Documentation

for

Snapgram

Prepared by Group-5

Paarth Kabthiyal(202312046)

Darshi Shah(202312055)

Aayushi Jindal(202312019)

Vivek Goplani(202312100)

Table of Contents

Ta	ble	of Contents	. ii
Re	visi	on History	••
		roduction	
		Purpose	
	1.2	Document Conventions	. 1
	1.3	Intended Audience and Reading Suggestions	. 1
	1.4	Project Scope	. 1
	1.5	User Story	. 2
2.	Ov	verall Description	2
	2.1	=	
	2.2	Product Features	. 3
	2.3	0.001 0.140,000 41.10 0.1141.400.01154.00	
		User Documentation	
		Assumptions and Dependencies	
	2.6	Use-cases	. 5
		stem Features	
4.	Fu	nctional Requirements	8
	4.1	User Interfaces	. 8
	4.2	Software Interfaces	. 8
5.	Ot	her Nonfunctional Requirements	9
	5.1	Security Requirements.	.9
	5.2	Software Database Requirements	10
6.	Ot	her Requirements	10
7.		ita flow Diagrams	
		ecision Tree and Decision Table.	
		eqif	
		ML Diagrams	•
11	. Us	er Interface	

1. Introduction

1.1 Purpose

The software requirements specified in this document pertain to the product "Snapgram." This document outlines the scope of the Snapgram application, covering its entire functionality and features as described in the provided user stories. The purpose of Snapgram is to provide users with a comprehensive social media platform where they can easily create accounts, connect with friends, share content, discover new content and communities, and interact with others seamlessly. This SRS (Software Requirements Specification) encompasses all aspects of Snapgram, ensuring a clear understanding of the app's capabilities and functionalities.

1.2 Document Conventions

The Software Requirements Specification (SRS) for Snapgram employs standard conventions for clarity and readability. Each requirement includes a priority level (High, Medium, or Low). The document maintains consistent formatting with headings for different sections. Requirements are presented as user stories, enhancing understanding. Key terms may be highlighted. Cross-referencing is used for coherence and traceability. Version control tracks changes across revisions. These conventions ensure a clear and structured outline of Snapgram's software requirements, facilitating effective communication and collaboration among stakeholders.

1.3 Intended Audience and Reading Suggestions

The Software Requirements Specification (SRS) for Snapgram is intended for developers, project managers, marketing staff, users, testers, and documentation writers. It outlines Snapgram's requirements, features, and functionalities, starting with an overview and followed by sections detailing functional and non-functional requirements, user stories, use cases, interface requirements, and a glossary. For readers, the suggested sequence begins with the overview, followed by functional and non-functional requirements, user stories, use cases, interface requirements, and the glossary, ensuring comprehensive comprehension and alignment with the app's development and usage.

1.4 Project Scope

The software being specified is Snapgram, a social media application aimed at facilitating seamless communication, content sharing, and discovery. Its primary goal is to enhance user engagement by providing a user-friendly platform for connecting with friends, sharing moments, and exploring new content. Snapgram aligns with corporate objectives of fostering meaningful connections and promoting user-generated content. This SRS focuses on specifying the scope of the next release, ensuring alignment with the long-term product vision while allowing for incremental development and refinement.

1.5 User Story

- As a user, I want to easily create an account on the social media app so that I can swiftly start using the platform without any complications.
- As a user, I want a seamless login process on the social media app so that I can access my personalized content and connect with friends effortlessly.
- As a user, I want to easily add friends and follow their posts on the social media app so that I can stay updated with their activities and share experiences with them.
- As a user, I want a dedicated explore page on the social media app so that I can effortlessly discover new content, interesting posts, people, and communities to engage with, enhancing my overall experience on the platform.
- As a user, I want a personalized profile page on the social media app so that I can view and manage my own posts, followers, following, and other account details, allowing me to curate my online presence and interact with my community effectively.
- As a user, I want an "All People" section on the social media app so that I can explore and discover all users on the platform, enabling me to connect with new people and expand my network easily.
- As a user, I want the capability to post photos on the social media app so that I can share my moments and experiences with my friends and followers.
- As a user, I want control over who can see my posts and profile on the social media app so that I can maintain my privacy and selectively share content.
- As a user, I want to effortlessly explore and discover new content, interesting posts, people, and communities on the social media app so that I can engage with them.
- As a user, I want to react to posts with likes and comments on the social media app so that I can express my appreciation or opinions on the content shared by others.
- As a user, I want to see the interactions on my posts on the social media app so that I can gauge the engagement and response from my friends and followers.
- As a user, I want to easily logout of my account on the social media app so that I can secure it and switch between multiple accounts if needed.

2. Overall Description

2.1 Product Perspective

Snapgram is a new, self-contained social media application developed to meet the growing demand for a user-friendly platform that facilitates seamless communication, content sharing, and discovery. It is not a follow-on member of a product family nor a replacement for existing systems but rather a standalone product aimed at providing a unique social networking experience.

- While Snapgram operates independently, it may interact with external systems and services to enhance its functionality. For example, it may integrate with authentication services for user login, utilize cloud storage services for media hosting, or incorporate advertising platforms for monetization purposes. These external interfaces play a crucial role in supporting Snapgram's features and operations.
- ➤ A simple diagram illustrating the major components of the overall system, subsystem interconnections, and external interfaces could be beneficial for understanding Snapgram's product perspective. However, as Snapgram is a standalone application, the diagram would primarily focus on its internal components and interactions rather than connections to larger systems or subsystems.

2.2 Product Features

Snapgram offers a comprehensive set of features aimed at providing users with a rich and engaging social media experience. The major features of the product include:

- 1. Account Management:
- User registration and login.
- Profile creation and customization.
- Password recovery and account settings management.
- 2. Social Networking:
- Adding friends and managing connections.
- Following users and receiving updates.
- Interacting with friends through likes, comments, and shares.
- 3. Content Sharing:
- Uploading and sharing photos and videos.
- Adding captions, tags, and location information to posts.
- Creating and sharing stories or temporary content.
- 4. Content Discovery:
- Exploring trending posts and hashtags.
- Discovering new users, communities, and interests.
- Personalized content recommendations based on user preferences
- 5. Explore Page:
- Dedicated section for discovering trending and popular content.
- Recommendations for users to follow and communities to join.
- Curated content based on user interests and engagement history.

- 6. User Interactions:
- Reacting to posts with likes, comments, and shares.
- Engaging with user-generated content through hashtags and mentions.
- Participating in live events, polls, and challenges.

2.3 User Classes and Characteristics

Snapgram caters to various user classes, each with distinct characteristics and usage patterns. Regular users constitute the primary audience, engaging with the platform daily for social networking, content sharing, and exploration. Occasional users access Snapgram less frequently, typically for periodic updates or interactions. New users, on the other hand, are recent additions to the platform and may require additional guidance to navigate its features. Experienced users are proficient in Snapgram's functionalities, having used the app for an extended period. Content creators contribute actively by regularly sharing photos, videos, or stories, while community managers oversee groups or pages within the app. Business accounts, representing organizations or influencers, utilize Snapgram for marketing and audience engagement. While all user classes are essential, efforts may prioritize regular users, content creators, and business accounts due to their significant contributions to engagement and content creation on Snapgram.

2.4 User Documentation

Snapgram will be complemented by a comprehensive set of user documentation components to aid users in effectively utilizing the application. These components include a detailed user manual covering account management, content sharing, and privacy controls; an online help system offering context-sensitive assistance within the app interface; tutorials providing guided walkthroughs of key features; FAQs addressing common queries; and release notes detailing updates and enhancements. The documentation will be delivered in printable PDF and online HTML formats, with video tutorials available for visual demonstrations. All documentation will adhere to established standards and best practices to ensure clarity and user-friendliness. Continuous feedback mechanisms will be in place to improve documentation based on user input and evolving needs.

2.5 Assumptions and Dependencies

Snapgram's development relies on several assumptions and dependencies that could impact the stated requirements:

- **1.Third-party Components:** The project assumes the availability and reliability of third-party services like authentication providers and cloud storage solutions. Changes or disruptions to these components may affect Snapgram's functionality.
- **2. Development Environment:** Stability and compatibility of development tools and frameworks are assumed throughout the project. Changes may necessitate adjustments to the development process.
- **3.User Behavior:** Assumptions are made about user engagement and preferences. Changes in user behavior may require adjustments to features.

- **4. Platform Updates:** Snapgram depends on the stability and compatibility of mobileoperating systems and web browsers. Updates may introduce compatibility issues.
- **5. External APIs and Services:** Snapgram relies on external APIs for various functionalities. Changes to these APIs may impact integration and functionality.
- **6. Market Trends:** Assumptions are made about market trends and user preferences. Changes in trends may influence feature prioritization.

2.6 Use-Cases

User Registration:

- Description: Allow users to easily create an account on the social media app.
- Actors: User, System
- Preconditions: User accesses the registration interface.
- Main Flow:
 - 1. User provides basic information (name, email, etc.).
 - 2. User agrees to terms of service and privacy policy.
 - 3. User submits registration details.
- Postconditions: User account is created successfully.

User Login:

- Description: Enable users to login seamlessly to access personalized content.
- Actors: User, System
- Preconditions: User has a registered account.
- Main Flow:
 - 1. User enters username/email and password.
 - 2. System verifies credentials.
 - 3. Úser gains access to their account.
- Postconditions: User is logged in and can access their personalized content.

Add Friends and Follow:

- Description: Allow users to easily add friends and follow their posts.
- Actors: User, Friends, System
- Preconditions: User is logged in.
- Main Flow:
 - 1. User searches for friends.
 - 2. User sends friend requests.
 - 3. Friends accept requests.
 - 4. User follows friends' posts.
- Postconditions: User is connected with friends and can see their posts.

Explore Page:

- Description: Provide users with a dedicated page to discover new content, people, and communities.
- Actors: User, System
- Preconditions: User is logged in.
- Main Flow:

- 1. User navigates to the Explore page.
- 2. System displays curated content, trending topics, and suggested users.
- Postconditions: User discovers new content and engages with it.

Personalized Profile Page:

- Description: Allow users to view and manage their own posts, followers, and account details.
- Actors: User, System
- Preconditions: User is logged in.
- Main Flow:
 - 1. User accesses their profile page.
 - 2. System displays user's posts, followers, and account settings.
 - 3. User can edit profile information and manage privacy settings.
- Postconditions: User's profile is updated as desired.

Post Photos:

- Description: Enable users to post photos on the social media app.
- Actors: User, System
- Preconditions: User is logged in.
- Main Flow:
 - 1. User accesses the post creation interface.
 - 2. User selects the option to post a photo.
 - 3. User uploads the desired photo and adds a caption if needed.
 - 4. User posts the photo.
- Postconditions: Photo is successfully posted on the user's profile and shared with followers.

Interact with Posts:

- Description: Enable users to react to posts with likes and comments.
- Actors: User, Friends, System
- Preconditions: User is logged in and viewing a post.
- Main Flow:
 - 1. User clicks on the like button or adds a comment on the post.
 - 2. System registers the interaction.
- Postconditions: User's reaction is displayed on the post, and engagement metrics are updated.

View Post Interactions:

- Description: Allow users to see the interactions on their posts.
- Actors: User, Friends, System
- Preconditions: User is logged in and viewing their own post.
- Main Flow:
 - 1. User accesses the post's interaction section.
 - 2. System displays likes, comments, and other engagement metrics on the post.
- Postconditions: User can gauge the engagement and response from friends and followers.

Logout:

- Description: Enable users to logout of their account securely.
- Actors: User, System
- Preconditions: User is logged in.
- Main Flow:
 - 1. User accesses the logout option in the account settings or navigation menu.
 - 2. User confirms the logout action.
 - 3. System logs the user out and redirects to the login page.
- Postconditions: User is logged out of the account and the session is terminated.

3. System Features

The system features of Snapgram are organized based on the major services provided by the product, ensuring clarity and logical organization of functional requirements:

3.1 User Authentication and Account Management:

- User registration: Allow users to create new accounts on Snapgram.
- User login: Enable users to securely log in to their accounts.
- Password recovery: Provide mechanisms for users to reset forgotten passwords.
- Account settings: Allow users to manage their account preferences and security settings.

3.2 Social Networking:

- Add friends: Enable users to search for and add friends to their network.
- Follow users: Allow users to follow other users to receive updates on their activities.
- Friend requests: Manage incoming and outgoing friend requests.
- News feed: Display updates from friends and followed users on the home screen.

3.3 Content Sharing:

- Upload photos and videos: Allow users to upload and share photos and videos on Snapgram.
- Add captions and tags: Enable users to add captions, tags, and location information to their posts.
- Story sharing: Allow users to create and share temporary stories with their followers.

3.4 Content Discovery:

- Explore page: Provide a dedicated section for users to discover trending posts, people, and communities.
- Trending hashtags: Display trending hashtags to facilitate content discovery.

• Recommendations: Recommend users to follow and content to explore based on user preferences and engagement history.

3.5 Profile Management:

- Profile customization: Enable users to customize their profile with profile pictures, bios, and other information.
- View and manage followers: Allow users to view and manage their followers and following lists.
- Edit profile: Provide options for users to edit their profile information and settings.

4. Functional Requirements

4.1 User Interfaces

- Snapgram's user interface is designed to be intuitive, visually appealing, and easy to navigate. It encompasses various logical characteristics across different interfaces:
- ➤ The registration and login interface feature standard form input conventions with clear error handling. It includes options for registration, login, and password recovery.
- The home feed interface displays posts from followed users and friends in a card-based layout. Users can interact with posts through likes, comments, and shares, with consistent navigation options and a search bar for exploration.
- User profiles maintain a consistent layout displaying profile information, follower counts, and posts. Users can edit their profiles and manage connections through follow/unfollow buttons.
- Post creation interface allows users to upload media files, add captions, and specify post visibility. It includes options for location tagging and post sharing.
- Explore page interface offers a grid layout for discovering trending content and users. It features infinite scroll functionality and filtering options.
- Snapgram's user interface follows modern design principles, ensuring consistency, usability, and accessibility. Detailed design specifications are documented separately for each interface.

4.2 Software Interfaces

Snapgram interfaces with various software components to provide its functionality seamlessly. It interacts with a database management system (DBMS) for storing and retrieving user data, posts, and engagement metrics. Operating systems like iOS, Android, and web platforms facilitate resource management and platform-specific features. Integration with third-party APIs enables functionalities like authentication, cloud storage, analytics, and advertising. Snapgram may also expose its own web services and APIs for

external interaction, ensuring interoperability with other systems. Internal libraries and frameworks aid in tasks such as UI rendering and network communication. These interfaces ensure smooth communication and data exchange, adhering to implementation constraints like standardized API protocols and programming languages for consistency and maintainability.

5. Other Nonfunctional Requirements

5.1 Security Requirements

Snapgram must ensure robust security measures, particularly when integrating with third-party services such as Google, to safeguard user data and privacy. The following security requirements are essential:

User Identity Authentication:

- > Snapgram should implement secure authentication mechanisms, including OAuth 2.0, when integrating with third-party services like Google.
- Multi-factor authentication (MFA) should be available to enhance user account security.

Data Encryption and Protection:

- All data exchanged between Snapgram and third-party services, such as user authentication tokens and personal information, must be encrypted using strong encryption algorithms.
- Snapgram must adhere to Google's security best practices, including encryption of data at rest and in transit, to protect user data.

Compliance with External Policies:

- Snapgram must comply with Google's security policies and guidelines when integrating with Google services, ensuring adherence to industry standards and best practices.
- Any data shared with or obtained from Google must be handled in accordance with relevant regulations such as GDPR and Google's Privacy Policy.

Security Certifications:

- Snapgram may be required to obtain security certifications such as Google Cloud Security Certification to demonstrate adherence to Google's security standards and best practices.
- Compliance with security certifications provides assurance to users regarding the protection of their data when using Snapgram's integration with Google services.

5.2 Software Database Requirements

Considering the purpose of Appwrite as a backend server and database platform, several additional quality characteristics are crucial for both customers and developers when utilized in Snapgram:

- 1. **Effortless Data Storage:** Snapgram effortlessly stores user data through Appwrite's online mode, ensuring a smooth and uninterrupted experience for users.
- 2. **Real-time Accessibility:** By leveraging Appwrite's online mode, Snapgram users can access their data in real-time, enabling instant updates and interactions within the application.
- 3. **Reliable Connectivity:** Appwrite's online mode ensures reliable connectivity, allowing Snapgram to maintain consistent access to data without disruptions or downtime.
- 4. **Secure Data Management:** Snapgram's integration with Appwrite's online mode prioritizes data security, ensuring that user information is stored securely and protected against unauthorized access.
- 5. **Streamlined Development:** The integration with Appwrite's online mode streamlines development efforts for Snapgram, providing developers with efficient tools and resources for managing and accessing data.
- 6. **Enhanced User Experience:** Overall, Snapgram's utilization of Appwrite's online mode enhances the user experience by providing a reliable, secure, and scalable platform for storing and managing data.

6. Other Requirements

In addition to the specified requirements outlined in the SRS, several other considerations are essential for Snapgram:

Database Backup and Recovery:

Snapgram requires a robust database backup and recovery mechanism to ensure data integrity and availability in case of unforeseen incidents such as hardware failures or data corruption.

Internationalization and Localization:

Snapgram aims to be accessible to users worldwide, necessitating support for internationalization and localization. All user-facing text and interface elements should be easily translatable into different languages and adaptable to various cultural norms and preferences.

Reuse Objectives:

Snapgram should prioritize the reuse of code components and modules to streamline development efforts, improve code maintainability, and accelerate feature implementation.

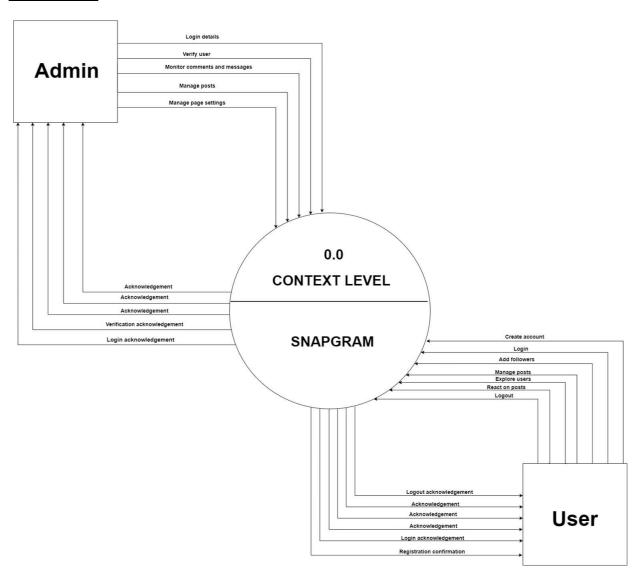
Encouraging code reuse helps reduce development time and enhances the overall stability of the application.

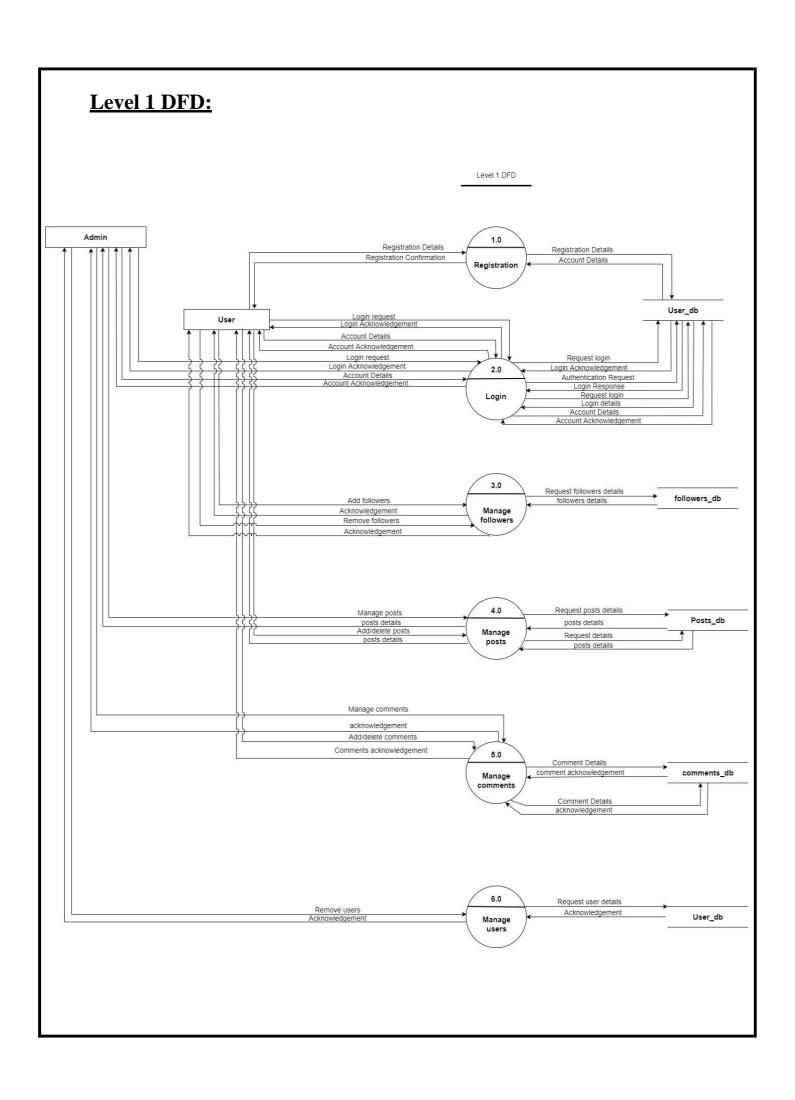
Error Handling and Logging:

Snapgram requires comprehensive error handling mechanisms to gracefully manage and recover from unexpected errors or exceptions. Additionally, robust logging capabilities are essential for tracking and troubleshooting issues efficiently.

7. Data Flow Diagrams:

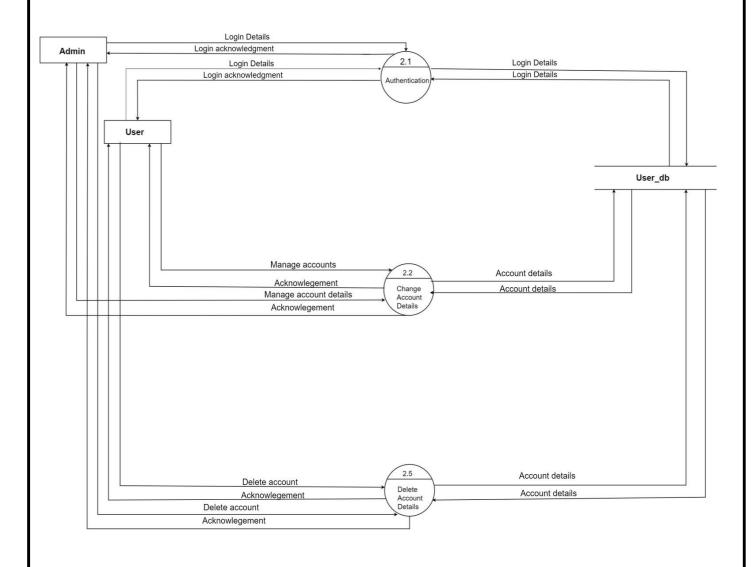
Context:



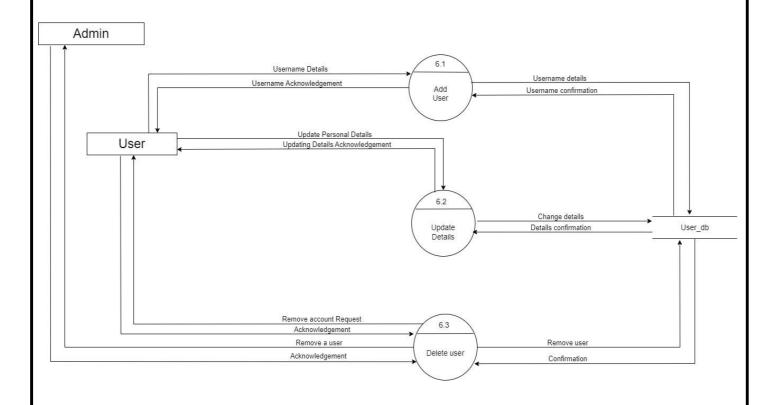


Level 2 DFD: Register: 1.1 Registration Details Registration Details Registration form Registration acknowledgment Registration Details User User_db Verification Details Verification acknowledgement 1.2 Verification Details Verification Details Verification Registration acknowledgement 1.3 Registration Details User ID Approval User ID

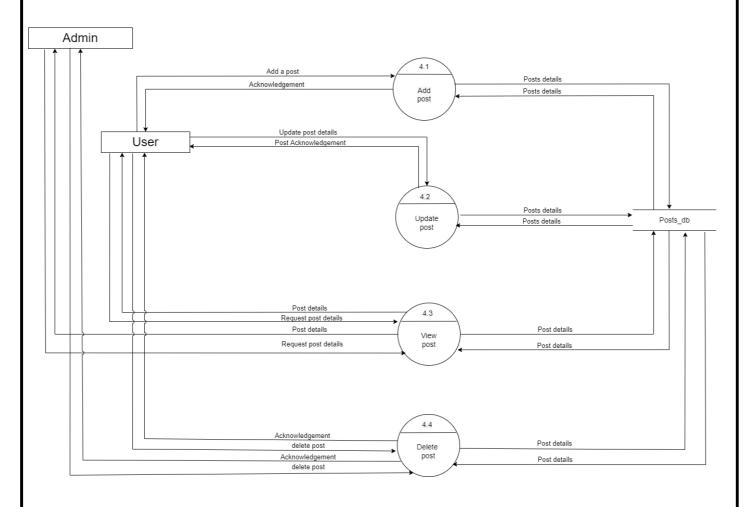
Login:

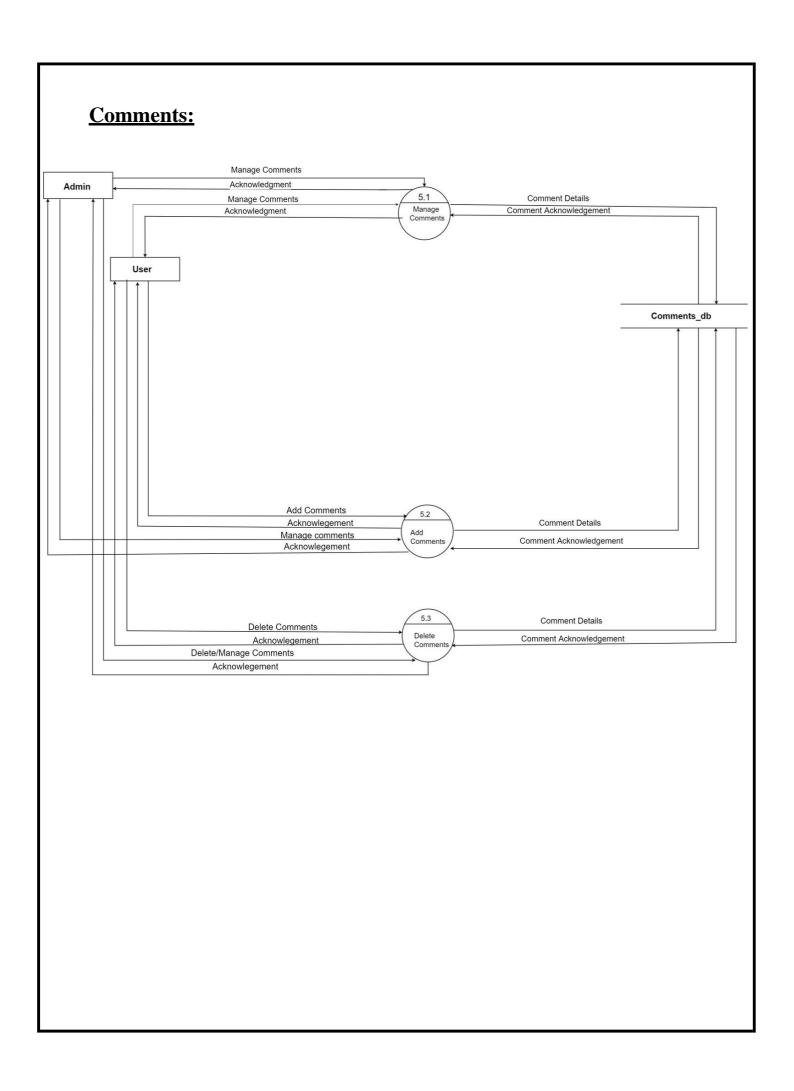


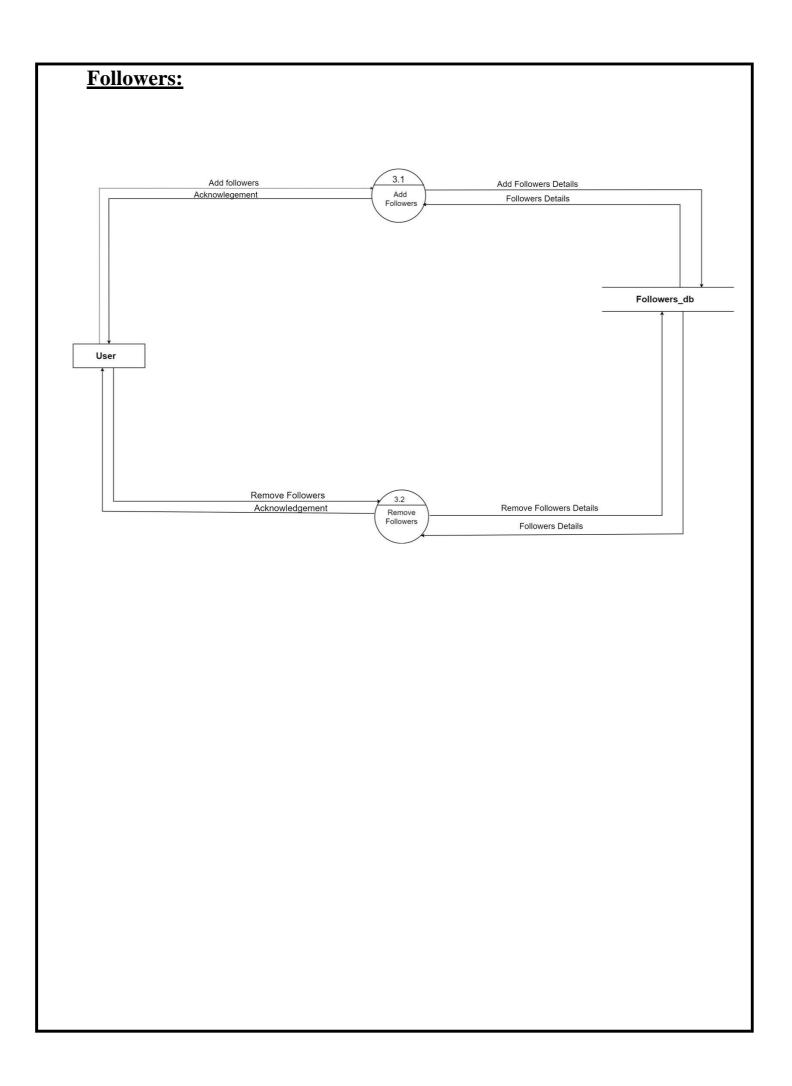
Manage User:



Manage Posts:







8.Decision Tree:

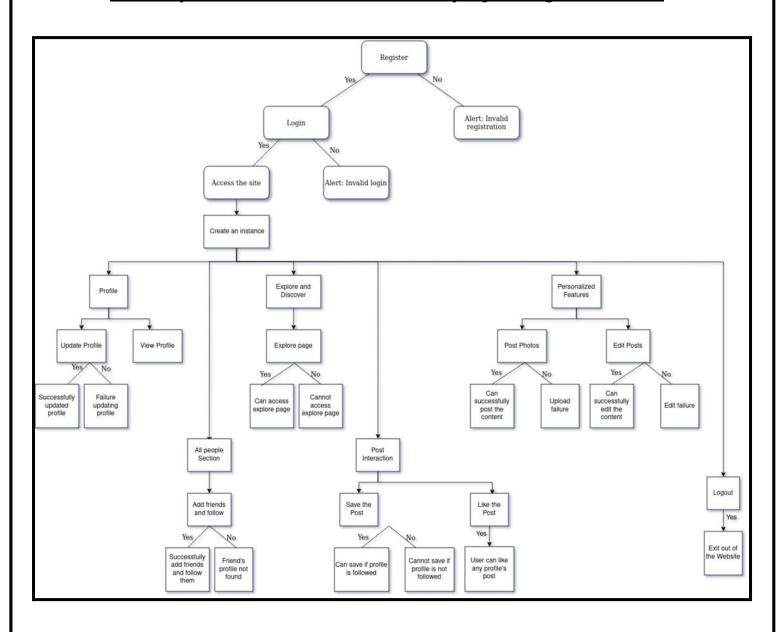
Decision Table for the project is as follows:

Conditions	Rule 1	Rule 2	Rule 3	Rule 4
Admin	T	F	T	F
User	F	T	T	F
Actions:				
Registration	T	F	Т	T
Login	T	T	T	F
Add friends/follow	F	T	T	F
Explore Page	F	T	T	F
Personalized Profile	F	T	T	F
All section people	F	T	T	F
Post photos	F	T	T	F
React to post	F	T	T	F
Manage User Profile	T	F	T	F
Manage Post	T	F	T	F
Logout	T	T	T	F

The Rule-Conditions are assumed as follows:

- Rule 1: The visitor to the project has admin-level access.
- Rule 2: The visitor to the project has user-level access.
- Rule 3: The visitor to the project has both admin-level and user-level access.
- Rule 4: The visitor to the project has neither admin-level nor user-level access.

The respective Decision Tree for the project is given below:



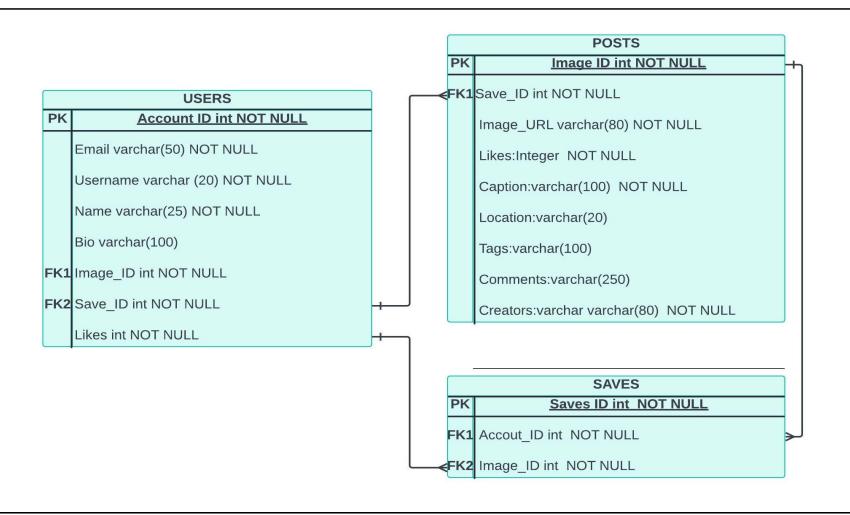
9.REQIF

4	Description	ID	Owner	Link	
1		Req: 1			
1.1	Registration and Login Module	Req: 1.1			
1.1.1	As a user i should be able to safely register to the website.	Req: 1.1.1	User		
1.1.2	As a user i should be able to come back and access my profile via logging in to the platform safely.	Req: 1.1.2	User		
1.2	Authentication Module	Req: 1.2			
1.2.1	• As a user i should be able to login to my account securely and my credentials should be safely stored and encrypted.	Req: 1.2.1	Admin/Platform		
1.2.2	$_{f \Theta}$ As a user i should be able to safely logout of the platform and it should be safely encrypted and no temporary data be saved on the platform.	Req: 1.2.2	Admin/Platform		
1.3	⊕ Home Page Module	Req: 1.3			
1.3.1	② As a user i should be able to access my home page with a variety of posts on it from my followings.	Req: 1.3.1	User		
1.3.2	As a user i should be able to view top content creators on the platform from my home page also.	Req: 1.3.2	User		
1.4	② User Profile Module	Req: 1.4			
1.4.1	As a user i should be able to edit my profile picture.	Req: 1.4.1	User		
1.4.2	② As a user i should be able to change my name for my profile.	Req: 1.4.2	User		
1.4.3	② As a user i should be able to edit/add to the bio section of my profile so that i am able to express much better to the public.	Req: 1.4.3	User		
1.5	Explorer Module	Req: 1.5			
1.5.1	② As a user i should be able to browse the explore section and look at the variety of content that is trending.	Req: 1.5.1	User		
1.5.2	② As a user i should be able to search for specific types of posts in the explore section in accordance to my tags and filtering.	Req: 1.5.2	User		
1.6	Post Creation Module	Req: 1.6			
1.6.1	As a user i should be able to create a post as per my preferrence.	Req: 1.6.1			
1.6.1.1	As a user i should be able to add image to my post.	Req: 1.6.1.1	User		
1.6.1.2	As a user i should be able to add other media formats to my post.	Req: 1.6.1.2	User		
1.6.1.3	As a user i should be able to add captions to my posts for my own customization.	Req: 1.6.1.3	User		
1.6.1.4	As a user i should be able to add tags to my posts so as to make it more search friendly.	Req: 1.6.1.4	User		
1.7	Post Interactions Module	Req: 1.7			
1.7.1	As a user i should be able to interact with the posts on the platform.	Req: 1.7.1			
1.7.1.1	As a user i should be able to like the posts as per my liking.	Req: 1.7.1.1	User		
1.7.1.2	As a user i should be able to save the posts for future view and reference.	Req: 1.7.1.2	User		

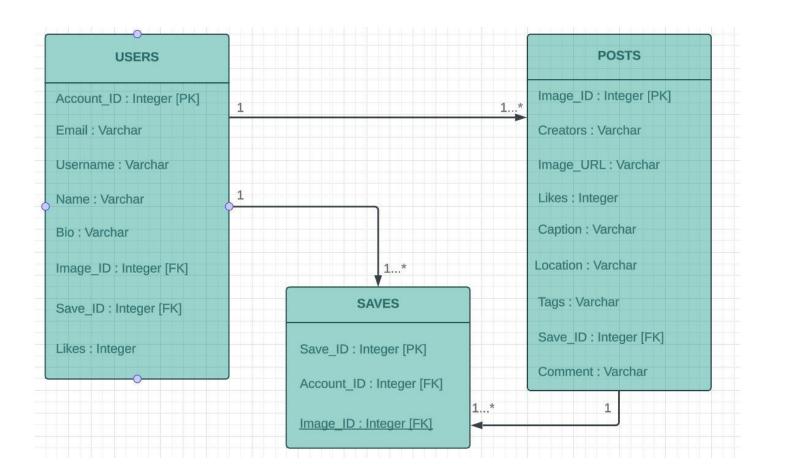
1.8	User Interactions Module	Reg: 1.8		
1.8.1	As a user i should be able to view a specific user.	Rea: 1.8.1		
	·			
1.8.1.1	As a user i should be able to view their profile picture.	Req: 1.8.1.1	User	
1.8.1.2	As a user i should be able to view their posts, followers and following counts.	Req: 1.8.1.2	User	
1.8.1.3	As a user i should be able to follow the user from their user view page.	Req: 1.8.1.3	User	
1.9	Data and Security Module	Req: 1.9		
1.9.1		Req: 1.9.1	Admin/Platform	
1.9.2	$_{m{\Theta}}$ As a user i should know that the platform complies with the latest authentication and security guidelines, ensuring best practices and industry standards.	Req: 1.9.2	Admin/Platform	
1.9.3	As a user i should always be able to browse the latest version of the website platform and have a bug-free and secure browsing experience.	Req: 1.9.3	Admin/Platform	

10.UML diagrams

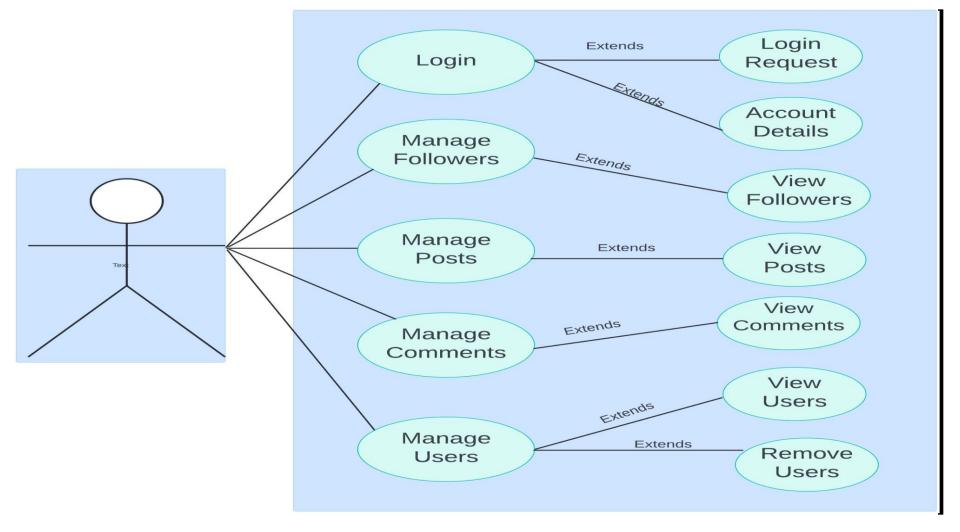
ER Diagram



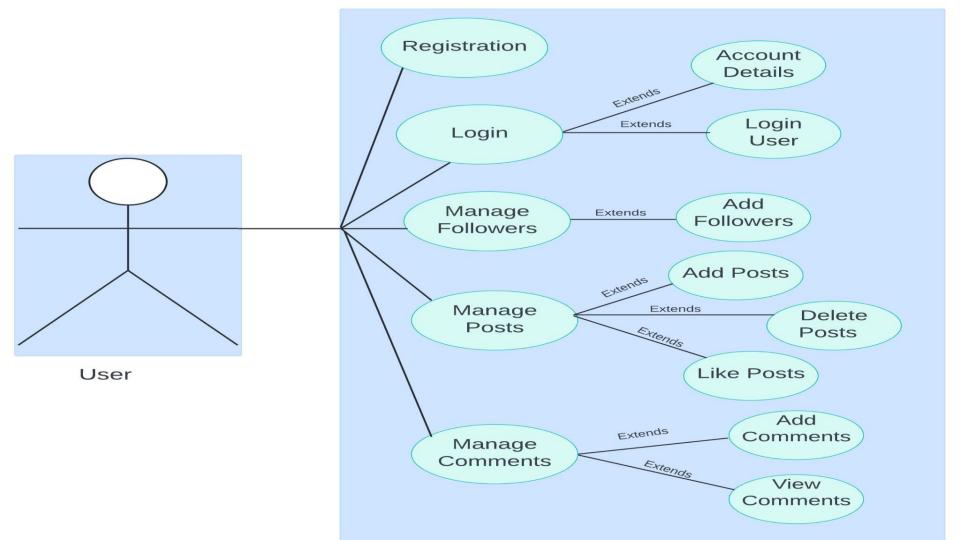
Class Diagram



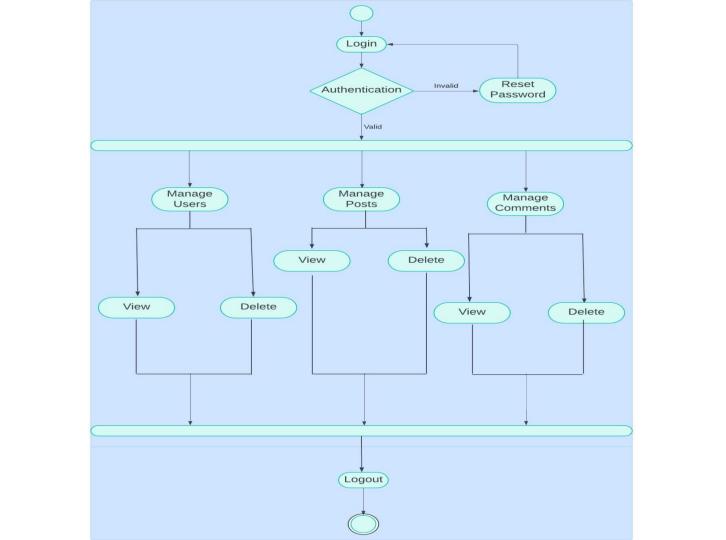
Admin Usecase



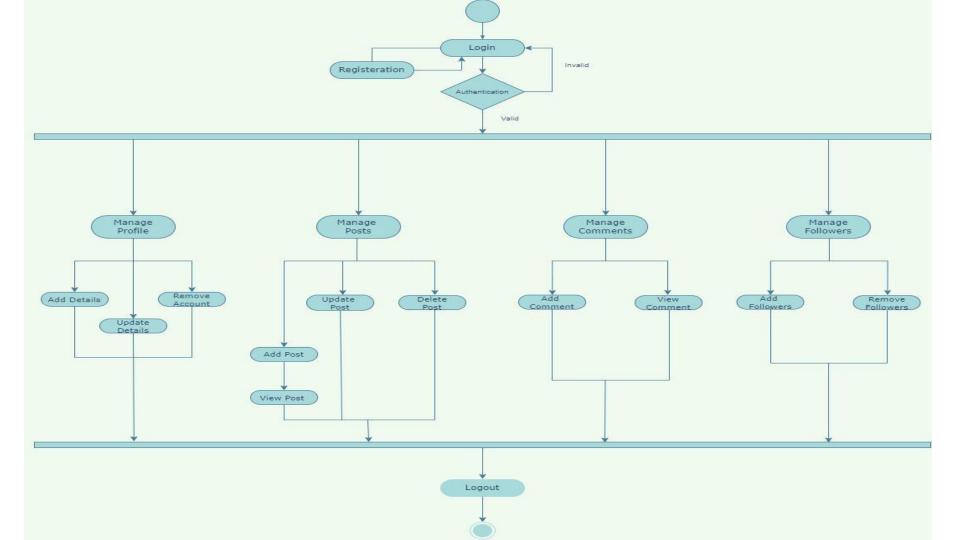
User Usecase



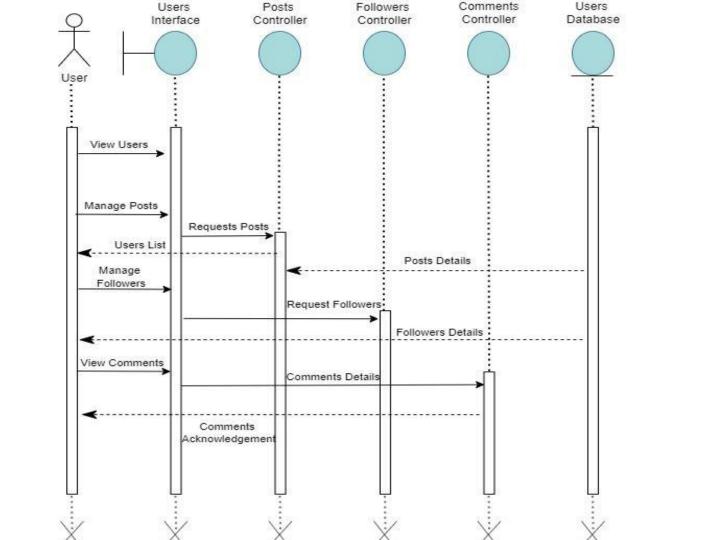
Admin Activity Diagram



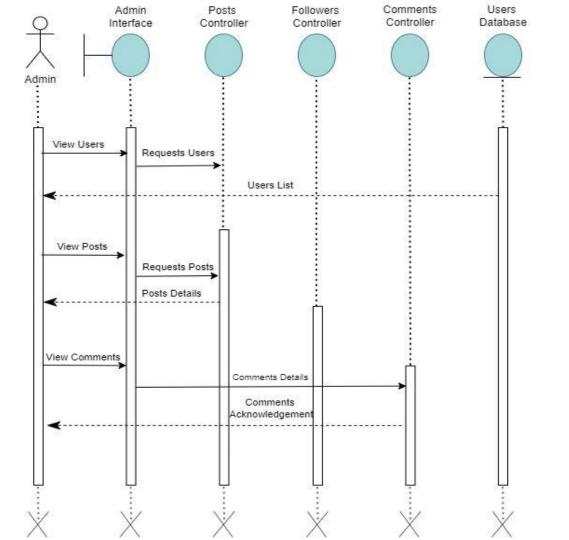
User Activity Diagram



User Sequence Diagram



Admin Sequence Diagram

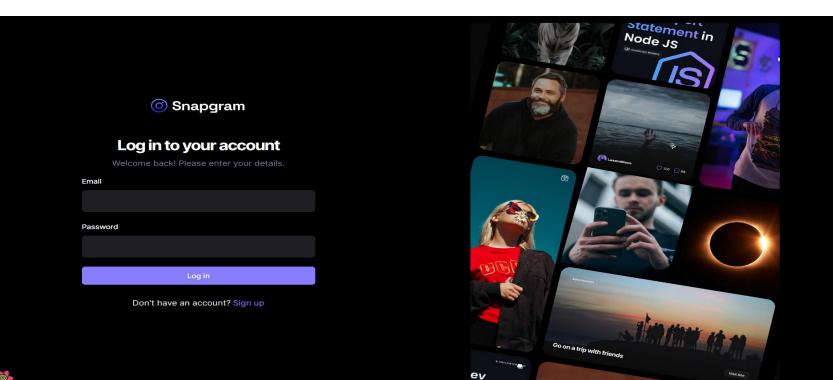


User Interface

Registration

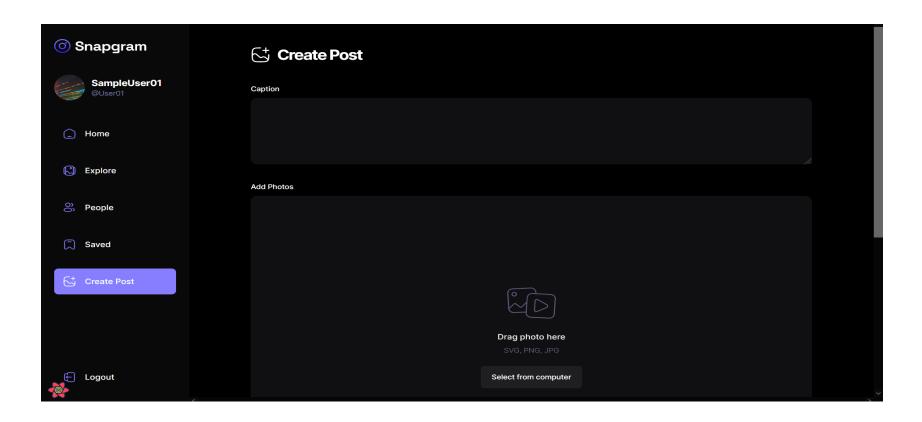
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Create a new account	
To use snapgram, Please enter your details	
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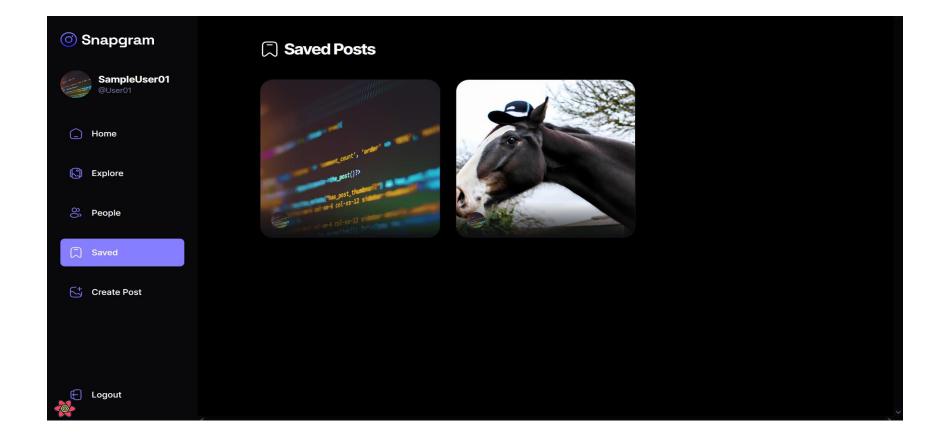




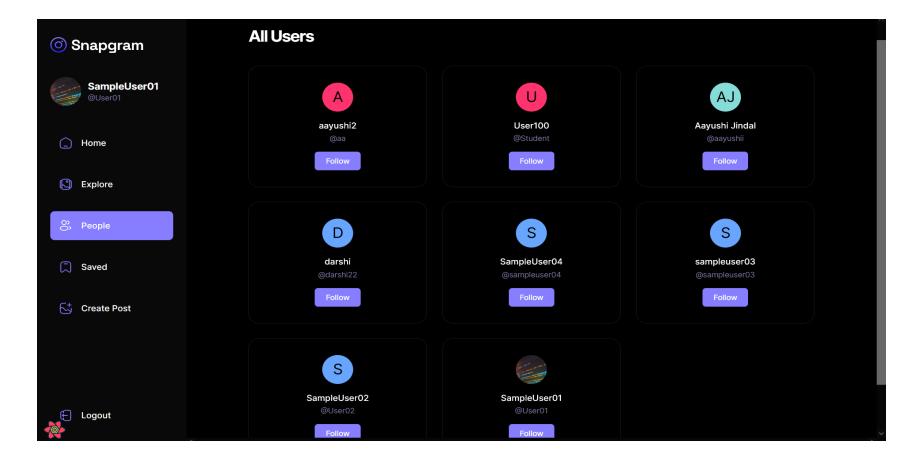
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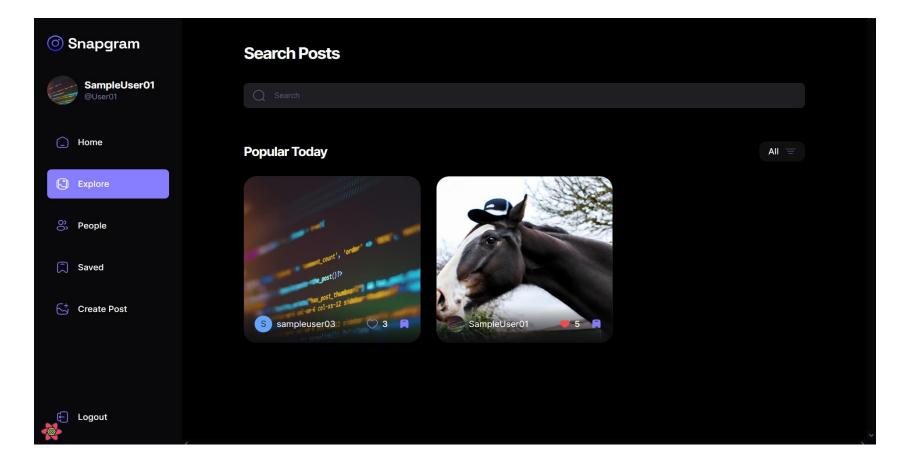
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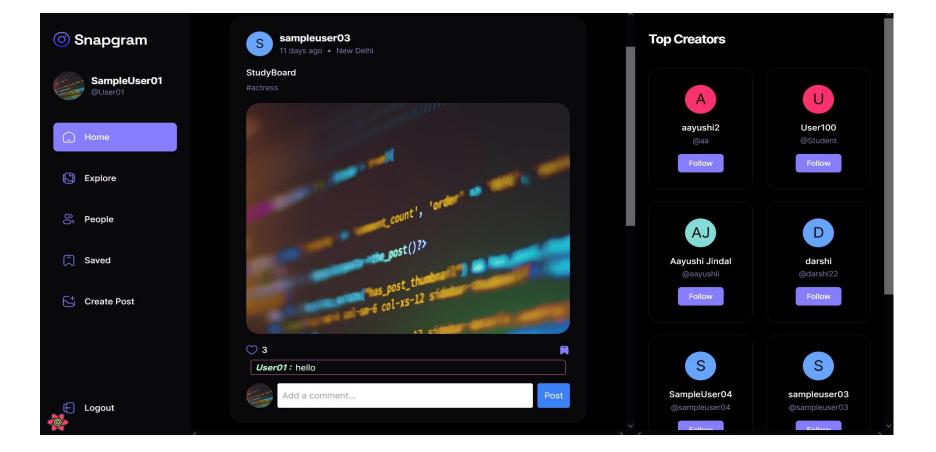
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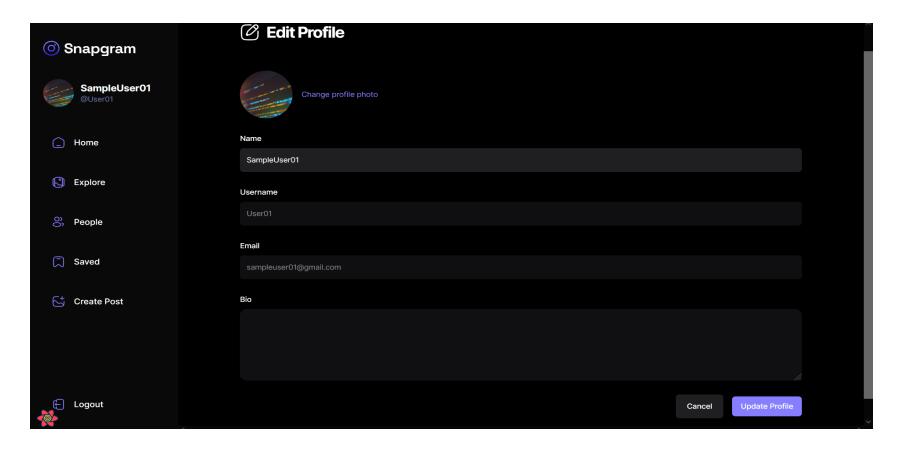
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