EEngines : All Time range : 5/5/2025, 10:06:08 PM - 5/5/2025, 10:10:12 PM Group by : 1m Regions : 0

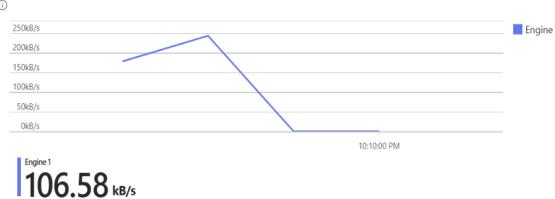
#### CPU percentage (Avg)



#### Memory percentage (Avg)

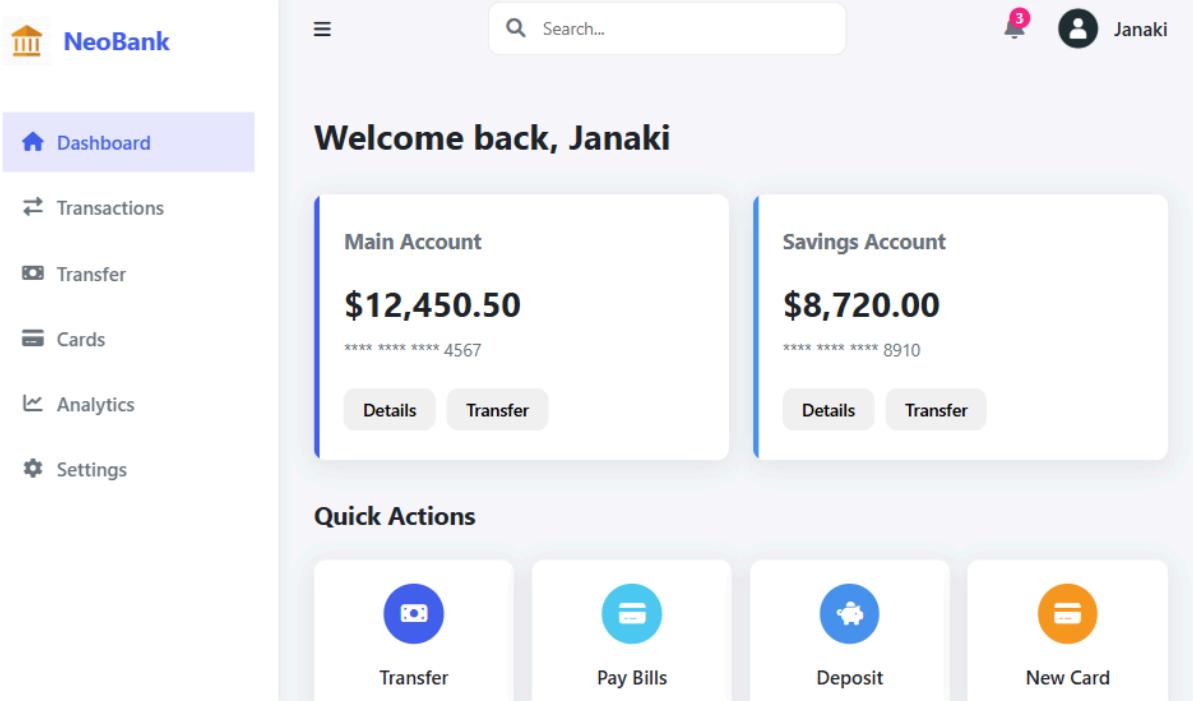


#### Network bytes/sec (Avg)



#### Virtual users (Max)



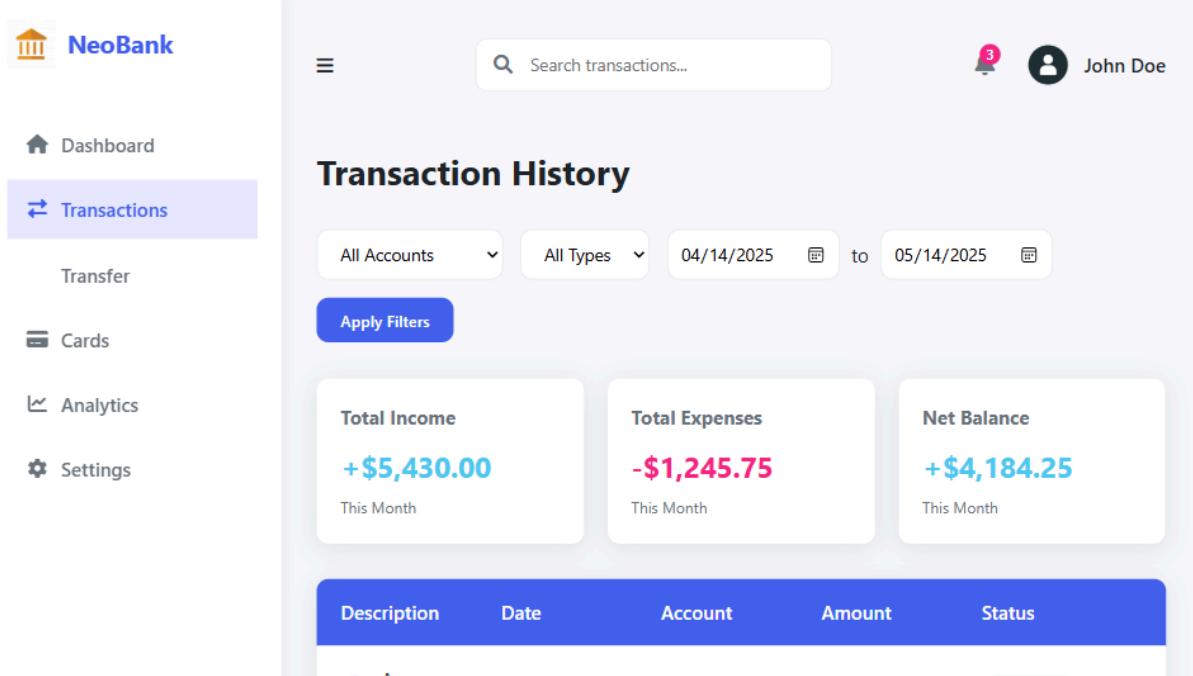


The screenshot shows the NeoBank dashboard for a user named Janaki. The top navigation bar includes a search bar and a notification icon with 3 notifications. The main header says "Welcome back, Janaki". On the left sidebar, "Dashboard" is highlighted. The main content area displays two account summaries: "Main Account" with a balance of \$12,450.50 and "Savings Account" with a balance of \$8,720.00. Below these are "Quick Actions" buttons for Transfer, Pay Bills, Deposit, and New Card.

Main Account	Savings Account
\$12,450.50 ***** 4567	\$8,720.00 ***** 8910
<a href="#">Details</a> <a href="#">Transfer</a>	<a href="#">Details</a> <a href="#">Transfer</a>

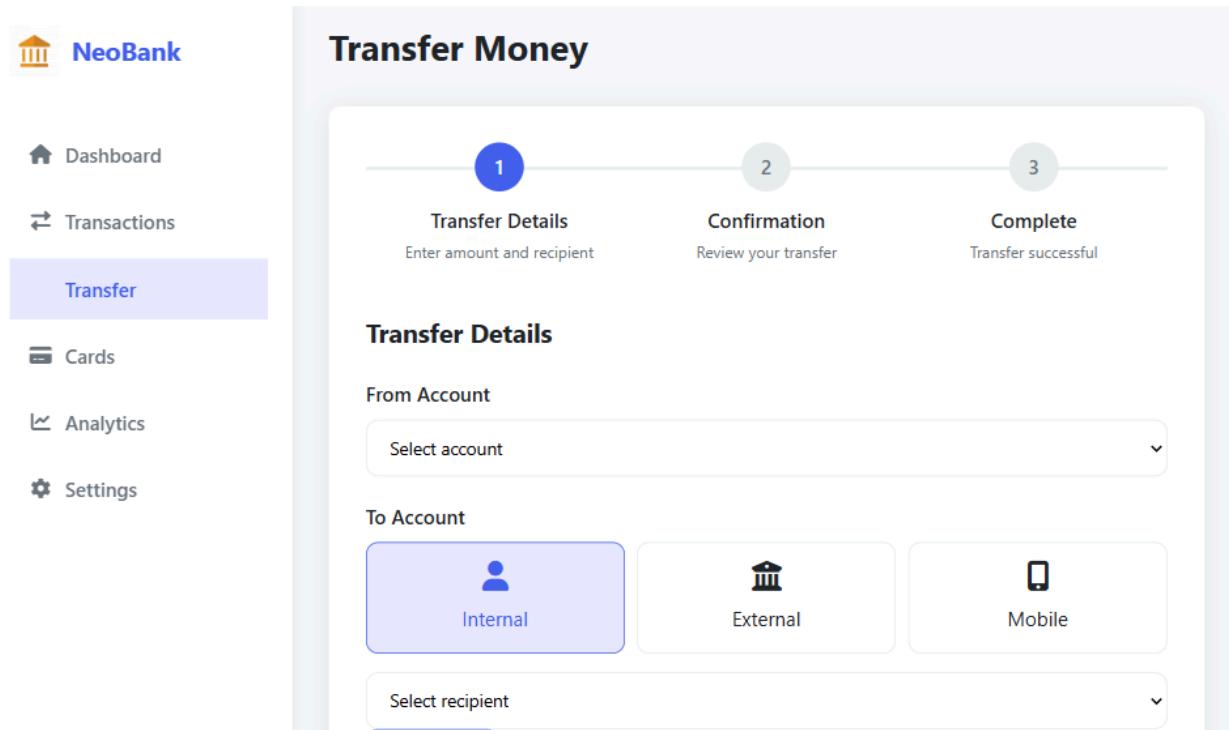
**Quick Actions**

- Transfer
- Pay Bills
- Deposit
- New Card



The screenshot shows the NeoBank transaction history for a user named John Doe. The top navigation bar includes a search bar and a notification icon with 3 notifications. The main header says "Transaction History". On the left sidebar, "Transactions" is highlighted. The main content area shows summary statistics: Total Income +\$5,430.00, Total Expenses -\$1,245.75, and Net Balance +\$4,184.25, all for the "This Month" period. Below this is a table of transaction details with columns: Description, Date, Account, Amount, and Status. A single row is visible, showing a transaction from "Amazon".

Description	Date	Account	Amount	Status
Amazon				



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

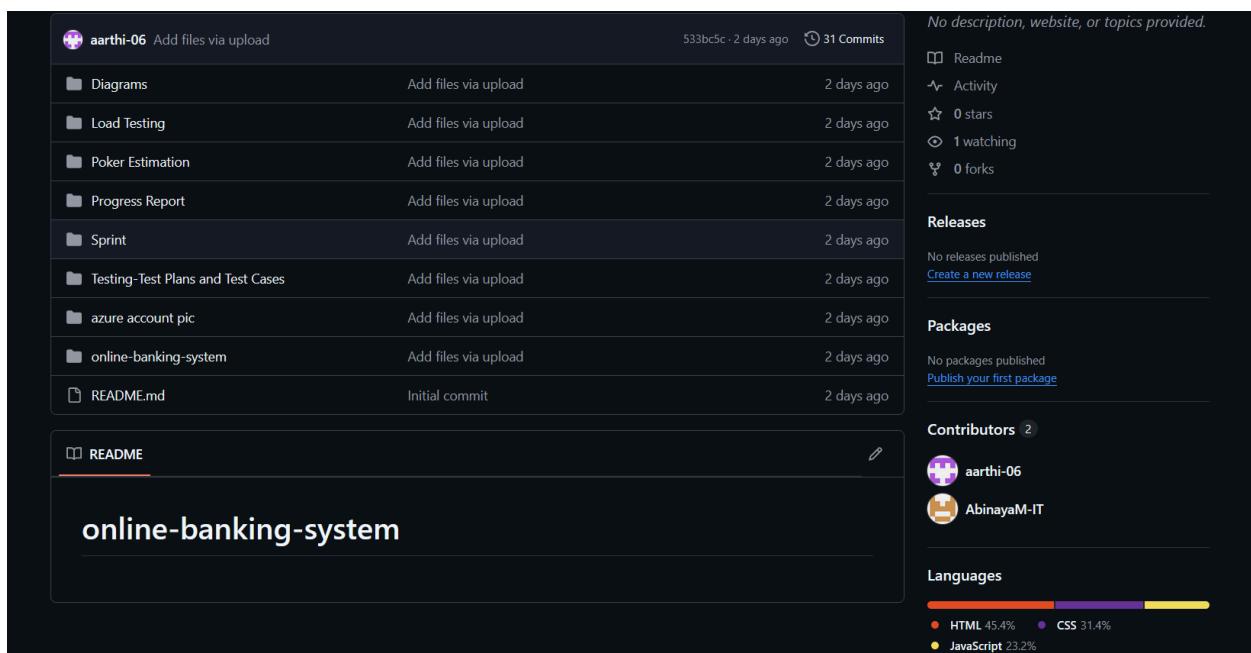
**Exp.No: 10**

**Date: 02/05/2025**

## **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 Online Banking System 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.