RAJALAKSHMI ENGINEERING COLLEGE

RAJALAKSHMI NAGAR, THANDALAM – 602 105

CS23432 SOFTWARE CONSTRUCTION LABORATORY
Laboratory Note Book

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Year / Branch / Section: 2nd YEAR / AIML/AC

University Register No. :2116231501104

College Roll No: 231501104

Semester: 4rd SEMESTER

Academic Year: 2024-2025

RAJALAKSHMI ENGINEERING COLLEGE

[AUTONOMOUS]

RAJALAKSHMI NAGAR, THANDALAM – 602 105

BONAFIDE CERTIFICATE

Name: ...MOUNESH KUMARAN K R............ ....

Academic Year : . . . . . 2024-2025. . . . . .   Semester : 04   Branch : AIML

Register No.	**2116231501104**

Certified that this is the bonafide record of work done by the above student in the

CS23432 – SOFTWARE CONSTRUCTION during the year 2024 - 2025.

Signature of Faculty in-charge

Submitted for the Practical Examination held on . . . .

Internal Examiner   **External Examiner**

EX NO: 1 STUDY OF AZURE DEVOPS

AIM:

To study how to create an agile project in Azure DevOps environment.

STUDY:

Azure DevOps is a cloud-based platform by Microsoft that provides tools for DevOps practices, including CI/CD pipelines, version control, agile planning, testing, and monitoring. It supports teams in automating software development and deployment.

1. Understanding Azure DevOps

Azure DevOps consists of five key services:

1.1 Azure Repos (Version Control)

• Supports Git repositories and Team Foundation Version Control (TFVC).

• Provides features like branching, pull requests, and code reviews.

1.2 Azure Pipelines (CI/CD)

• Automates build, test, and deployment processes.

• Supports multi-platform builds (Windows, Linux, macOS).

• Works with Docker, Kubernetes, Terraform, and cloud providers (Azure, AWS, GCP). 1.3 Azure Boards (Agile Project Management)

• Manages work using Kanban boards, Scrum boards, and dashboards.

• Tracks user stories, tasks, bugs, sprints, and releases.

1.4 Azure Test Plans (Testing)

• Provides manual, exploratory, and automated testing.

• Supports test case management and tracking.

1.5 Azure Artifacts (Package Management)

• Stores and manages NuGet, npm, Maven, and Python packages.

• Enables versioning and secure access to dependencies.

Getting Started with Azure DevOps:

Step 1: Create an Azure DevOps Account Visit Azure DevOps.

• Sign in with a Microsoft Account.

• Create an Organization and a Project.

Step 2: Set Up a Repository (Azure Repos) Navigate to Repos.

• Choose Git or TFVC for version control.

• Clone the repository and push your code.

Step 3: Configure a CI/CD Pipeline (Azure Pipelines) Go to Pipelines→
New Pipeline.

• Select a source code repository (Azure Repos, GitHub, etc.).

• Define the pipeline using YAML or the Classic Editor

• Run the pipeline to build and deploy the application.

Step 4: Manage Work with Azure Boards Navigate to Boards.

• Create work items, user stories, and tasks.

• Organize sprints and track progress.

Step 5: Implement Testing (Azure Test Plans) Go to
Test Plans. • Create and run test cases

• View test results and track bug.

RESULT:

Thus, the study for the given problem statement was successfully completed.

EX NO: 2 WRITING PROBLEM STATEMENT

AIM:

To prepare the PROBLEM STATEMENT for the given project.

PROBLEM STATEMENT:

Social Media Platform

1. **User Authentication and Profile Management**

- Users should be able to sign up, log in, and reset their passwords securely.
- Users must be able to create and manage their profiles, including profile picture, bio, and personal details.
- The system should support editing user information and logging out safely.

2. **Content Sharing and Engagement**

- Users should be able to upload photos and videos with optional captions, tags, and location details.
- The system must allow users to like, comment on, and share posts.
- Users should be able to view a real-time feed of content posted by people they follow.

3. **Stories and Reels**

- The platform should support uploading short-term stories (24-hour visibility) and short-form videos (Reels).
- Users must be able to view, like, and comment on Reels and Stories.
- Stories should appear in a circular carousel at the top of the feed.

4. **Search and Explore**

- The application must include a search functionality for users to discover other profiles, hashtags, and trending content.
- An explore page should showcase popular and trending posts based on user interests and activity.

5. **Messaging and Notifications**

- The system must support direct messaging between users, including text, emojis, and media sharing.
- Users should receive notifications for likes, comments, follows, and messages in real-time.
- The system must notify users about account activities and content interactions.

6. **Privacy and Security**

- Users must be able to control who can view their profile and posts (public/private).
- The system should ensure data encryption and secure handling of user information.
- Users should have the ability to report or block other users if necessary.

.

RESULT:

Thus, the problem statement for the given problem is successfully written.

EX NO: 3 DESIGNING PROJECT USING AGILE-SCRUM METHODOLOGY BY USING AZURE.

AIM:

To plan a agile model for the given problem statement.

THEORY:

Agile planning is a part of the Agile methodology, which is a project management style with an incremental, iterative approach. Instead of using an in-depth plan from the start of the project—which is typically product-related—Agile leaves room for requirement changes throughout and relies on constant feedback from end users.

With Agile planning, a project is broken down into smaller, more manageable tasks with the ultimate goal of having a defined image of a project's vision. Agile planning involves looking at different aspects of a project's tasks and how they'll be achieved, for example: · Roadmaps to guide a product's release ad schedule

· Sprints to work on one specific group of tasks at a time

· A feedback plan to allow teams to stay flexible and easily adapt to change

User stories, or the tasks in a project, capture user requirements from the end user's perspective Essentially, with Agile planning, a team would decide on a set of user stories to action at any given time, using them as a guide to implement new features or functionalities in a tool. Looking at tasks as user stories is a helpful way to imagine how a customer may use a feature and helps teams prioritize work and focus on delivering value first.

STEPS IN AGILE PLANNING PROCESS:

1. Define vision
2. Set clear expectations on goals
3. Define and break down the product roadmap
4. Create tasks based on user stories
5. Populate product backlog
6. Plan iterations and estimate effort
7. Conduct daily stand-ups
8. Monitor and adapt

RESULT:

Thus, the designing project using agile-scrum methodology by using azure was completed successfully.

EX NO: 4 – AGILE PLANNING

AIM:

To plan the development of a social media application using the Agile methodology.

SCOPE:

To build a mobile/web-based social media application where users can register, share posts, interact with other users through likes, comments, and messages, and manage their personal profiles. The app will also support features like stories, search functionality, and secure authentication.

AGILE EPICS & USER STORIES

Epics:

Epics represent large bodies of work that can be divided into smaller user stories. They generally span across multiple sprints.

Epic 1: User Authentication and Profile Management

Objective: Allow users to sign up, log in, and manage their profile.

User Stories:

- As a user, I want to sign up with my email or phone number.
- As a user, I want to log in securely.
- As a user, I want to edit my profile (bio, photo, etc.).
- As a user, I want to log out safely.

Epic 2: Content Posting and Interaction

Objective: Enable users to post photos/videos and interact with others' content.

User Stories:

- As a user, I want to upload photos and videos with captions.
- As a user, I want to like and comment on posts.
- As a user, I want to view a feed of posts from users I follow.

Epic 3: Stories and Reels

Objective: Allow users to post and view short videos and temporary stories.

User Stories:

- As a user, I want to upload a story that disappears in 24 hours.
- As a user, I want to watch Reels and like or comment on them.
- As a user, I want to swipe through stories posted by others.

Epic 4: Search and Explore

Objective: Enable discovery of new content and users through search.

User Stories:

- As a user, I want to search for users and hashtags.
- As a user, I want to explore trending posts.
- As a user, I want to follow new users from the explore page.

Epic 5: Messaging and Notifications

Objective: Allow users to chat and receive updates.

User Stories:

- As a user, I want to send and receive direct messages.
- As a user, I want to get notifications when someone likes or comments on my post.
- As a user, I want to receive real-time alerts for new followers and messages.

Epic 6: Privacy and Security

Objective: Ensure secure authentication and user control over privacy.

User Stories:

- As a user, I want to enable two-factor authentication.
- As a user, I want to block or report other users.
- As a user, I want to control who can see my posts (public/private).

SPRINTS

Sprint 1: Authentication and Profile Setup

Duration: 2 weeks

Focus: Signup, login, and profile management

Epics Covered: User Authentication and Profile Management

User Stories:

- Sign up with email/phone
- Log in securely
- Edit profile
- Logout function

Sprint 2: Content Posting and Feed

Duration: 2 weeks

Focus: Uploading posts and displaying feeds

Epics Covered: Content Posting and Interaction

User Stories:

- Upload photo/video with caption
- View posts from followed users
- Like and comment on posts

Sprint 3: Stories and Reels

Duration: 2 weeks

Focus: Short videos and story features

Epics Covered: Stories and Reels

User Stories:

- Upload a story (24-hour visibility)
- Watch reels and stories
- Interact with story content

Sprint 4: Search and Explore Features

Duration: 2 weeks

Focus: Discovery tools for users and content

Epics Covered: Search and Explore

User Stories:

- Search users and hashtags
- Explore trending content
- Follow new users from explore

Sprint 5: Messaging and Notifications

Duration: 2 weeks

Focus: Real-time interactions and updates

Epics Covered: Messaging and Notifications

User Stories:

- Direct messaging system
- Notifications for likes/comments
- Alerts for new followers/messages

Sprint 6: Privacy and Security

Duration: 2 weeks

Focus: User control and secure access

Epics Covered: Privacy and Security

User Stories:

- Two-factor authentication
- Blocking/reporting users
- Privacy settings for account

Sprint 7: Final Testing and Deployment

Duration: 1 week

Focus: Testing and launch preparation

Epics Covered: All Epics

User Stories:

- End-to-end testing
- Performance/load testing
- User acceptance testing and deployment

RESULT:

Thus, the agile plan for the problem statement is completed successfully.

EX NO: 5 USER STORIES – CREATION

AIM:

To create User Stories for the given problem statement.

THEORY:

A user story is an informal, general explanation of a software feature written from the perspective of the end user. Its purpose is to articulate how a software feature will provide value to the customer.

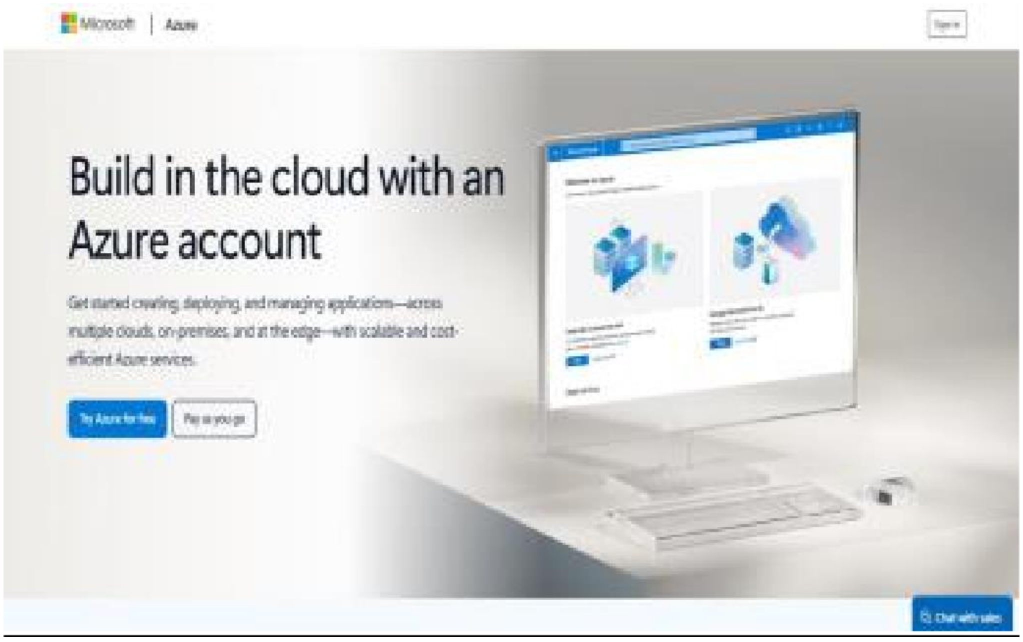
User story template

"As a [role], I [want to], [so that]."

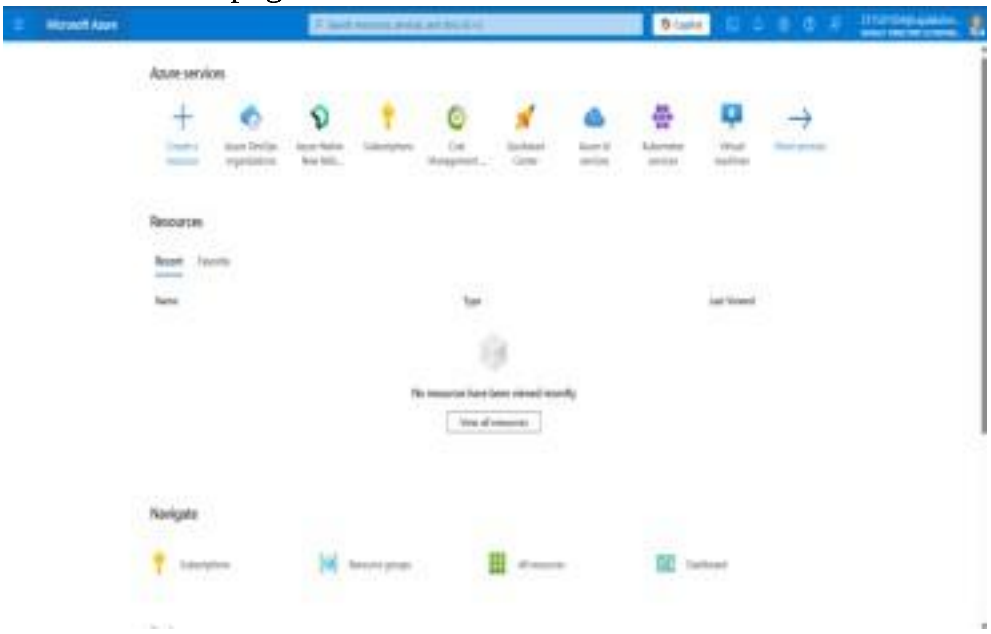
PROCEDURE:

1. Open your web browser and go to the Azure website: *https://azure.microsoft.com/en-in* Sign in using your Microsoft account credentials. If you don't have an account, you'll need to create one.

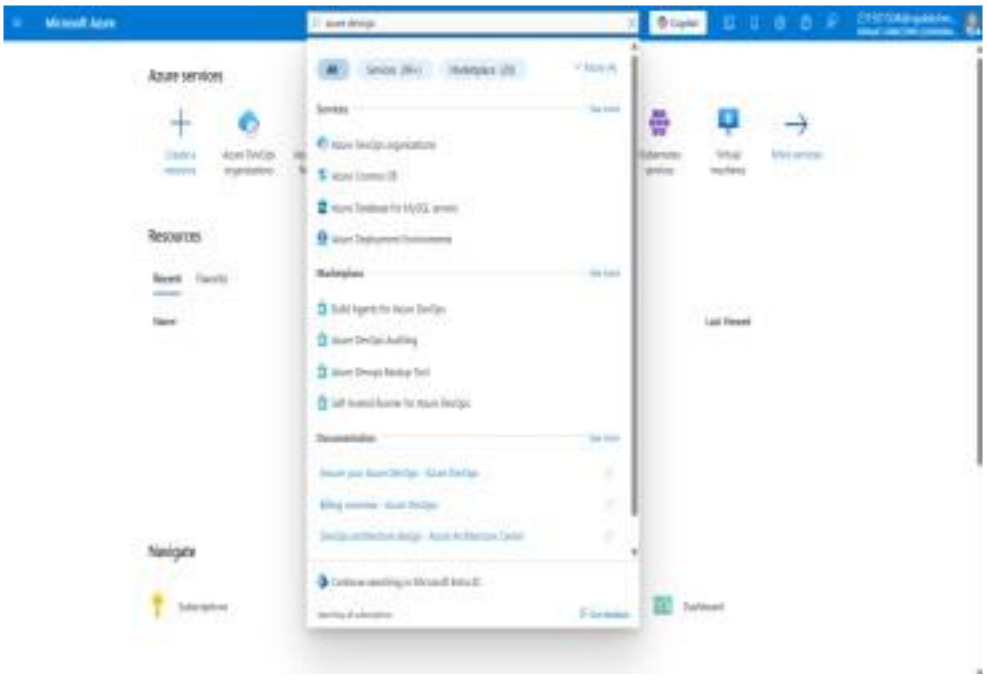
2. If you don't have a Microsoft account, you can sign up for *https://signup.live.com/?lic=1*


Microsoft | Azure
Build in the cloud with an Azure account
Get started creating, deploying, and managing applications—across multiple clouds, on-premises, and at the edge—with scalable and cost-efficient Azure services.
Try Azure for free
Pay as you go

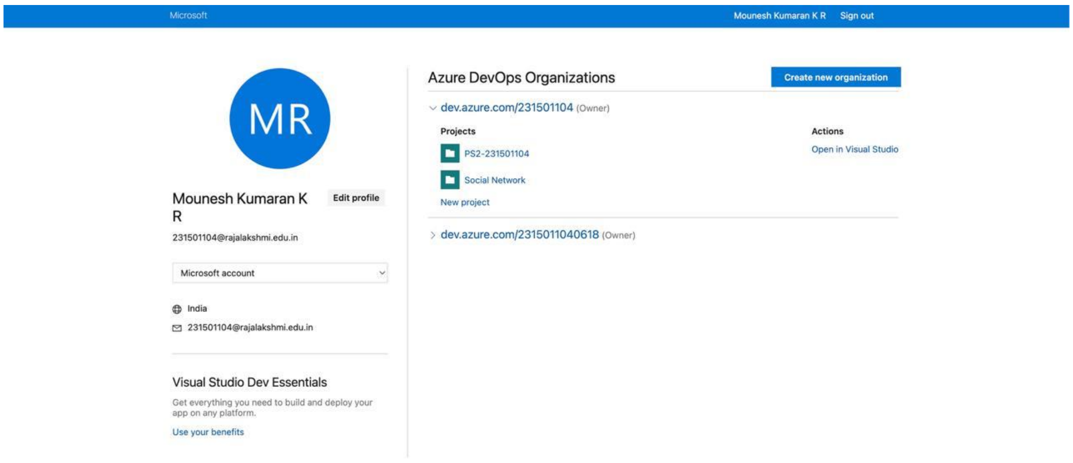
3. Azure home page



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



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


Microsoft Mounesh Kumaran K R Sign out

Mounesh Kumaran K R
Edit profile
231501104@rajalakshmi.edu.in
Microsoft account
India
231501104@rajalakshmi.edu.in

Visual Studio Dev Essentials
Get everything you need to build and deploy your app on any platform.
Use your benefits

Azure DevOps Organizations
Create new organization

dev.azure.com/231501104 (Owner)

Projects	Actions
PS2-231501104	Open in Visual Studio
Social Network	
New project	

dev.azure.com/2315011040618 (Owner)

5. 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.

i. On the organization's **Home page**, click on the **New Project** button.

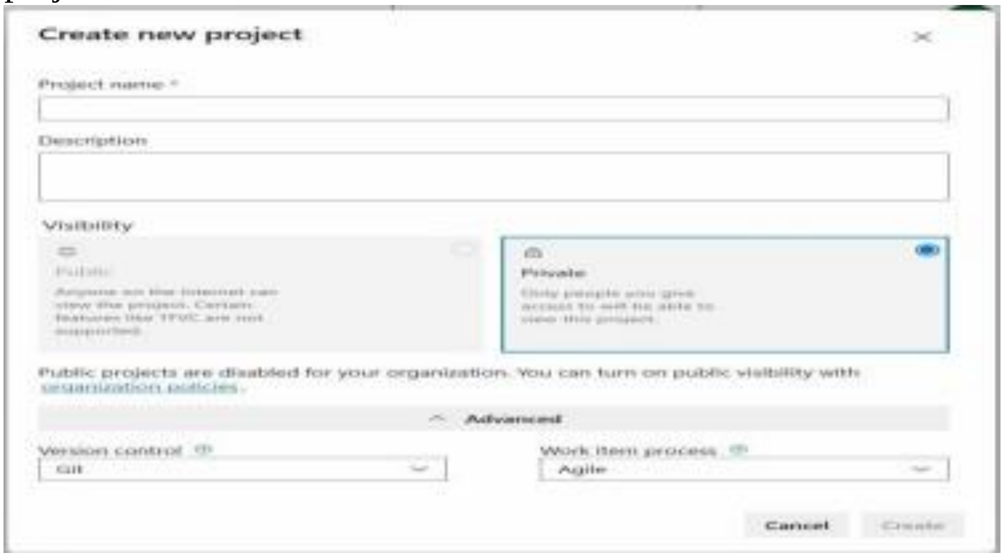
ii. Enter the project name, description, and visibility options:

○ **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


Create new project

Project name *

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.

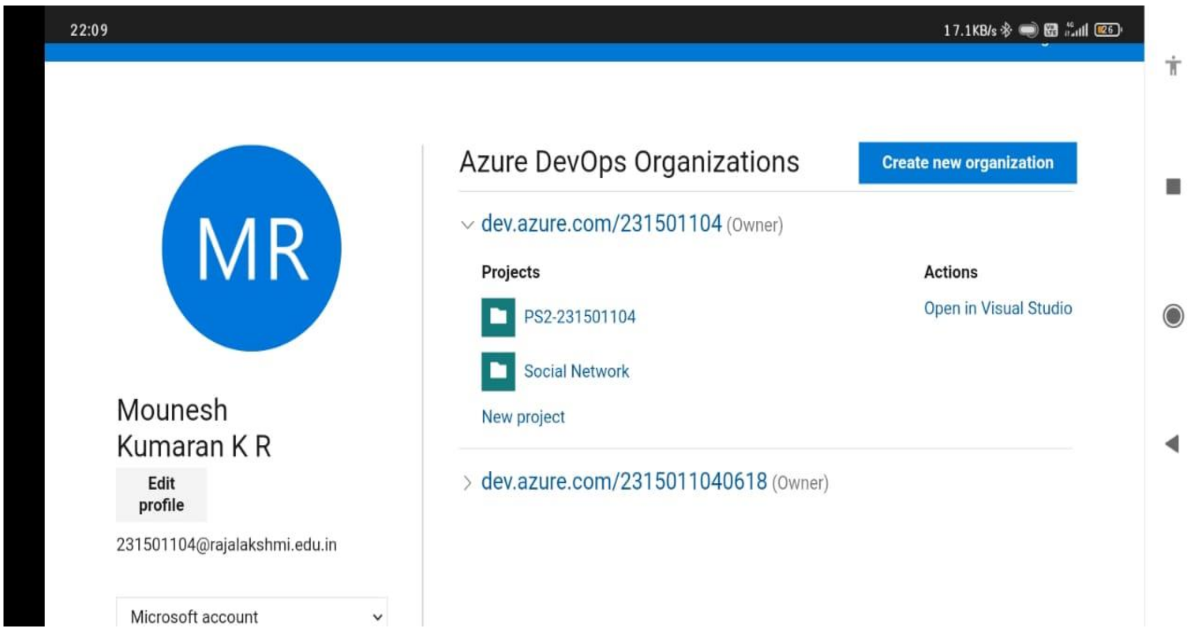
Public projects are disabled for your organization. You can turn on public visibility with organization policies.

Advanced

Version control: Git

Work item process: Agile

6. 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.


22:09

Mounesh Kumaran K R

Edit profile

231501104@rajalakshmi.edu.in

Microsoft account

Azure DevOps Organizations

Create new organization

dev.azure.com/231501104 (Owner)

Projects

PS2-231501104

Social Network

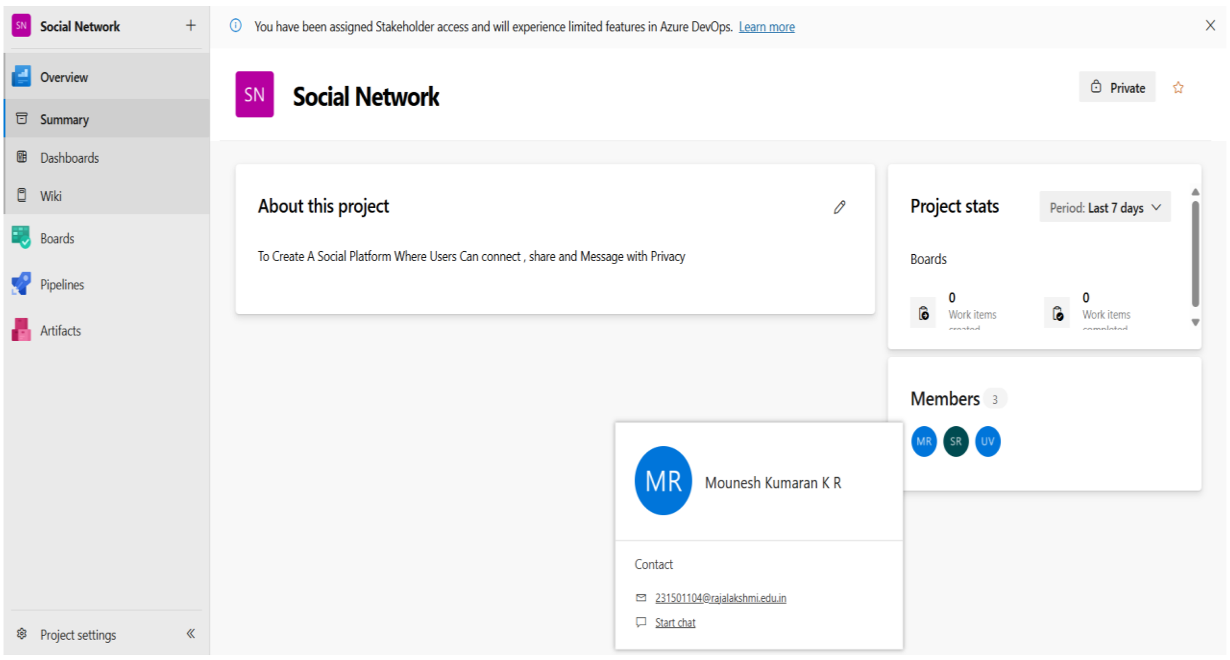
New project

Actions

Open in Visual Studio

dev.azure.com/2315011040618 (Owner)

7. Project dashbord


Social Network

Overview

Summary

Dashboards

Wiki

Boards

Pipelines

Artifacts

Project settings

You have been assigned Stakeholder access and will experience limited features in Azure DevOps. Learn more

Social Network

Private

About this project

To Create A Social Platform Where Users Can connect , share and Message with Privacy

Project stats

Period: Last 7 days

Boards

0 Work items created

0 Work items completed

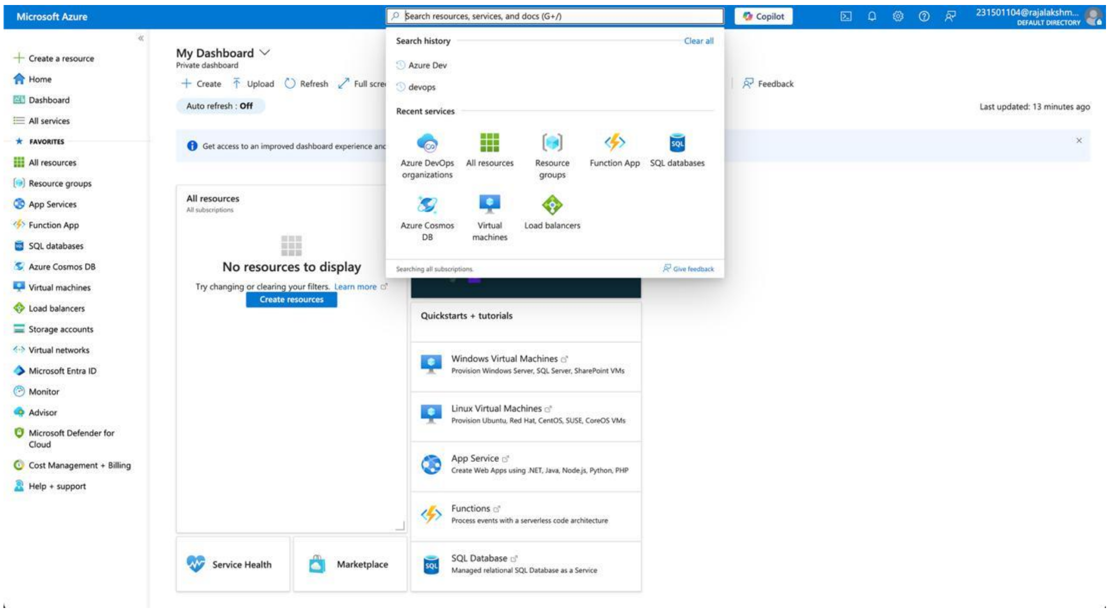
Members 3

Mounesh Kumaran K R

Contact

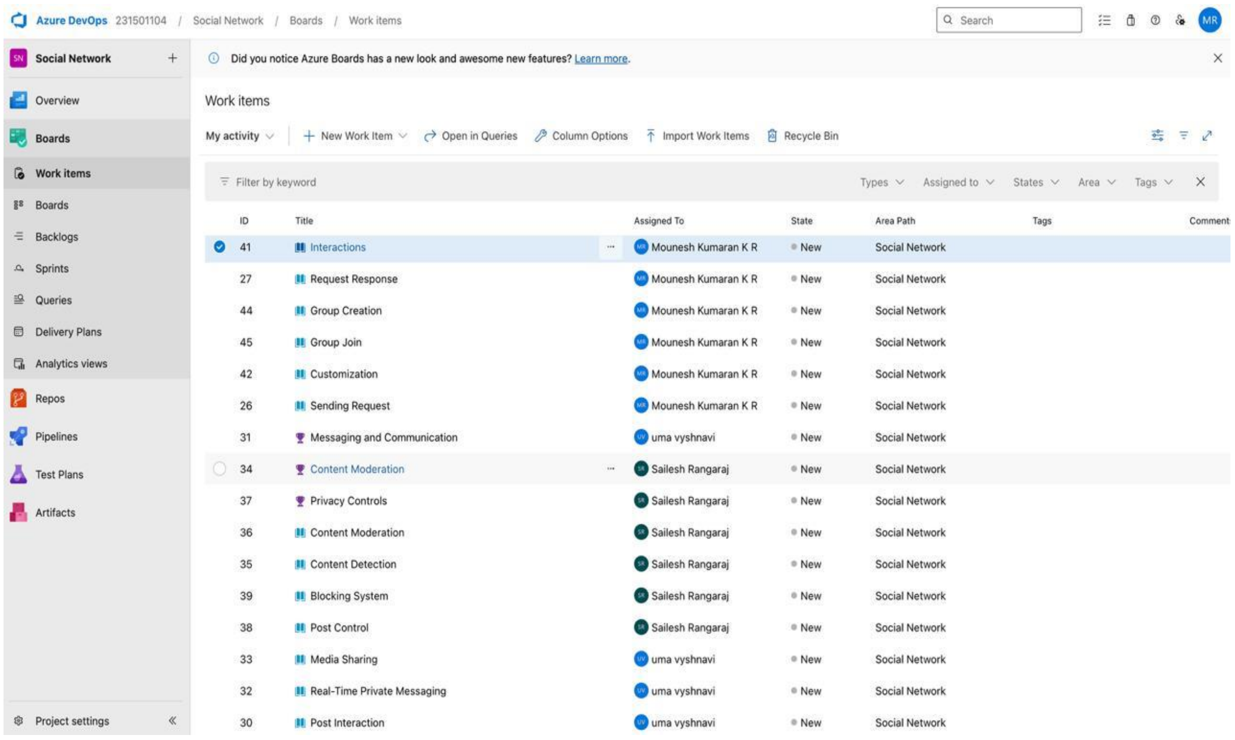
231501104@rajalakshmi.edu.in

Start chat



9.To manage user stories

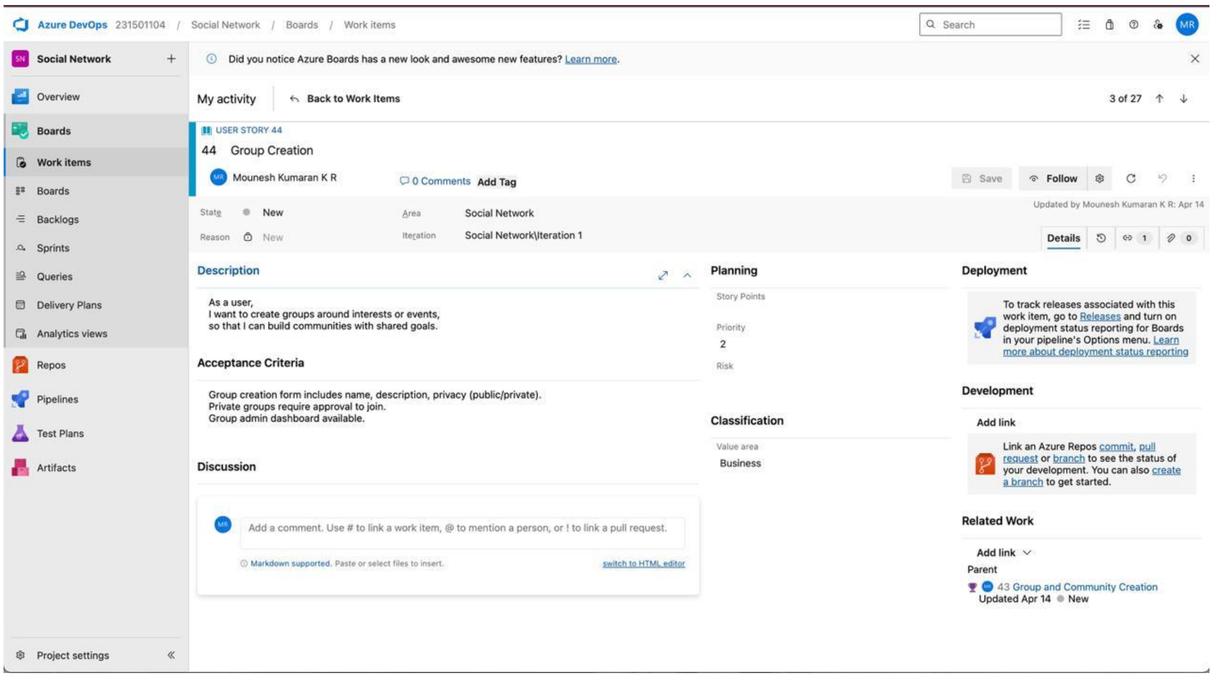
a. From the **left-hand navigation menu**, click on **Boards**. This will take you to the main **Boards** page, where you can manage work items, backlogs, and sprints. b. On the **work items** page, you'll see the option to **Add a work item** at the top. Alternatively, you can find a **+** button or **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.



Work items

ID	Title	Assigned To	State	Area Path	Tags	Comments
41	Interactions	Mounesh Kumaran K R	New	Social Network		
27	Request Response	Mounesh Kumaran K R	New	Social Network		
44	Group Creation	Mounesh Kumaran K R	New	Social Network		
45	Group Join	Mounesh Kumaran K R	New	Social Network		
42	Customization	Mounesh Kumaran K R	New	Social Network		
26	Sending Request	Mounesh Kumaran K R	New	Social Network		
31	Messaging and Communication	uma vyshnavi	New	Social Network		
34	Content Moderation	Sailesh Rangaraj	New	Social Network		
37	Privacy Controls	Sailesh Rangaraj	New	Social Network		
36	Content Moderation	Sailesh Rangaraj	New	Social Network		
35	Content Detection	Sailesh Rangaraj	New	Social Network		
39	Blocking System	Sailesh Rangaraj	New	Social Network		
38	Post Control	Sailesh Rangaraj	New	Social Network		
33	Media Sharing	uma vyshnavi	New	Social Network		
32	Real-Time Private Messaging	uma vyshnavi	New	Social Network		
30	Post Interaction	uma vyshnavi	New	Social Network		

10.Fill in User Story Details


USER STORY 44

44 Group Creation

Mounesh Kumaran K R

State: New | Area: Social Network
Reason: New | Iteration: Social Network\Iteration 1

Updated by Mounesh Kumaran K R: Apr 14

Description

As a user,
I want to create groups around interests or events,
so that I can build communities with shared goals.

Acceptance Criteria

Group creation form includes name, description, privacy (public/private).
Private groups require approval to join.
Group admin dashboard available.

Planning

Story Points:
Priority: 2
Risk:

Classification

Value area: Business

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

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

Parent
43 Group and Community Creation
Updated Apr 14 New

Azure DevOps 231501104 / Social Network / Boards / Work items
Search
Social Network
Overview
Boards
Work items
Boards
Backlogs
Sprints
Queries
Delivery Plans
Analytics views
Repos
Pipelines
Test Plans
Artifacts
Project settings
Did you notice Azure Boards has a new look and awesome new features? Learn more.
My activity
Back to Work Items
3 of 27
0 Comments
Add Tag
Save
Follow
Details
Discussion
Add a comment. Use # to link a work item, @ to mention a person, or ! to link a pull request.
Markdown supported. Paste or select files to insert.
switch to HTML editor
Add link

Result:

The user story for the given problem statement was written successfully.

EX NO: 6 SEQUENCE DIAGRAM

AIM:

To design a Sequence Diagram by using Mermaid.js for the given problem statement.

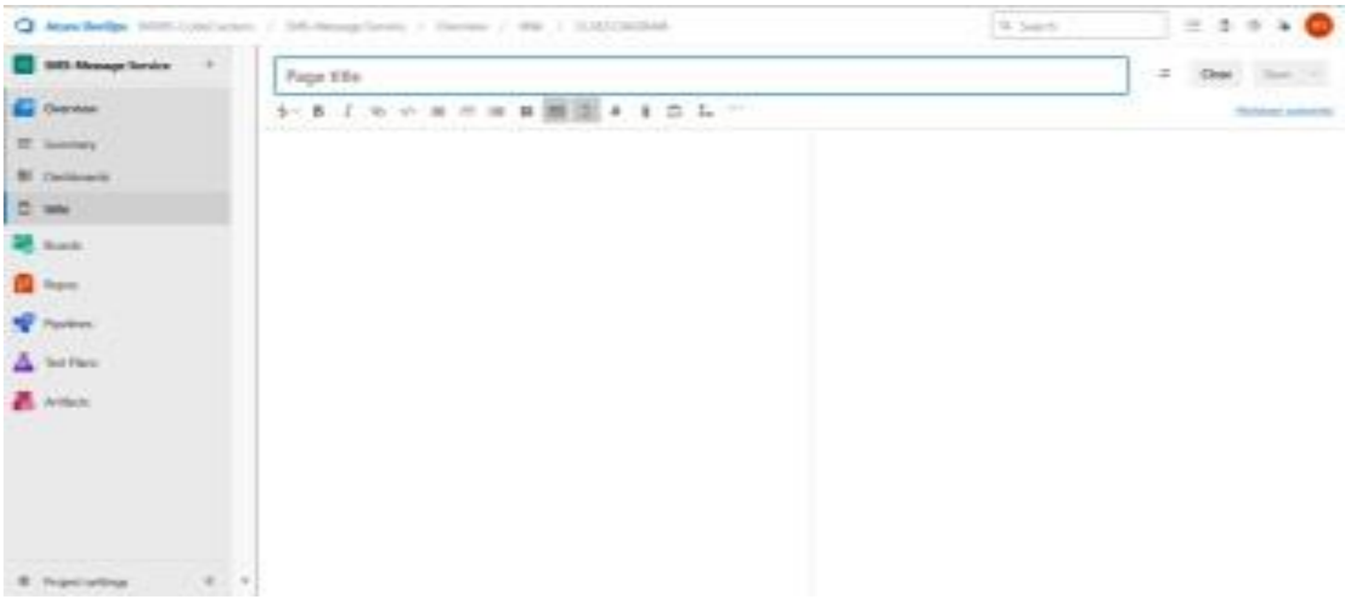
THEORY:

A Sequence Diagram is a key component of Unified Modelling Language (UML) used to visualize the interaction between objects in a sequential order. It focuses on how objects communicate with each other over time, making it an essential tool for modelling dynamic behaviour in a system.

PROCEDURE:

1. Open a project in Azure DevOps Organisations.

2. To design select wiki from menu



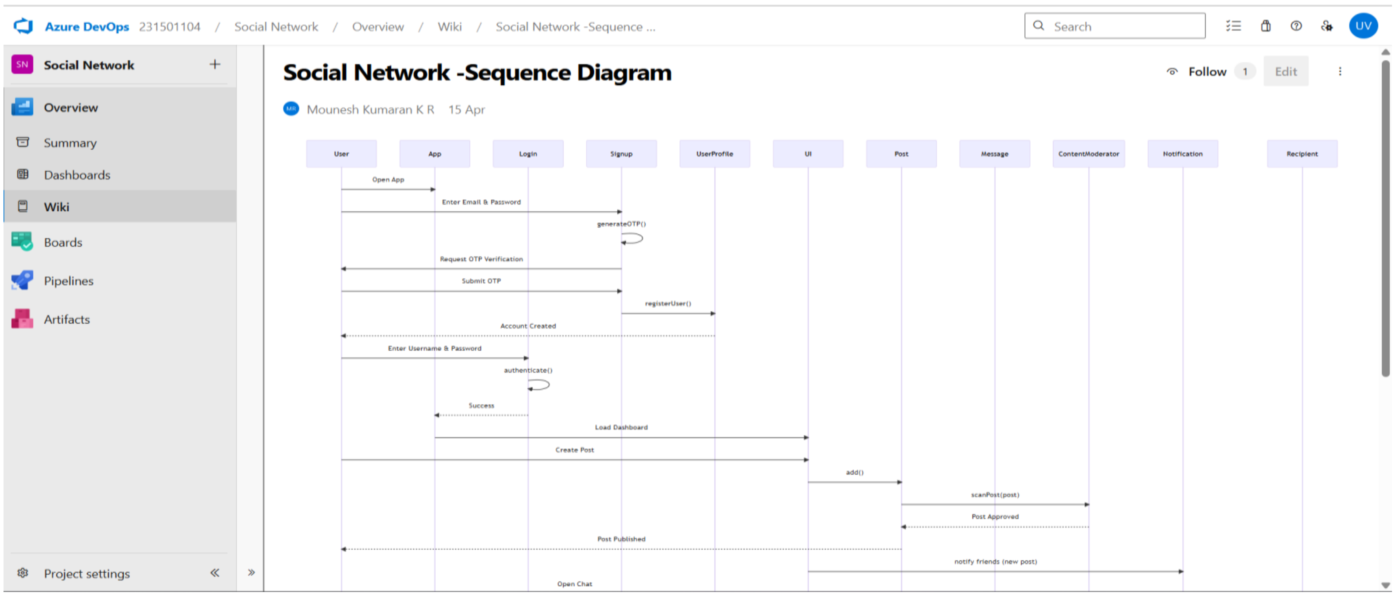
3. Write code for drawing sequence diagram and save the code.::: mermaid sequence

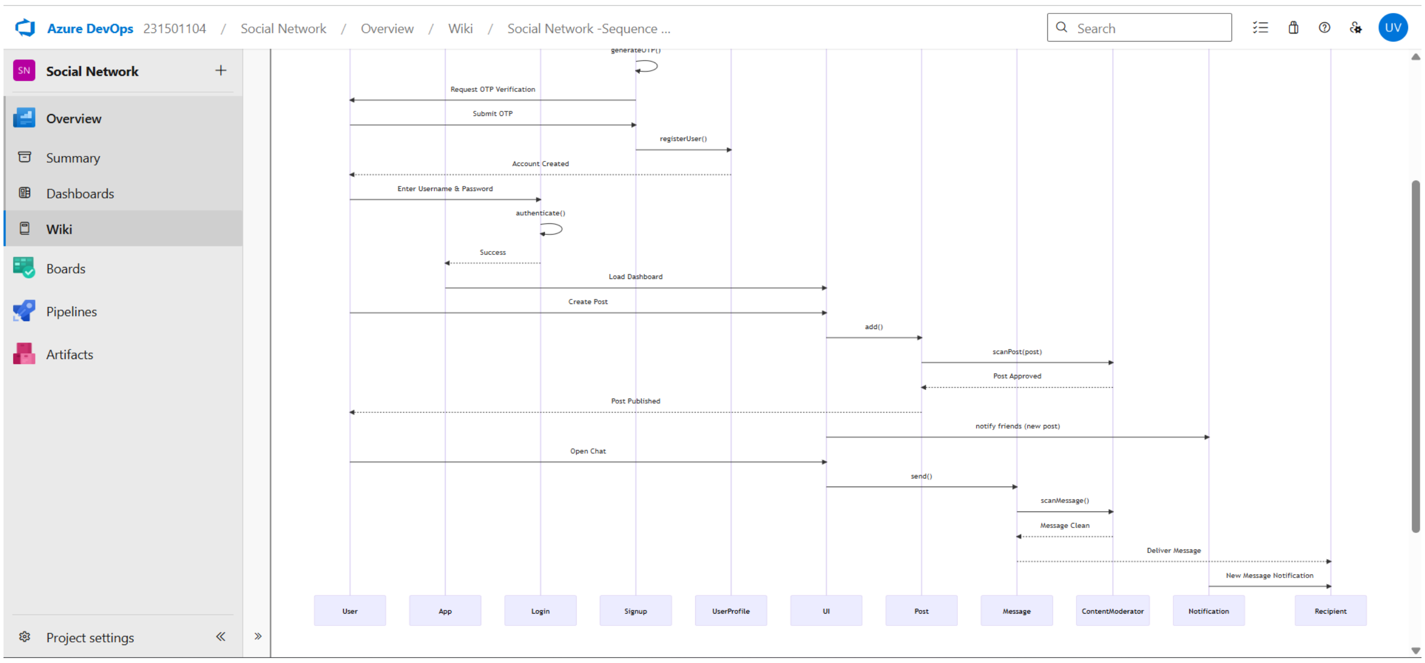
```
:::mermaid

sequenceDiagram

 participant User
 participant App
 participant Login
 participant Signup
 participant UserProfile
 participant UI
 participant Post
 participant Message
 participant ContentModerator
 participant Notification
participant Recipient

User->>App: Open App
App->>Login: Enter Email & Password
Login->>Signup: Request OTP Verification
Signup->>Login: generateOTP()
Login->>Signup: Submit OTP
Signup->>UserProfile: registerUser()
UserProfile->>Signup: Account Created

User->>Login: Enter Username & Password
Login->>Login: authenticate()
Login->>User: Success

User->>UI: Load Dashboard
User->>Post: Create Post
Post->>ContentModerator: add()
ContentModerator->>Post: scanPost(post)
Post->>ContentModerator: Post Approved
ContentModerator->>Notification: notify friends (new post)
Notification->>User: Post Published

User->>Message: Open Chat
Message->>ContentModerator: send()
ContentModerator->>Message: scanMessage()
Message->>ContentModerator: Message Clean
ContentModerator->>Notification: Deliver Message
Notification->>Recipient: New Message Notification
```

EXPLANATION:

1. User opens the app and enters login details.
2. Signup service handles OTP generation and user registration.
3. After account creation, the user logs in and is authenticated.
4. Once logged in, the user can create a post which is sent to the content moderator.
5. After content is approved, friends are notified.
6. The user can also send messages which are scanned and then delivered to the recipient with a notification.

4. click wiki menu and select the page





RESULT:

Thus, the sequence diagram for the given problem statement was drawn successfully.

EX NO: 7 CLASS DIAGRAM

AIM:

To draw a sample class diagram for your project or system.

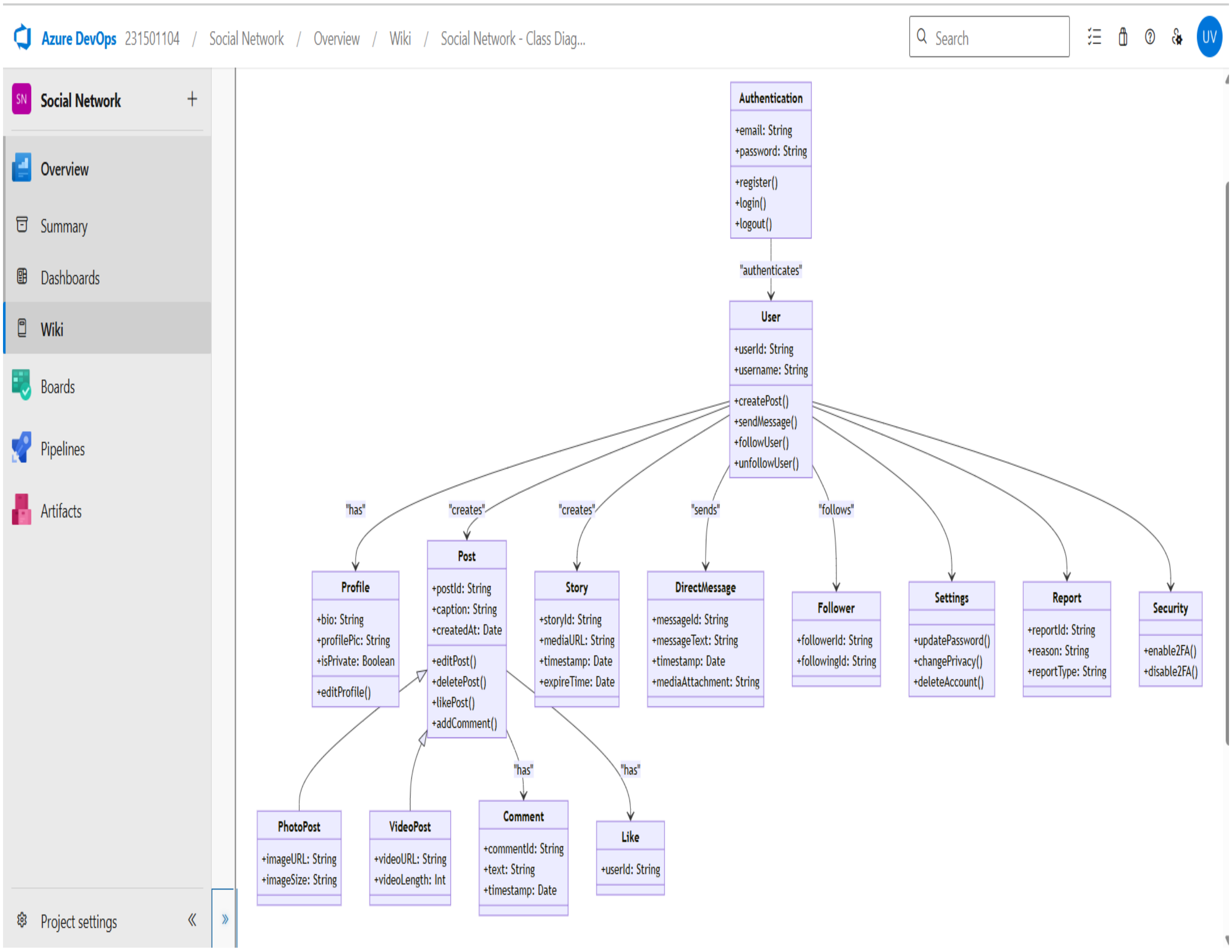
THEORY:

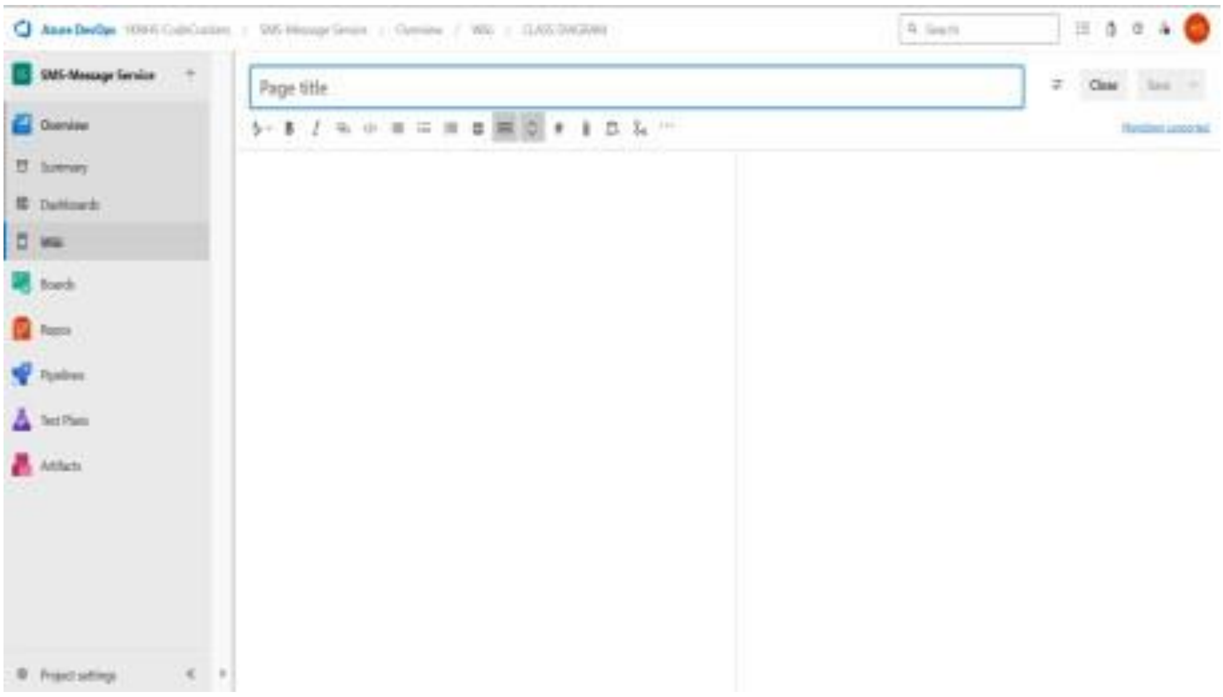
A UML class diagram is a visual tool that represents the structure of a system by showing its classes, attributes, methods, and the relationships between them.

PROCEDURE:

1. Open a project in Azure DevOps Organisations.

2. To design select wiki from menu





3.Write code for drawing class diagram and save the code

```
::: mermaid

classDiagram

%% ==============================

%%        CORE CLASSES

%% ==============================



classDiagram



    class Authentication {
        +email: String
        +password: String
        +register()
        +login()
        +logout()
    }

    class User {
        +userId: String
        +username: String
        +createPost()
        +sendMessage()
        +followUser()
    +unfollowUser()
}

class Profile {
    +bio: String
    +profilePic: String
    +isPrivate: Boolean
    +editProfile()
}

class Post {
    +postId: String
    +caption: String
    +createdAt: Date
    +editPost()
    +deletePost()
    +likePost()
    +addComment()
}

class PhotoPost {
    +imageURL: String
    +imageSize: String
}

class VideoPost {
    +videoURL: String
    +videoLength: Int
}

class Comment {
    +commentId: String
    +text: String
    +timestamp: Date
}

class Like {
    +userId: String
}

class Story {
    +storyId: String
    +mediaURL: String
    +timestamp: Date
    +expireTime: Date
}

class DirectMessage {
    +messageId: String
    +messageText: String
    +timestamp: Date
    +mediaAttachment: String
}

class Follower {
    +followerId: String
    +followingId: String
}

class Settings {
    +updatePassword()
    +changePrivacy()
    +deleteAccount()
}

class Report {
    +reportId: String
    +reason: String
    +reportType: String
}

class Security {
    +enable2FA()
    +disable2FA()
}

Authentication --> User : authenticates
User --> Profile : has
User --> Post : creates
User --> Story : creates
User --> DirectMessage : sends
User --> Follower : follows
User --> Settings
User --> Report
User --> Security

Post --> Comment : has
Post --> Like : has
Post --> PhotoPost
Post --> VideoPost

Profile --> PhotoPost
```

RESULT:

Thus, the class diagram for the given problem statement was designed successfully.

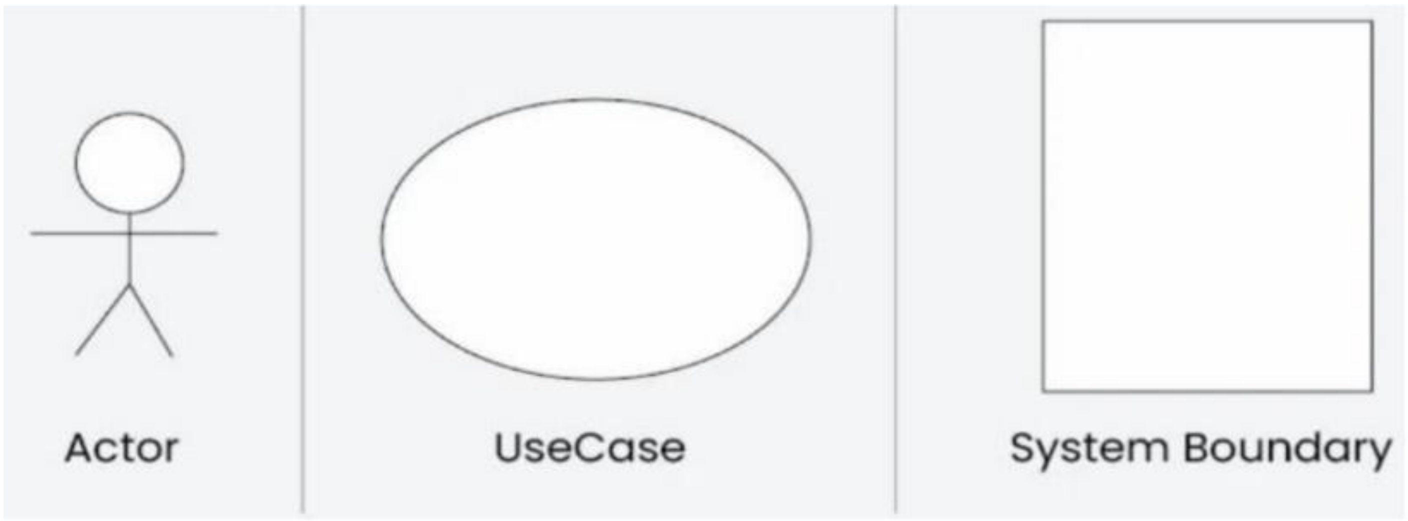
EX NO: 8 USECASE DIAGRAM

AIM:

Steps to draw the Use Case Diagram using draw.io

THEORY:

- UCD shows the relationships among actors and use cases within a system which Provide an overview of all or part of the usage requirements for a system or organization in the form of an essential model or a business model and communicate the scope of a development project
- **Use Cases**
- **Actors**
- **Relationships**
- **System Boundary Boxes**



PROCEDURE:

Step 1: Create the Use Case Diagram in Draw.io

• Open Draw.io (diagrams.net).
• Click "Create New Diagram" and select "Blank" or "UML Use Case" template. • Add Actors (Users, Admins, External Systems) from the UML section.
• Add Use Cases (Functionalities) using ellipses.
• Connect Actors to Use Cases with lines (solid for direct interaction, dashed for <<include>> and <<extend>>).
• Save the diagram as .drawio or export as PNG/JPG/SVG.

Step 2: Upload the Diagram to Azure DevOps

Option 1: Add to Azure DevOps Wiki

• Open Azure DevOps and go to your project.
• Navigate to Wiki (Project > Wiki).

• Click "Edit Page" or create a new page.
• Drag & Drop the exported PNG/JPG image.
• Use Markdown to embed the diagram:
• ![Use Case Diagram](attachments/use_case_diagram.png)

Option 2: Attach to Work Items in Azure Boards

• Open Azure DevOps → Navigate to Boards (Project > Boards). • Select a User Story, Task, or Feature.
• Click "Attachments" → Upload your Use Case Diagram
• Add comments or descriptions to explain the use case Diagram.

RESULT:

The use case diagram for the given problem statement was designed successfully.

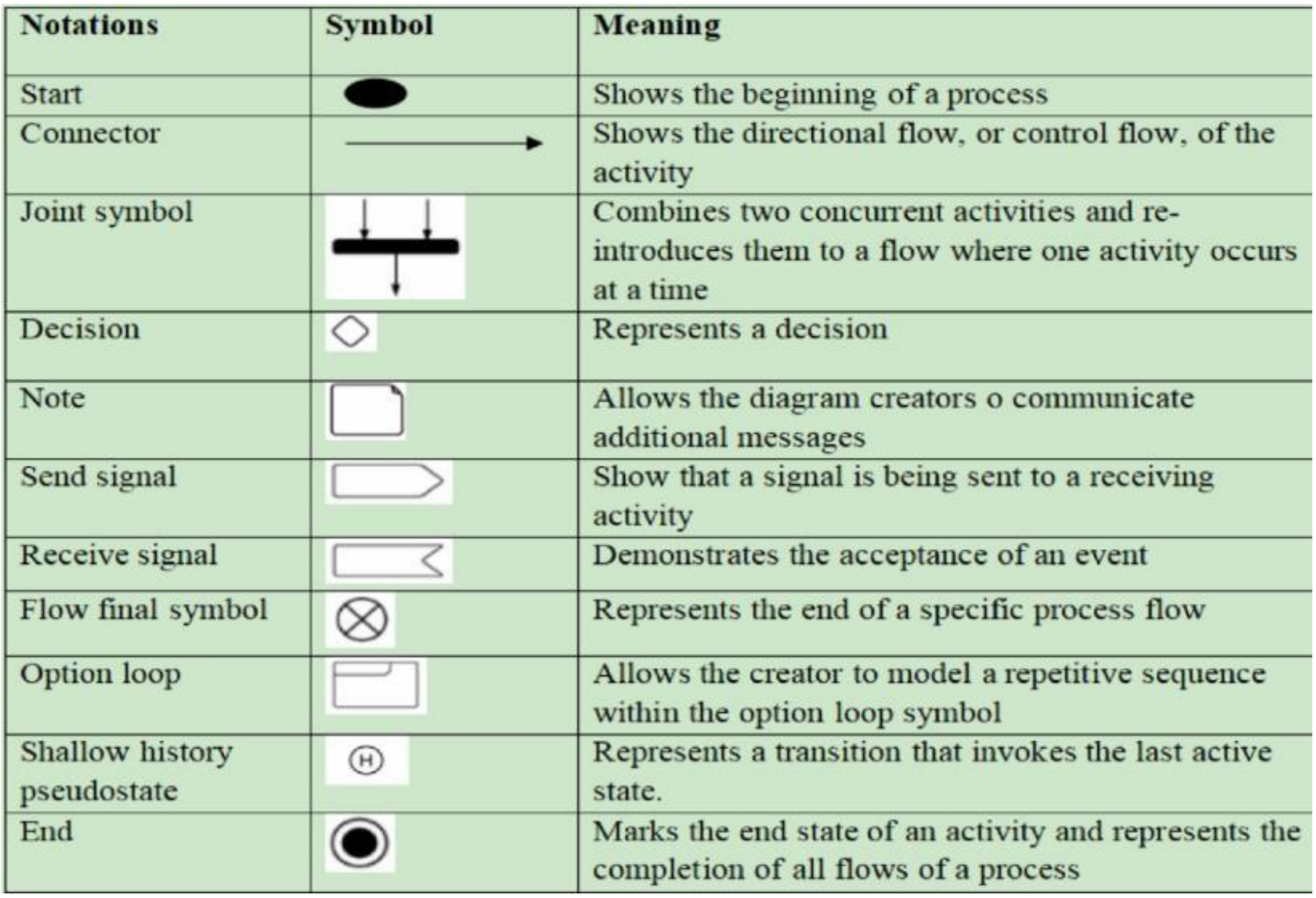
EX NO: 9 ACTIVITY DIAGRAM

AIM:

To draw a sample activity diagram for your project or system.

THEORY:

Activity diagrams are an essential part of the Unified Modelling Language (UML) that help visualize workflows, processes, or activities within a system. They depict how different actions are connected and how a system moves from one state to another.



Notations	Symbol	Meaning
Start	●	Shows the beginning of a process
Connector	→	Shows the directional flow, or control flow, of the activity
Joint symbol	━	Combines two concurrent activities and re-introduces them to a flow where one activity occurs at a time
Decision	◇	Represents a decision
Note	▭	Allows the diagram creators o communicate additional messages
Send signal	▷	Show that a signal is being sent to a receiving activity
Receive signal	◁	Demonstrates the acceptance of an event
Flow final symbol	⊗	Represents the end of a specific process flow
Option loop	▭	Allows the creator to model a repetitive sequence within the option loop symbol
Shallow history pseudostate	Ⓗ	Represents a transition that invokes the last active state.
End	◉	Marks the end state of an activity and represents the completion of all flows of a process

PROCEDURE:

1. Draw diagram in draw.io
2. Upload the diagram in the Azure Wiki

RESULT:

Thus, the Activity diagram for the above problem statement done successfully.

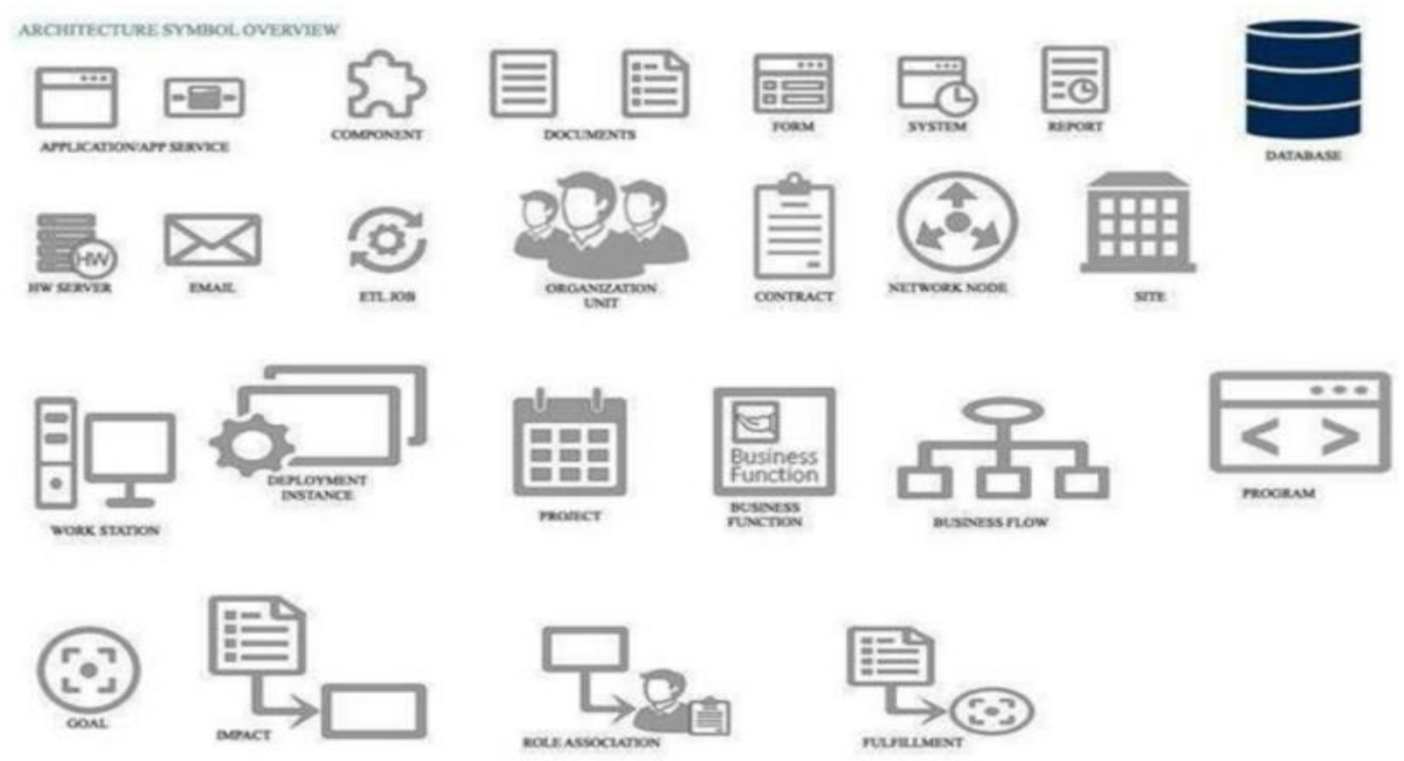
EX NO: 10 ARCHITECTURE DIAGRAM

AIM:

Steps to draw the Architecture Diagram using draw.io.

THEORY:

An architectural diagram is a visual representation that maps out the physical implementation for components of a software system. It shows the general structure of the software system and the associations, limitations, and boundaries between each element.



PROCEDURE:

1. Draw diagram in draw.io

2. Upload the diagram in Azure DevOps wiki

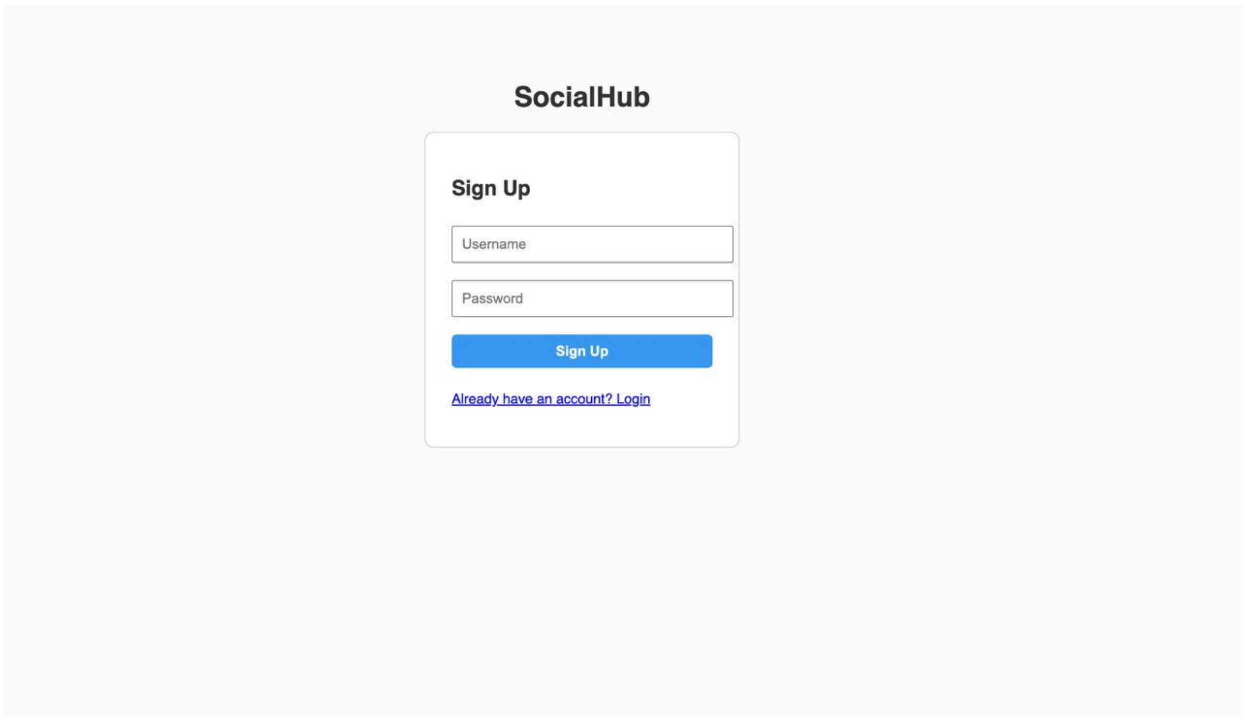
RESULT:

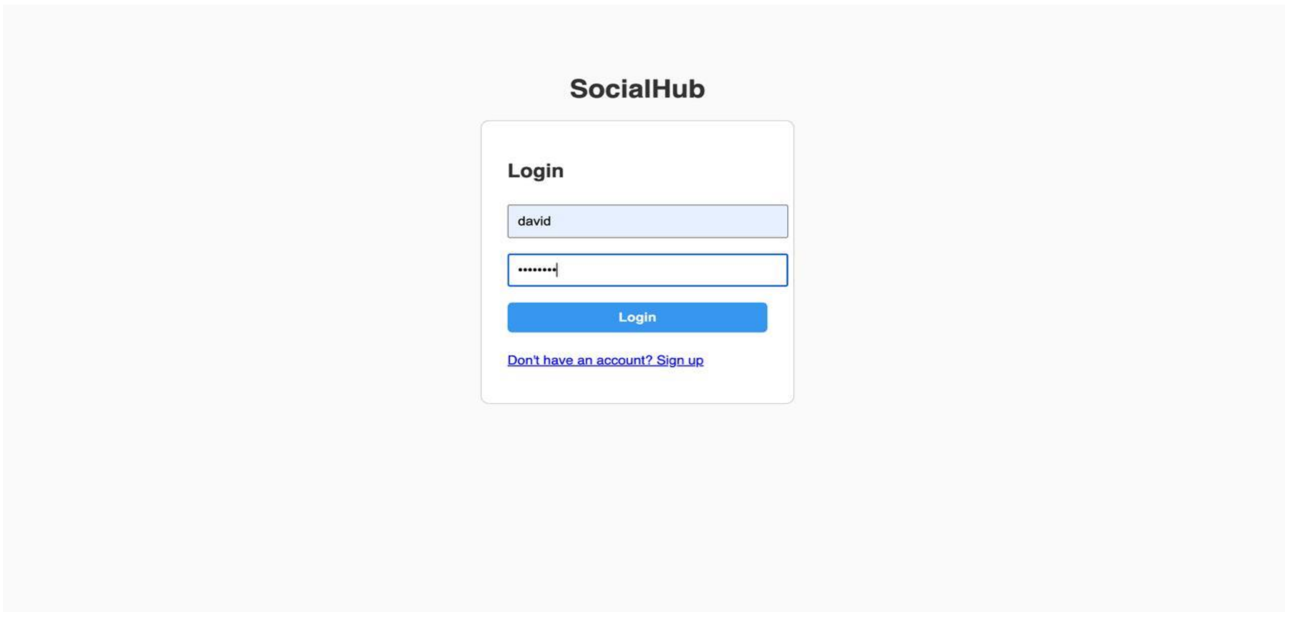
Thus, the architecture diagram for the given problem statement was designed successfully.

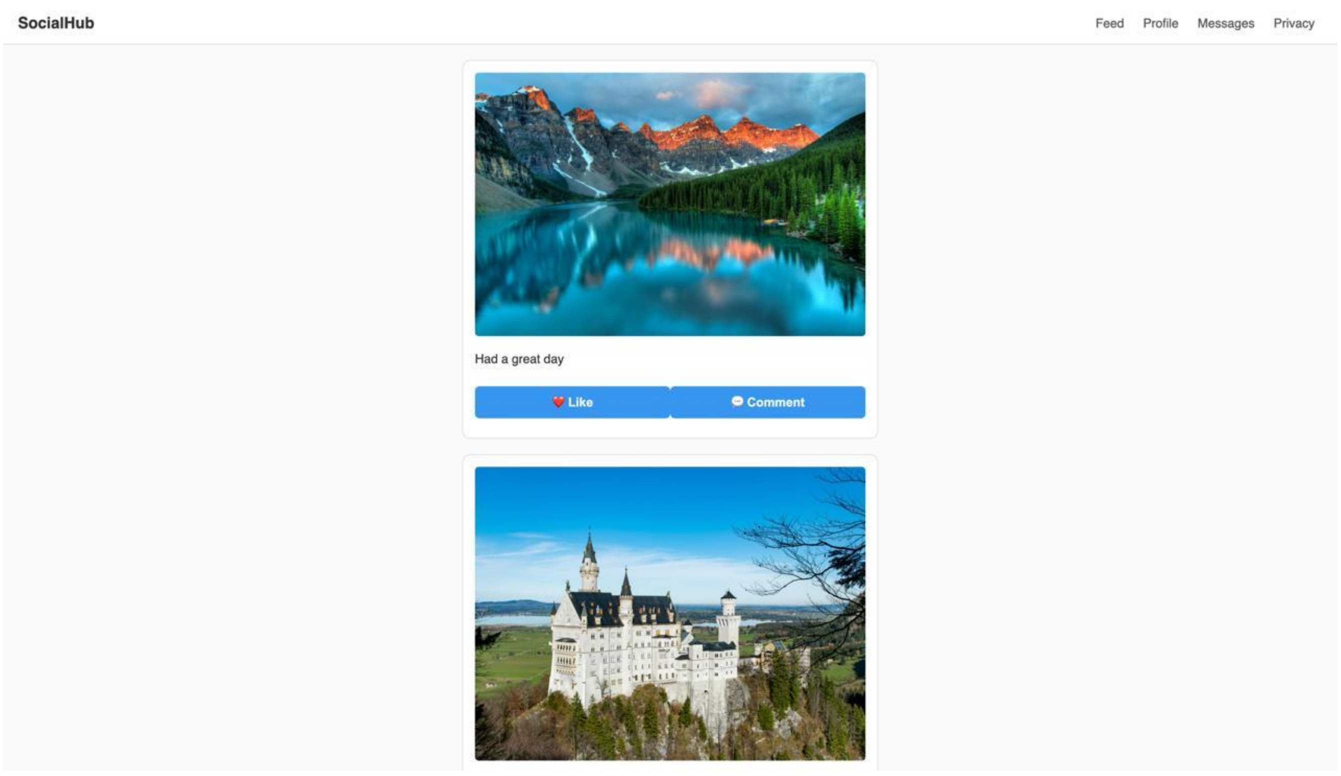
EX NO: 11 USER INTERFACE

AIM:

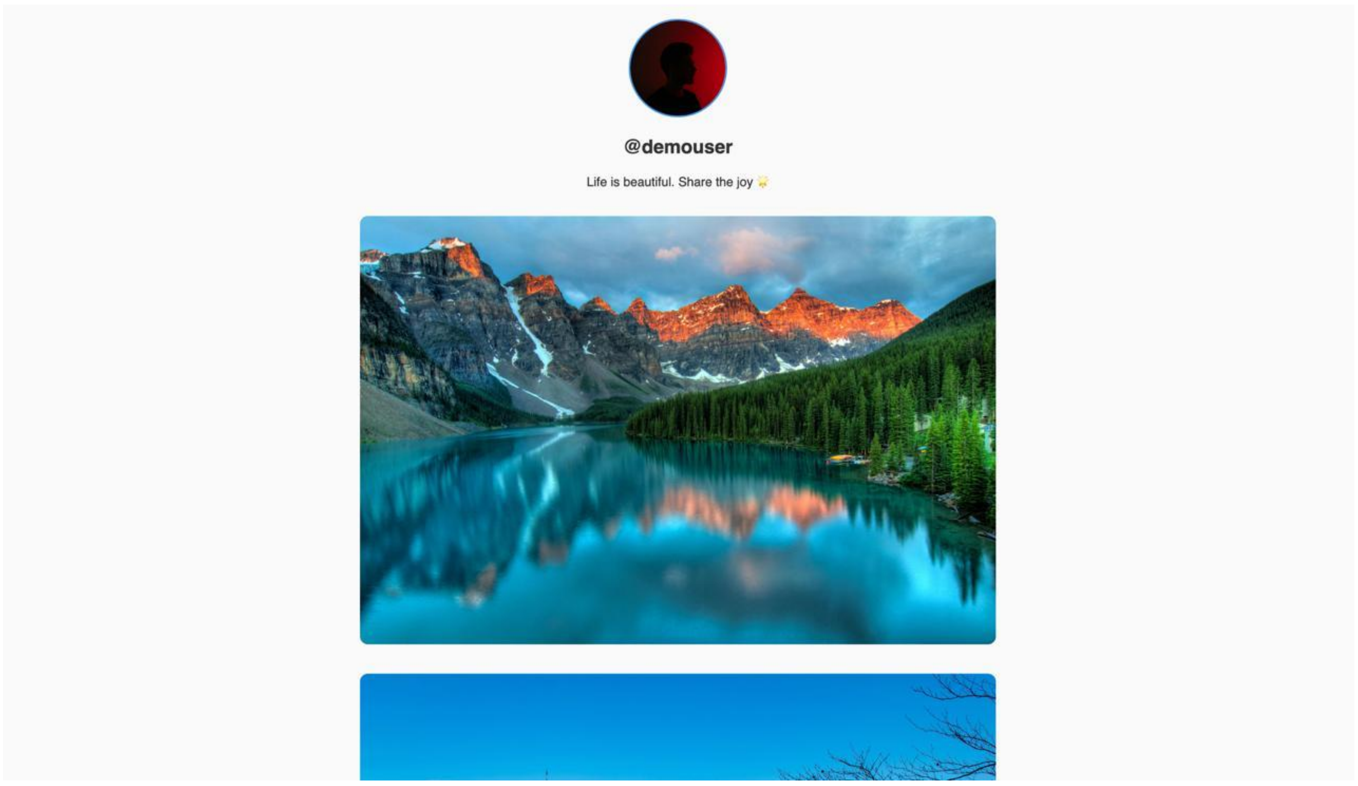
Design User Interface for the given project.





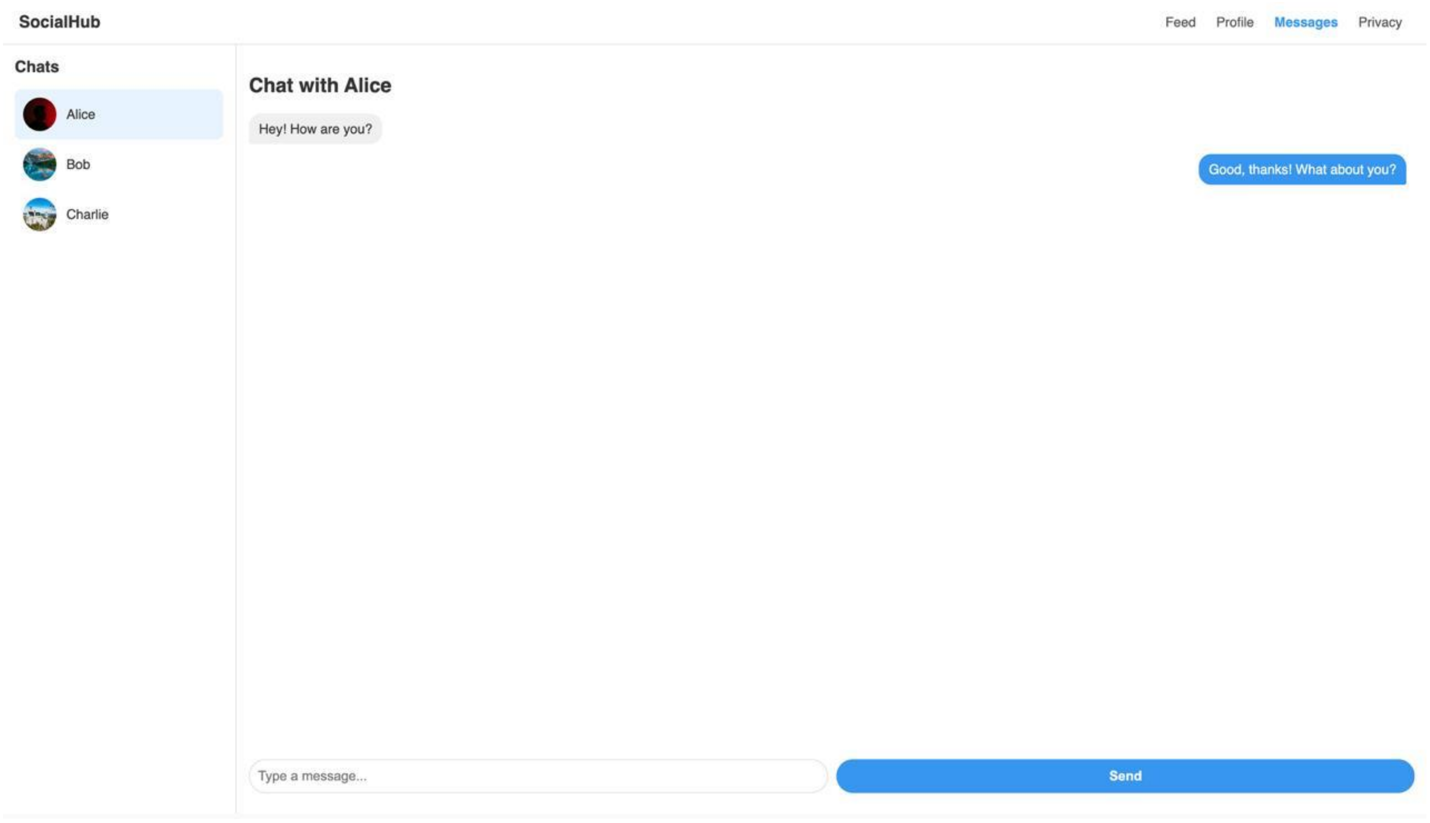


Had a great day



@demouser

Life is beautiful. Share the joy 🌟



Hey! How are you?

Good, thanks! What about you?

RESULT:

Thus, the UI for the given problem statement is completed successfully.

EX NO: 12 IMPLEMENTATIONS

AIM:

To implement the given project based on Agile Methodology.

PROCEDURE:

Step 1: Set Up an Azure DevOps Project

• Log in to Azure DevOps.

• Click "New Project" → Enter project name → Click "Create".

• Inside the project, navigate to "Repos" to store the code.

Step 2: Add Your Web Application Code

• Navigate to Repos → Click "Clone" to get the Git URL.

• Open Visual Studio Code / Terminal and run: git clone cd

• Add web application code (HTML, CSS, JavaScript, React, Angular, or backend like Node.js, .NET, Python, etc.).

• Commit & push: git add . git commit -m "Initial commit" git push

origin main Step 3: Set Up Build Pipeline (CI/CD - Continuous

Integration)

• Navigate to Pipelines → Click "New Pipeline".

• Select Git Repository (Azure Repos, GitHub, or Bitbucket).

• Choose Starter Pipeline or a pre-configured template for your framework.

• Modify the azure-pipelines.yml file (Example for a Node.js app):

```
trigger:

- main
```

```
pool:
 vmImage: 'ubuntu-latest'

steps:

 task: UseNode@1

inputs:

 version: '16.x'

-script: npm install

 displayName: 'Install dependencies'

-script: npm run build

 displayName: 'Build application'

-task: PublishBuildArtifacts@1

 inputs:

 pathToPublish: 'dist'

 artifactName: 'drop'
```

Click "Save and Run" → The pipeline will start building app.

Step 4: Set Up Release Pipeline (CD - Continuous

Deployment) • Go to Releases → Click "New Release

Pipeline".

• Select Azure App Service or Virtual Machines (VMs) for

deployment. • Add an artifact (from the build pipeline).

• Configure deployment stages (Dev, QA, Production).

• Click "Deploy" to push your web app to Azure.

RESULT:

Thus, the implementation of the given problem statement is done successfully.