



COMSATS University Islamabad (CUI)

**Software Design Description
(SDS DOCUMENT)**

For

News Wave: Participatory Journalism App

Version 1.0

By

Mohsin Ali CIIT/SP20-BCS-053/ISB

Muhammad Abdur Rehman CIIT/SP20-BCS-054/ISB

Supervisor

Mr. Qasim Malik

Bachelor of Science in Computer Science (2020-2024)

Table of Contents

Revision History	iii
Application Evaluation History	iv
1. Introduction.....	1
1.1 Scope.....	1
1.2 Modules.....	2
1.2.1 Module 1: User Management	2
1.2.2 Module 2: Content Management	2
1.2.3 Module 3: Content Moderation	2
1.2.4 Module 4: Augmented Reality Aided Video Reporting.....	3
1.2.5 Module 5: Multimedia Enhancement.....	3
1.2.6 Module 6: Content Privacy	4
1.2.7 Module 7: Journalist Hiring	4
1.2.8 Module 8: Payment and Bidding.....	4
1.2.9 Module 9: Notification and Recommendations.....	5
2. Design Methodology and Software Process Model	5
3. System Overview	5
3.1 Architectural Design	6
4. Design Models.....	6
4.1 Activity Diagram	6
4.2 Class Diagram	17
4.3 Sequence Diagram.....	18
5. Data Design.....	23
5.1 Date Dictionary	23
5.2 Schema.....	25
6. Human Interface Design	29
6.1 Screen Images.....	30
6.2 Screen Objects and Actions.....	46
7. Implementation	48
7.1 Algorithm.....	48
7.2 External APIs/SDKs	51
7.3 User Interface	52
7.4 Deployment	64
8. Testing and Evaluation	65
9. Conclusion	88

Revision History

Name	Date	Reason for changes	Version

Application Evaluation History

Comments (by committee) *include the ones given at scope time both in doc and presentation	Action Taken

Supervised by
Supervisor's Name

Signature_____

1. Introduction

The News Wave application is a web and mobile-based platform that allows users to upload images and videos as news content and share them with others. The platform provides news channels with access to a wide variety of user-generated content, which they can use to produce news reports. Users can also apply for jobs posted by news channels to become official news reporters. This Software Design Specification document outlines the design and architecture of the News Wave application. It includes a detailed description of each module, including User Management, Content Management, Content Moderation, Augmented Reality Aided Video Reporting, Multimedia Enhancement, Content Privacy, Journalist Hiring, Payment and Bidding, and Notification and Recommendations. The document provides a comprehensive overview of the design of the application, including the system architecture, class diagrams, entity-relationship diagrams, and sequence diagrams. It also describes the functionality and behavior of the various modules, as well as the interactions between them. This document serves as a reference for developers and stakeholders involved in the development of the News Wave application. It provides a clear understanding of the software design, and outlines the specifications and requirements for the application's development.

1.1 Scope

The project News Wave will be a problem-solving application for several users. It will be designed as a mobile application for users and a web platform for News Channels. There will be two kinds of users: User and News Channel. This application's primary user will be the user/Citizen journalist. Our system will assist citizen journalists to quickly and easily report on breaking news stories in their area which may include accidents, protests or other news worthy events in addition to that they can also upload photos and news articles. Users will be able to record the events use the features such as background audio, special filters, teleprompter helping them to read a script while recording the video, multimedia editing and provide them to news channel or other buyers who are interested to buy the content. A bidding process will ensure that the content owner gets proper payment for the quality of content. The content will run through machine learning algorithms before upload to scan for accuracy, avoid any violation or misinformation. In the system there will be a news feed which will allow us to see the content uploaded by other users and consume different content based on category. News channels will be able to hire citizen journalists to cover events profiles of citizen journalists will appear on an interactive map where news channels will be able to decide who to hire based on the user's review. Our System will also provide chat service to interact with different News channel and other users. Users will also get alerts on events happening in their areas so that they can record them if interested.

1.2 Modules

The modules for the project are:

1.2.1 Module 1: User Management

This module focuses on account creation and management of users. The user will be able to access the functionalities of the application using Login. They can view their profile and edit their information.

FE-1: Users will be able to register an account.

FE-2: Users will be able to login into their Profile.

FE-3: This module will let to reset the password if forgotten.

FE-4: This module will let to change the password.

FE-5: This module will let to manage Two Factor Authentication.

FE-6: This module will let user to edit profile.

FE-7: This module will let to deactivate your account.

FE-8: This module will allow a user to sign out of their account.

1.2.2 Module 2: Content Management

This module will be responsible for organizing and publishing user-generated content and to distribute the content submitted by the user to appropriate channels will include features such as multimedia upload, text editor, content categorization, content sharing, publication, and promotion.

FE-1: Users will be able to upload content including photos, videos, and articles.

FE-2: View, update, and delete their uploaded content.

FE-3: Users will be able to assign a category to content using tags.

FE-4: Users will be able to upload multimedia.

FE-5: Users will be able to provide a price for the selling of their content.

FE-6: Provide their content to appropriate channels for the bidding process.

FE-7: Users can maintain their uploaded content list.

FE-8: Users can maintain a record of their sold content.

FE-9: To track the performance of uploaded content over time by metrics such as views and likes.

FE-10: Users will be able to view others content on App's homepage.

FE-11: Highlight the most relevant story on App's homepage or in a specific category.

FE-12: Users will be able to search for content.

1.2.3 Module 3: Content Moderation

This module will help ensure that the content shared by users is appropriate, accurate, and complies with community guidelines. Machine learning algorithms can scan for keywords and patterns or use

tags to identify potential violations and filter out inappropriate content, such as hate speech, harassment, and misinformation.

FE-1: This module will analyze the content before upload to ensure it is appropriate and accurate.

FE-2: Users will be provided alerts if the content violates the app policy.

FE-3: Users will not be able to upload content if it violates app policy.

FE-4: Users will be able to report content.

FE-5: Content reported by the majority will be taken down.

FE-6: Users will be provided clear guidelines on content accuracy.

1.2.4 Module 4: Augmented Reality Aided Video Reporting

This module will provide citizen journalists with a powerful tool to use their phone's camera for covering breaking news and events in real time.

FE-1: Users will be able to record video from their phone's camera.

FE-2: Users will be able to add a script that can help them while recording.

FE-3: Users will be able to read a script on a mobile screen while recording.

FE-4: Script will not be added to the video on upload.

FE-5: Users will be able to apply different augmented reality based filters like different news channels etc.

FE-6: Users will be able to add a caption of covered news on the filter.

FE-7: Users will be able to capture the location of the video using the phone's GPS.

FE-8: Users will be able to add a background track from the gallery while recording.

FE-9: Users will be able to save the video.

1.2.5 Module 5: Multimedia Enhancement

This module will include features editing tools for photos and videos, the ability to add captions and annotations, and the ability to overlay graphics and animations allowing best practices for creating high-quality multimedia content.

FE-1: Users will be able to edit photos and videos.

FE-2: Users will be able to select and apply different effects including size, dimensions, etc.

FE-3: Crop/Trim video.

FE-4: Users will be able to change the resolution of their video.

FE-5: Users will be able to add text to their videos or photos.

FE-6: Users will be able to adjust brightness, contrast, and saturation.

FE-7: Users will be able to add background audio to their videos.

1.2.6 Module 6: Content Privacy

This module will provide users with control over their content and protect their privacy and security. The users will be able to add a watermark on their content so that any other user will not be able to steal it basically a copyright mechanism.

FE-1: Users will be provided a personal watermark for their content.

FE-2: Users will be able to add watermark to their videos, articles, etc preventing them to be stolen.

FE-3: Users will be able to limit access to their content.

FE-4: if a news channel buys a User's content they will provide their content after removing the watermark.

FE-5: The news channel will be able to get the content only on payment.

1.2.7 Module 7: Journalist Hiring

This module will allow the News channel to hire citizen journalists to send location-based exclusives.

FE-1: Users profiles will appear on an interactive map for hiring.

FE-2: The News channel will be provided a job posting board, where they can post job opportunities and details about the event or story they need coverage for.

FE-3: News channel will be able to post application.

FE-4: Users interested in the news channel request will be able to apply.

FE-5: News channels will be able to screen out the applying users on basis of their reviews.

FE-6: News channel and hired journalist will be provided chat service to communicate with each other.

1.2.8 Module 8: Payment and Bidding

This module can enable users to submit their content to news outlets, who can then bid on the content based on its value and potential for publication. It provides a way for citizen journalists to monetize their content and earn compensation for their work.

FE-1: The News channel will be shown payment options, Easy-Paisa, etc to buy a journalist's content.

FE-2: The News channel will be able to bid for the user's content.

FE-3: Users will be able to set a price for their content.

FE-4: Users will be able to track payment histories.

FE-5: The News channel will be able to give a rating on the journalist's content.

FE-6: Users will be provided alerts on payment statuses.

FE-7: Users will be provided bidding updates.

1.2.9 Module 9: Notification and Recommendations

This module provides push notification to users based on a major event taking place around them based on their geo-location and also recommend News channels with recommended users.

FE-1: Users will be provided notifications on ongoing events and other relevant information.

FE-2: Users will be able to customize their notification settings.

FE-3: Users will be notified about events based on their location.

FE-4: Users will be able to opt-in or out of notifications and recommendations at any time.

FE-5: News channels will be recommended to Users in their area of interest.

2. Design Methodology and Software Process Model

Incremental Model will be used to design this software. Following are the reasons to choose this model.

- Less costly.
- Customer interaction after each module.
- Easy to test and debug modules

Object-oriented design Methodology will be used because it offers:

- Code reusability
- Easier to design and debug
- Easier maintenance
- Objects can be created according to their characteristics.

3. System Overview

In particular this document contains system requirements such as user requirements, hardware, software and communication requirements. This system provides maximum security to the user to overcome the dangerous situation. It has different options in which when the things or object are detected, then this detected thing is converted into notification with details that appears to the owner. It also includes the inefficient and operational requirements of the system for what a precise, accurate, regenerative, accurate and reliable system will be and what the system requirements are. It also includes requirements for identification techniques, contextual diagrams, class diagrams and what the system will work on including the operating system environment. This system will consist of 9 modules further divided into some major components. These will be implemented in the form of classes and will be designed as functional unit. User is the core component of the system. All

other components are dependent on them. The user and system are responsible for profile management.

3.1 Architectural Design

3-Tier Architecture design will be used in News Wave.

A 3-Tier Architecture is a well-designed software program that organizes applications into three logical and physical computer components: a launch phase, or an easy-to-use interface; application phase, in which data is processed; and the data section, where the data associated with the application is stored and managed. The great advantage of three-phase design is that because each phase operates on its own infrastructure, each phase can be developed simultaneously by a separate development team and can be updated or modified as needed without compromising other components. The main advantages of a 3-tier architecture design are rapid development, advanced scaling, reliability, and safety.

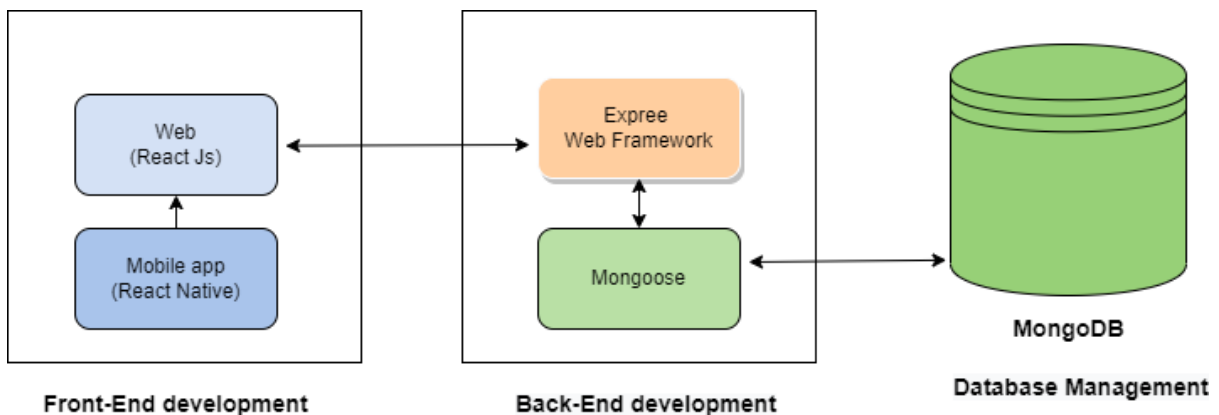


Figure 1 Architecture design diagram

4. Design Models

Design Models for Object Oriented Development Approach

4.1 Activity Diagram

Below are the activity diagrams of News Wave.

4.1.1 User Sign Up

Figure 2 is the Activity Diagram of the User Sign up. It shows us the process of user signup taking place in our application.

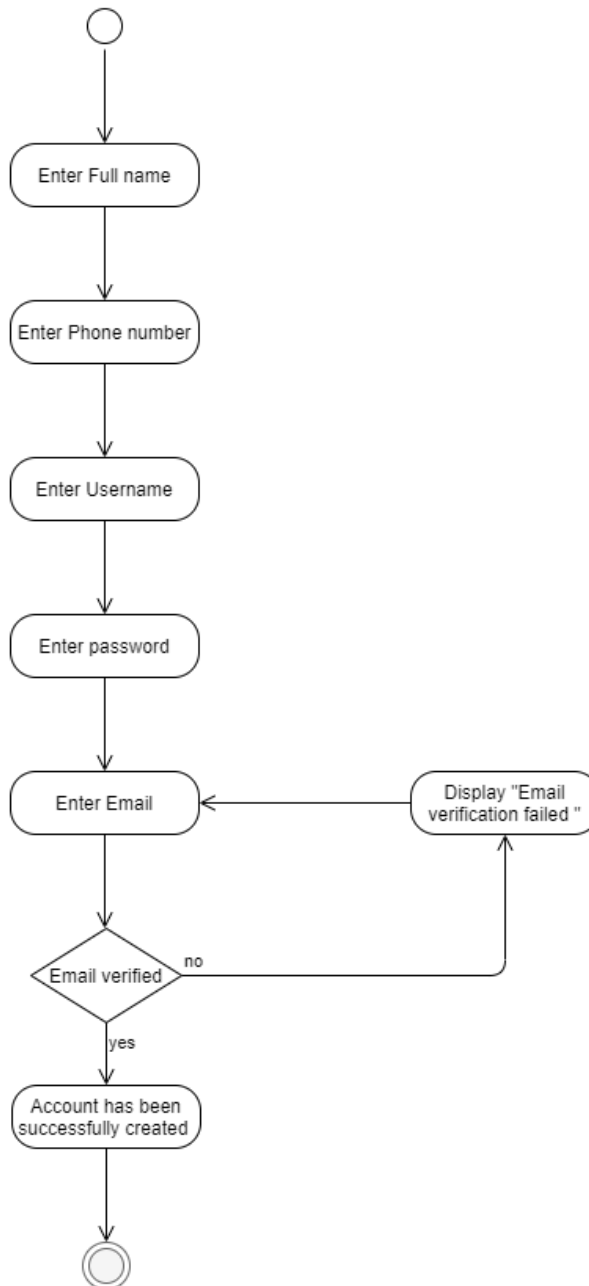


Figure 2 Activity diagram for User Signup

4.1.2 User Login

Figure 3 is the Activity Diagram of the User Login. It shows us the process of user Login taking place in our application.

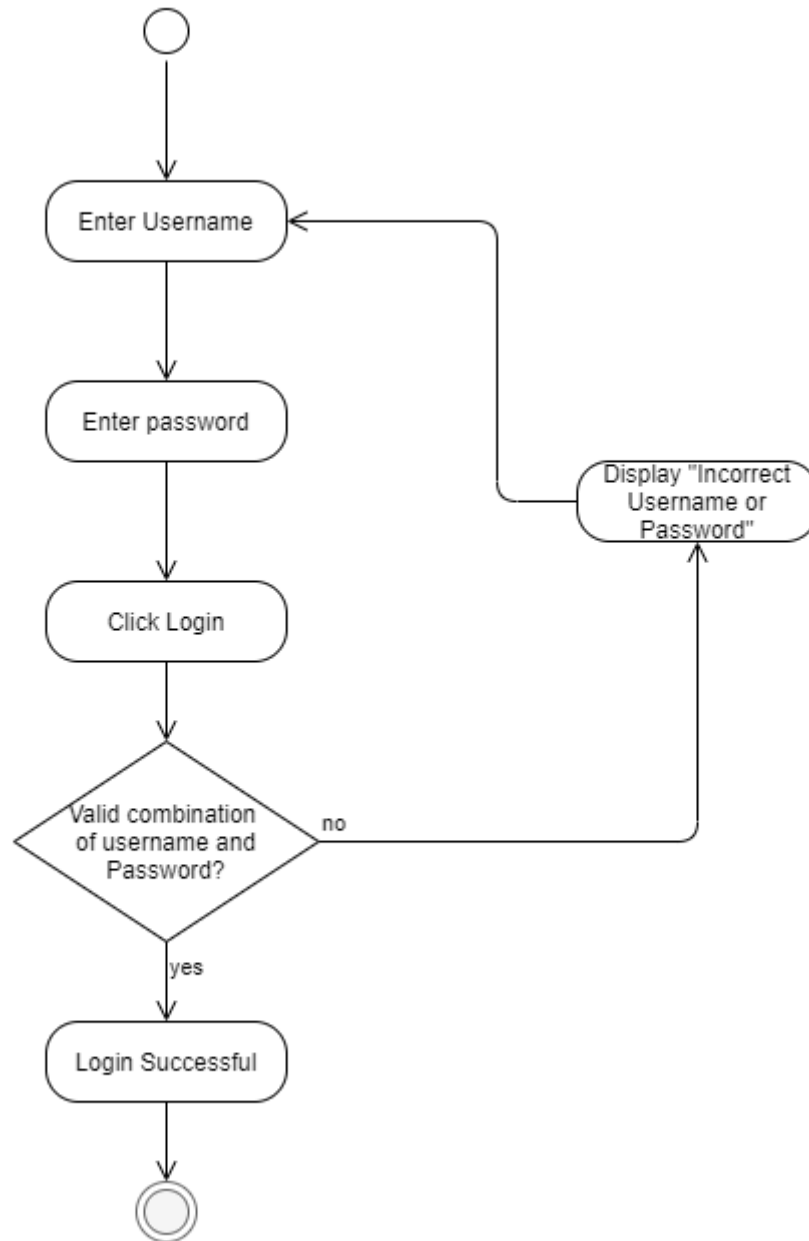


Figure 3 Activity diagram for User Login

4.1.3 Content Upload

Figure 4 is the Activity Diagram of the Content Upload. It shows us the flow of application through User and shows the steps a user will perform while uploading content.

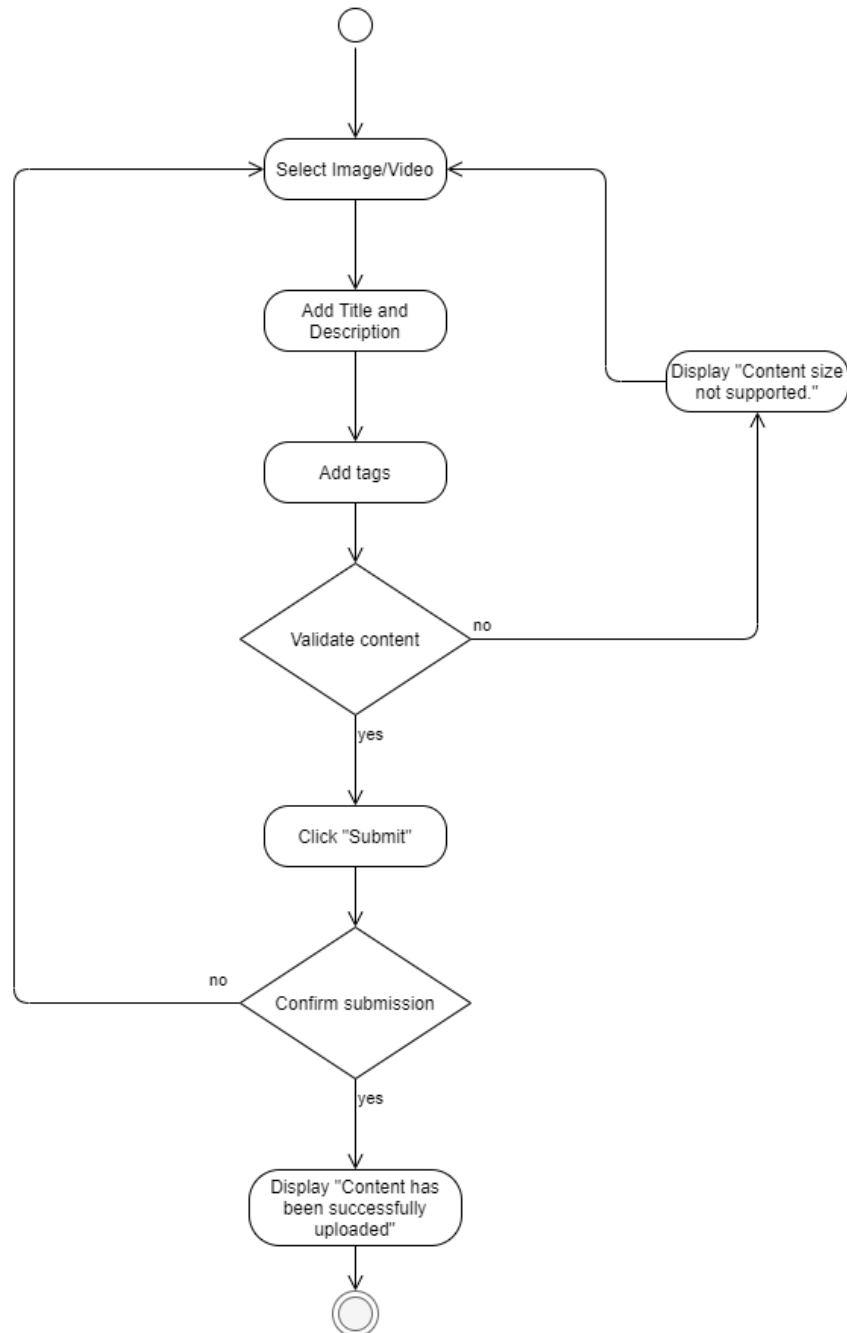


Figure 4 Activity diagram for Content Upload

4.1.4 Update Content

Figure 5 is the Activity Diagram of the update content. It shows us the flow of application through user, along-with depicting the actions that the user can perform while updating content.

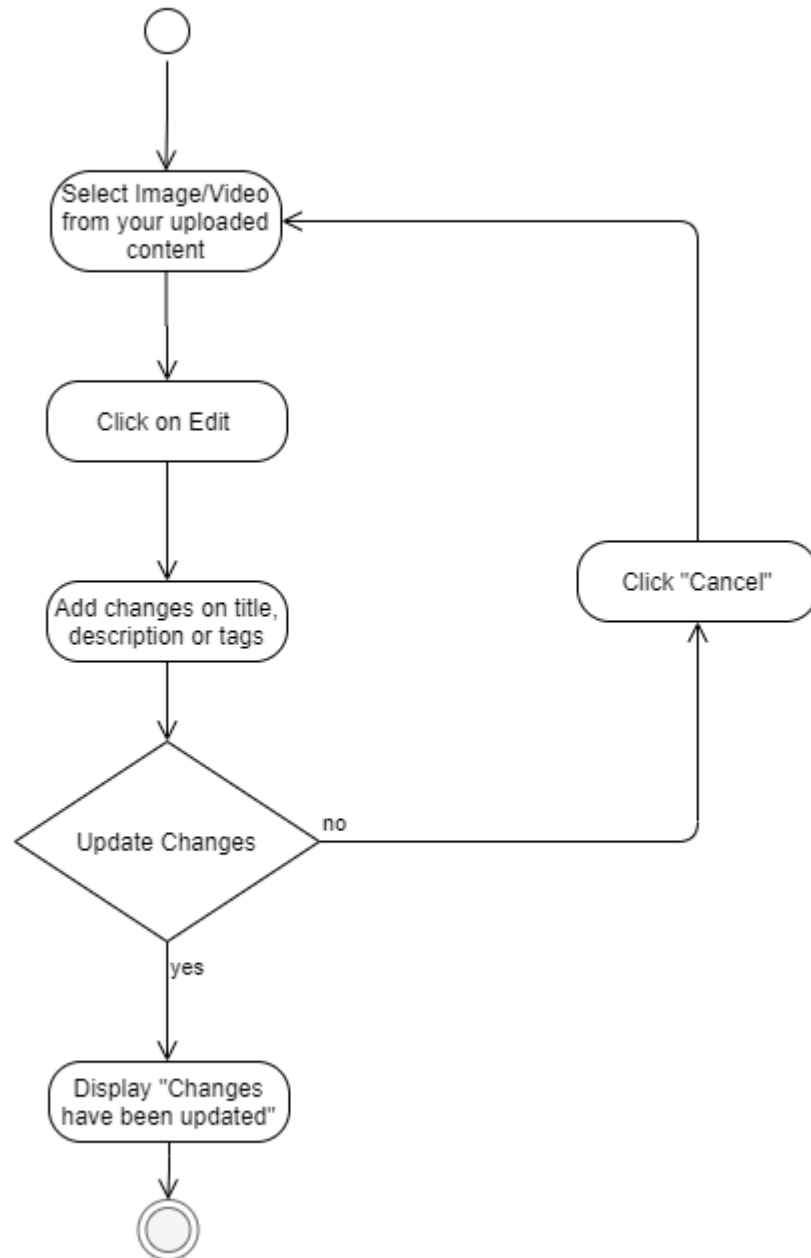


Figure 5 Activity diagram for Update Content

4.1.5 Content Moderation

Figure 6 is the Activity Diagram of the content Moderation. It shows us the flow of application when scanning content for any misinformation or inappropriate content.

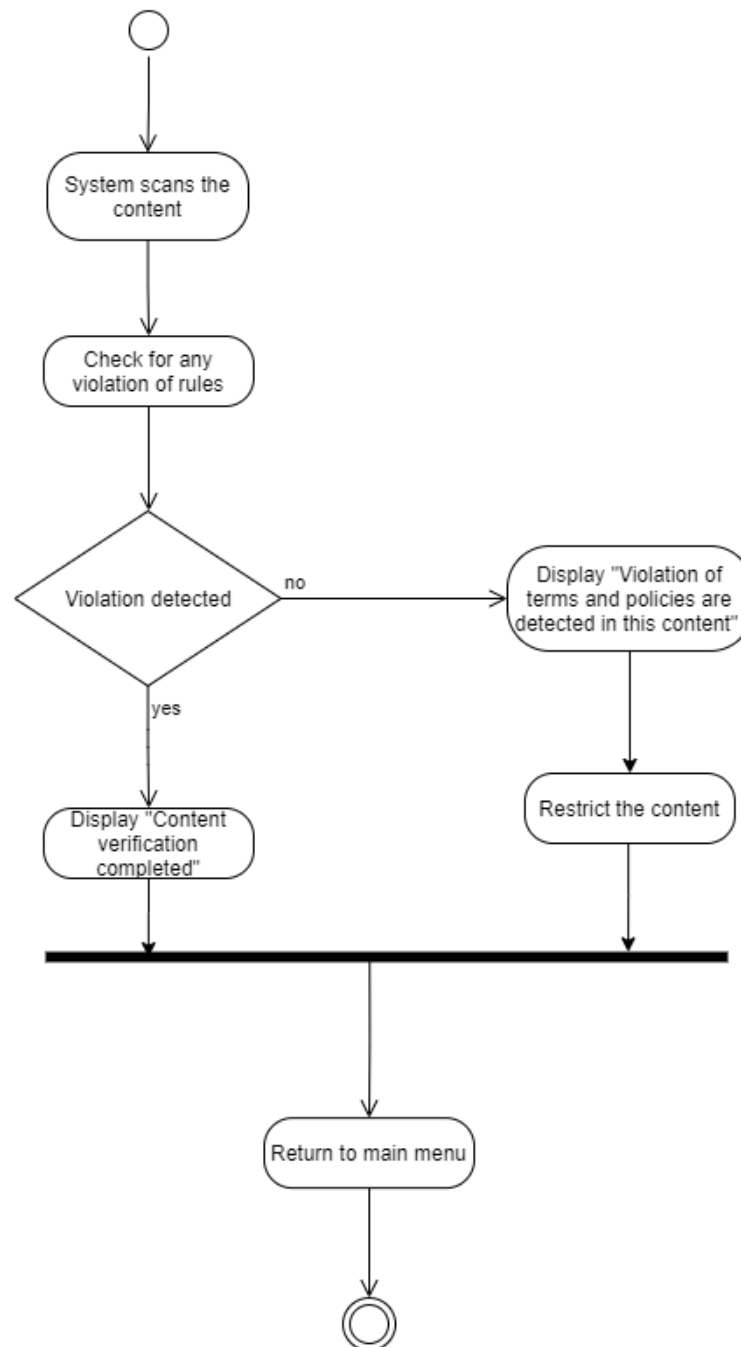


Figure 6 Activity diagram for Content Moderation

4.1.6 Video Recording

Figure 7 is the Activity Diagram of the Video Recording. It shows us the flow of application through user when he is recording a video.

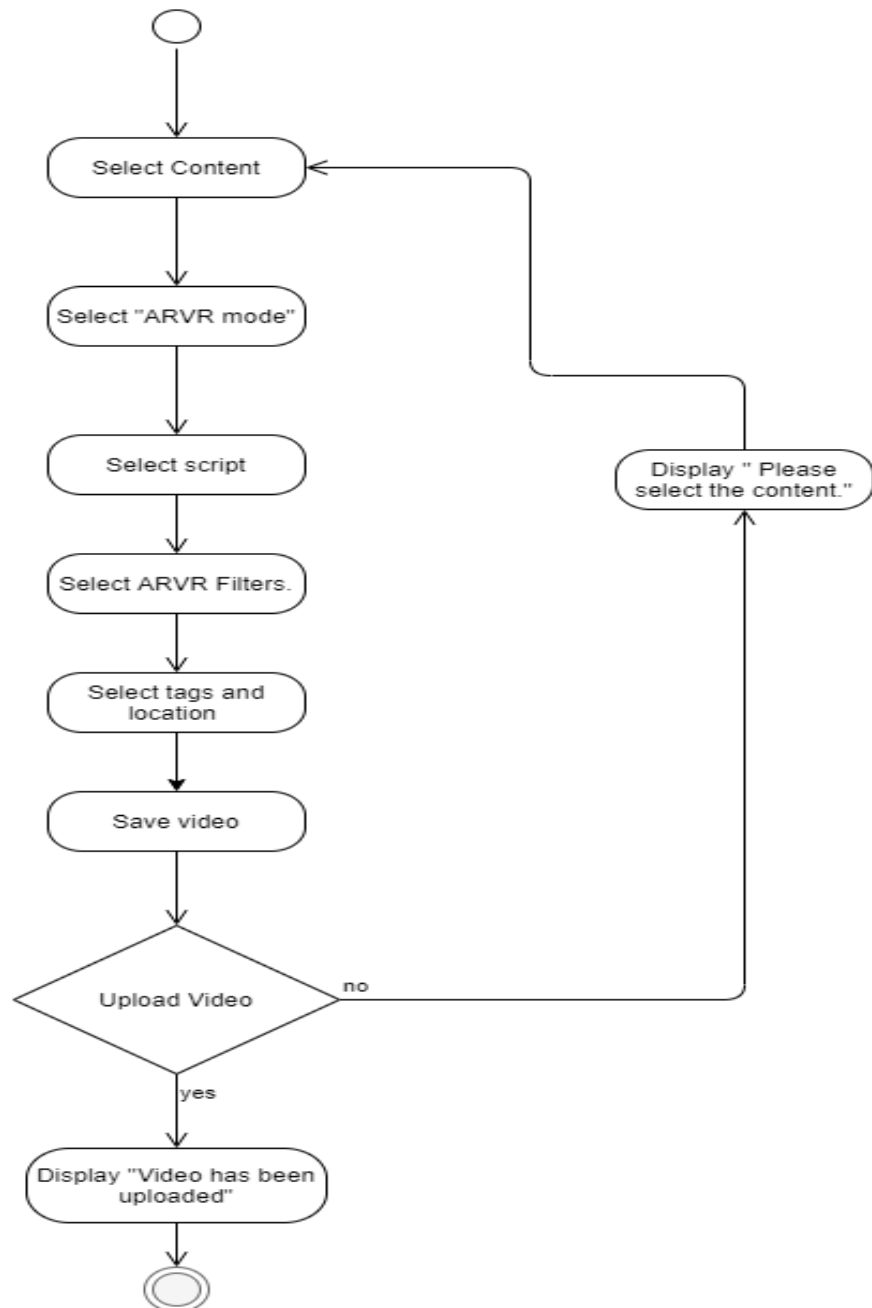


Figure 7 Activity diagram for Video Recording

4.1.7 Content Privacy

Figure 8 is the Activity Diagram of the content privacy. It shows us the actions user can take to protect the privacy of his content.

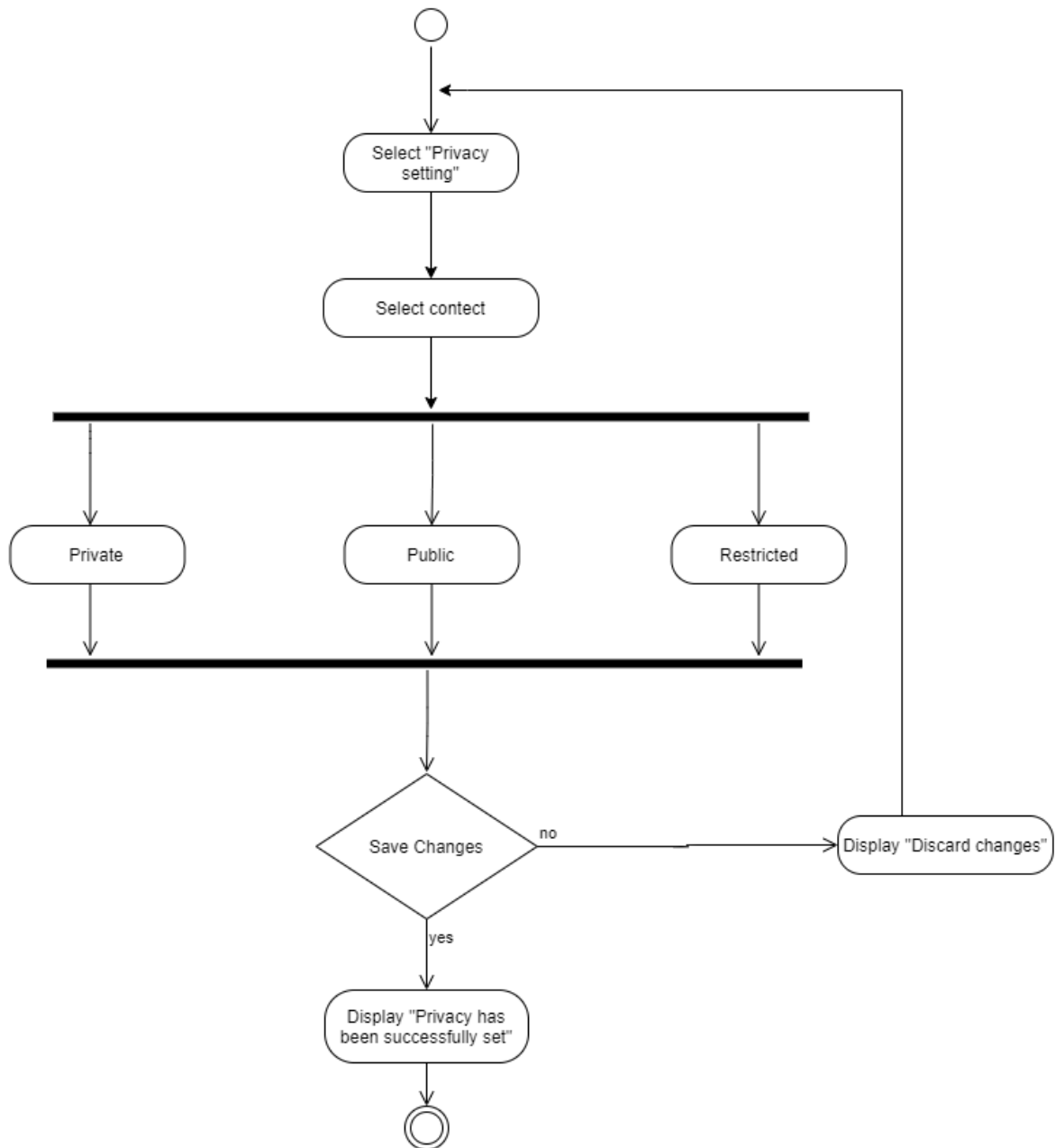


Figure 8 Activity diagram for Content Privacy

4.1.8 Enhance Content

Figure 9 is the Activity Diagram of the content enhancement. It shows us the flow of application through user, how he can enhance his recorded content by applying different features available in our application.

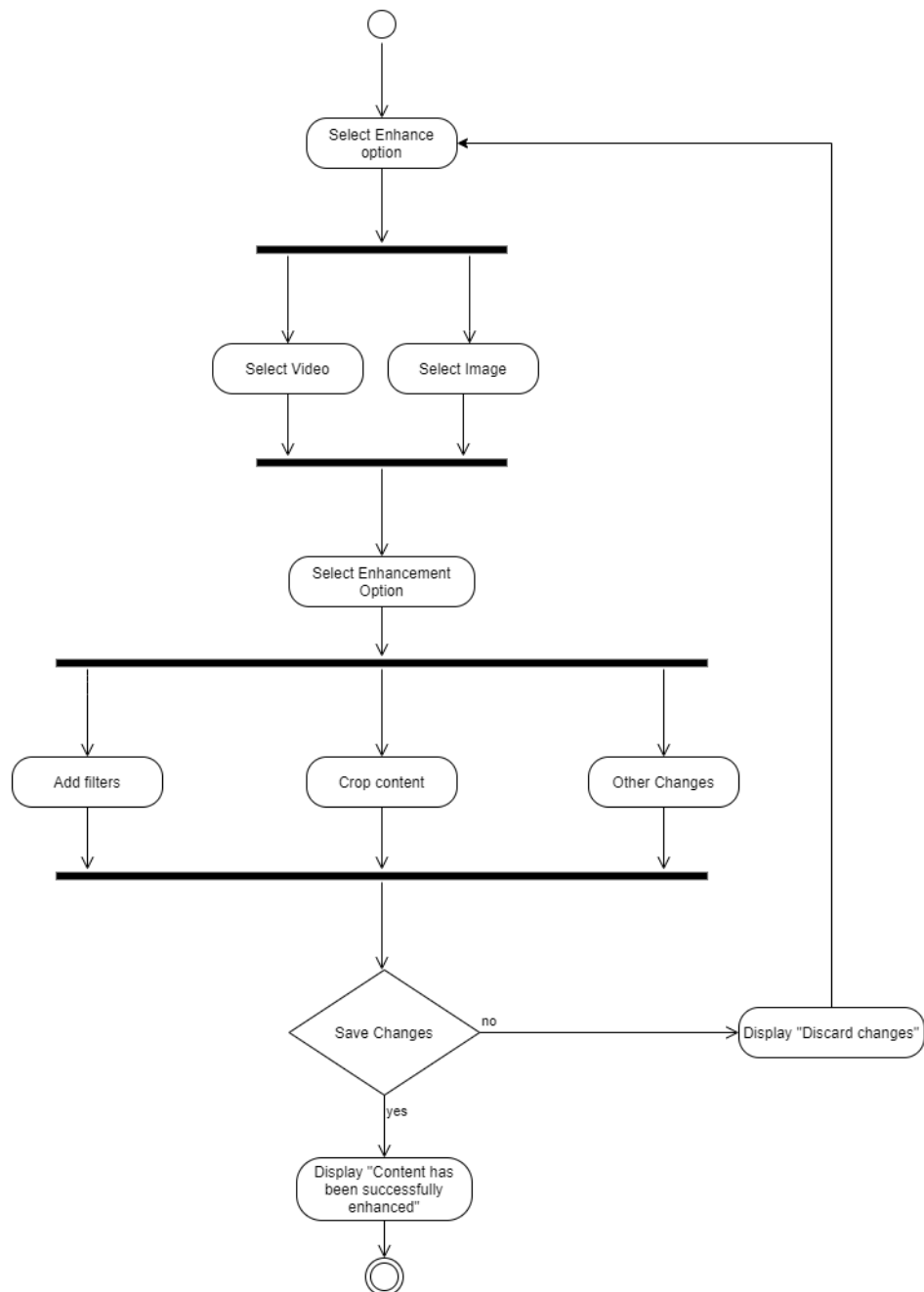


Figure 9 Activity diagram for Enhance Content

4.1.9 Job Posting

Figure 10 is the Activity Diagram of the Job posting. It shows us how News channels and other users can manage job posting process and provide their jobs to broader audience.

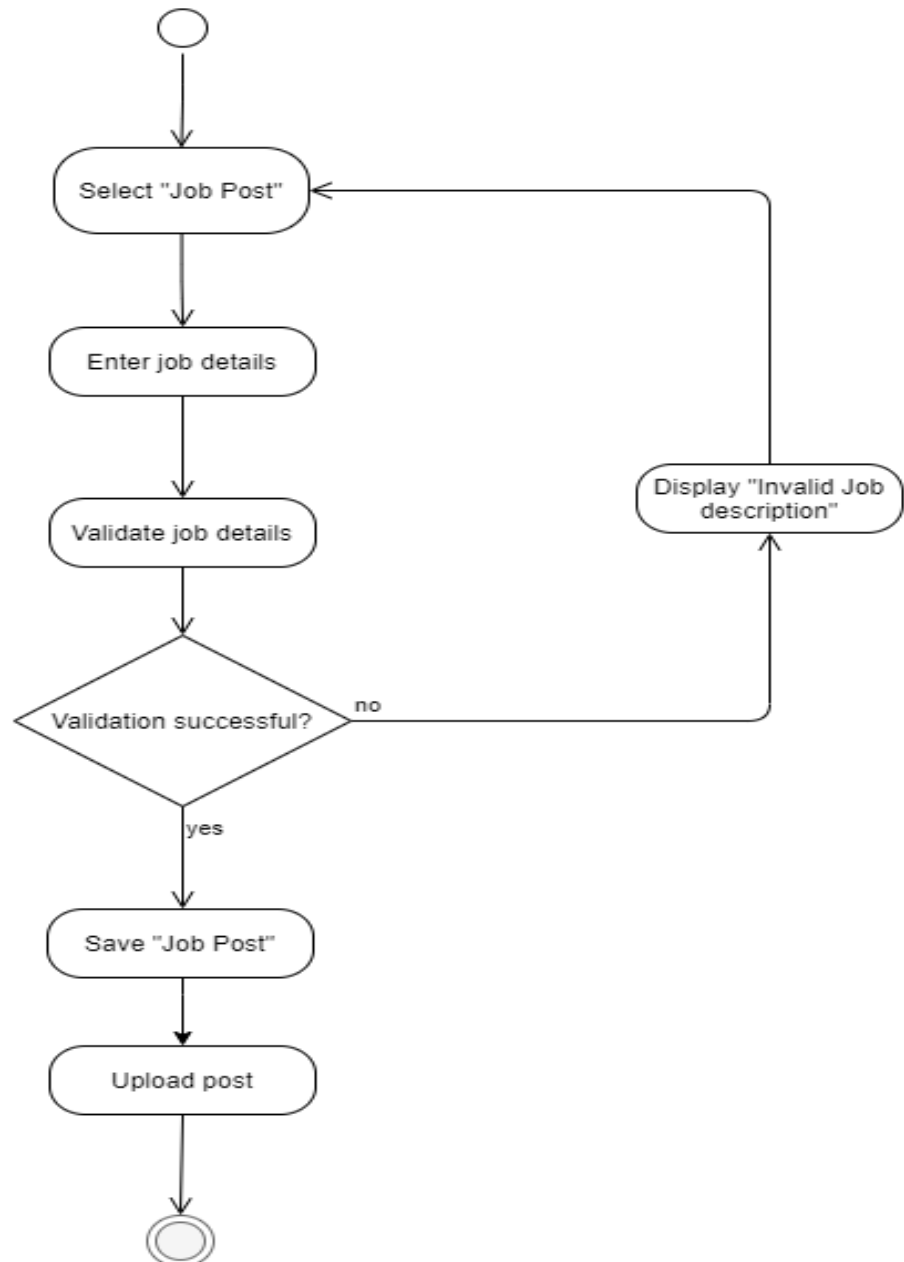


Figure 10 Activity diagram for Job Posting

4.1.10 Payment and Billing

Figure 11 is the Activity Diagram of the payment and billing. It shows us the steps the user can take while buying or selling of content.

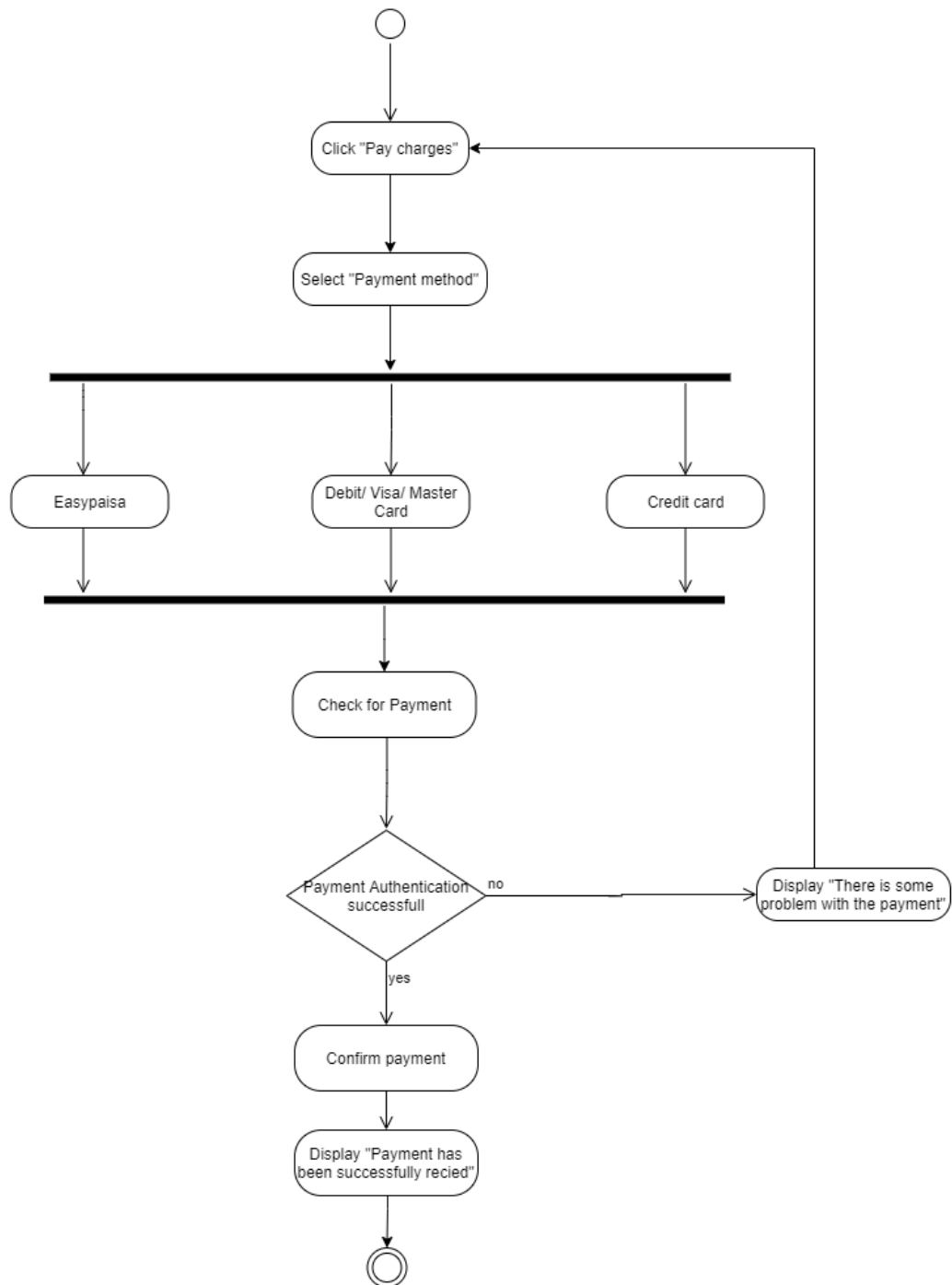


Figure 11 Activity diagram for Payment and Billing

4.2 Class Diagram

Below is the Class Diagram of News Wave.

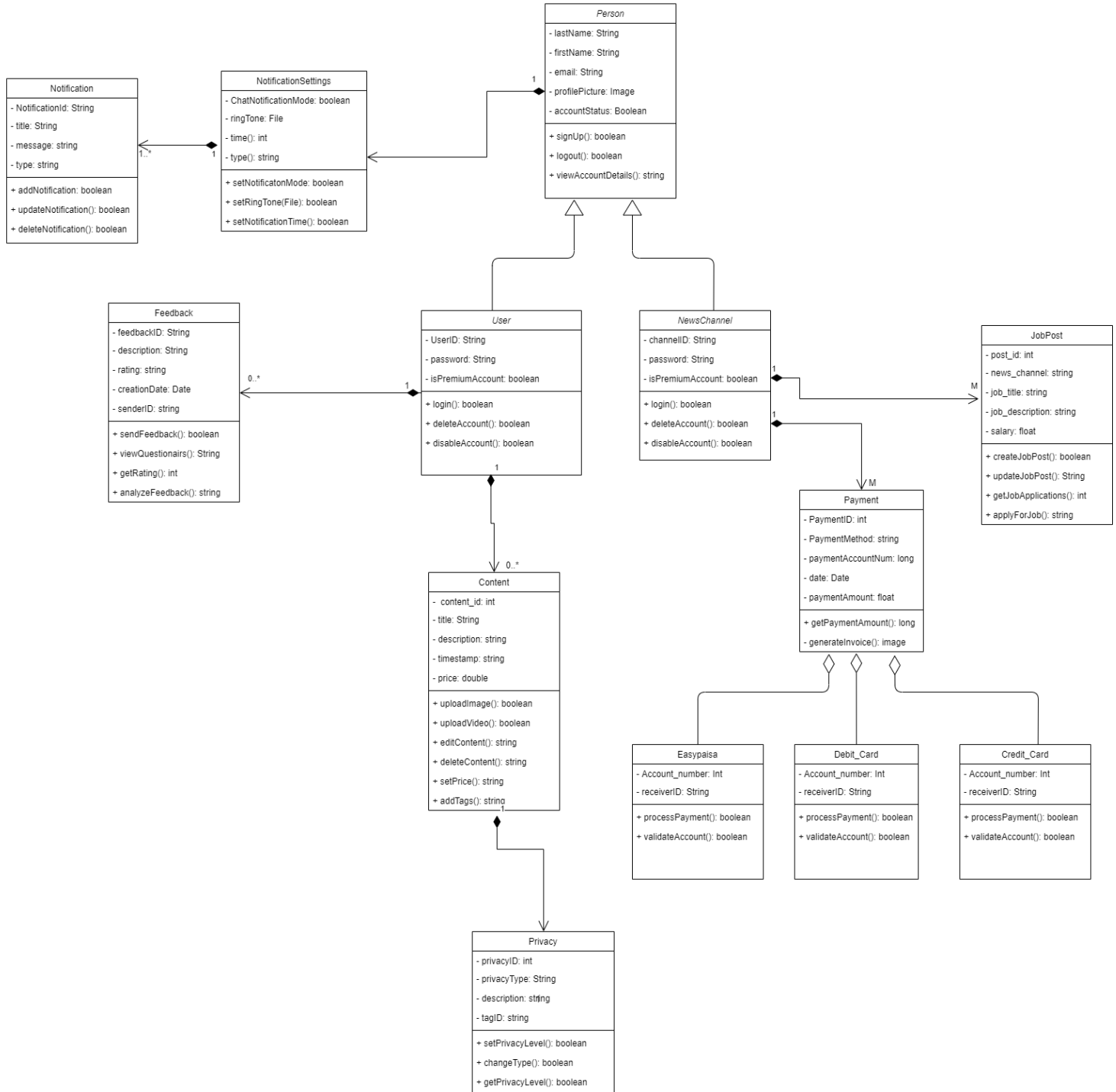


Figure 12 Class diagram for News Wave

4.3 Sequence Diagram

Following are the Sequence diagrams of News Wave.

4.3.1 User Sign Up

Figure 13 is the Sequence Diagram of User Sign Up.

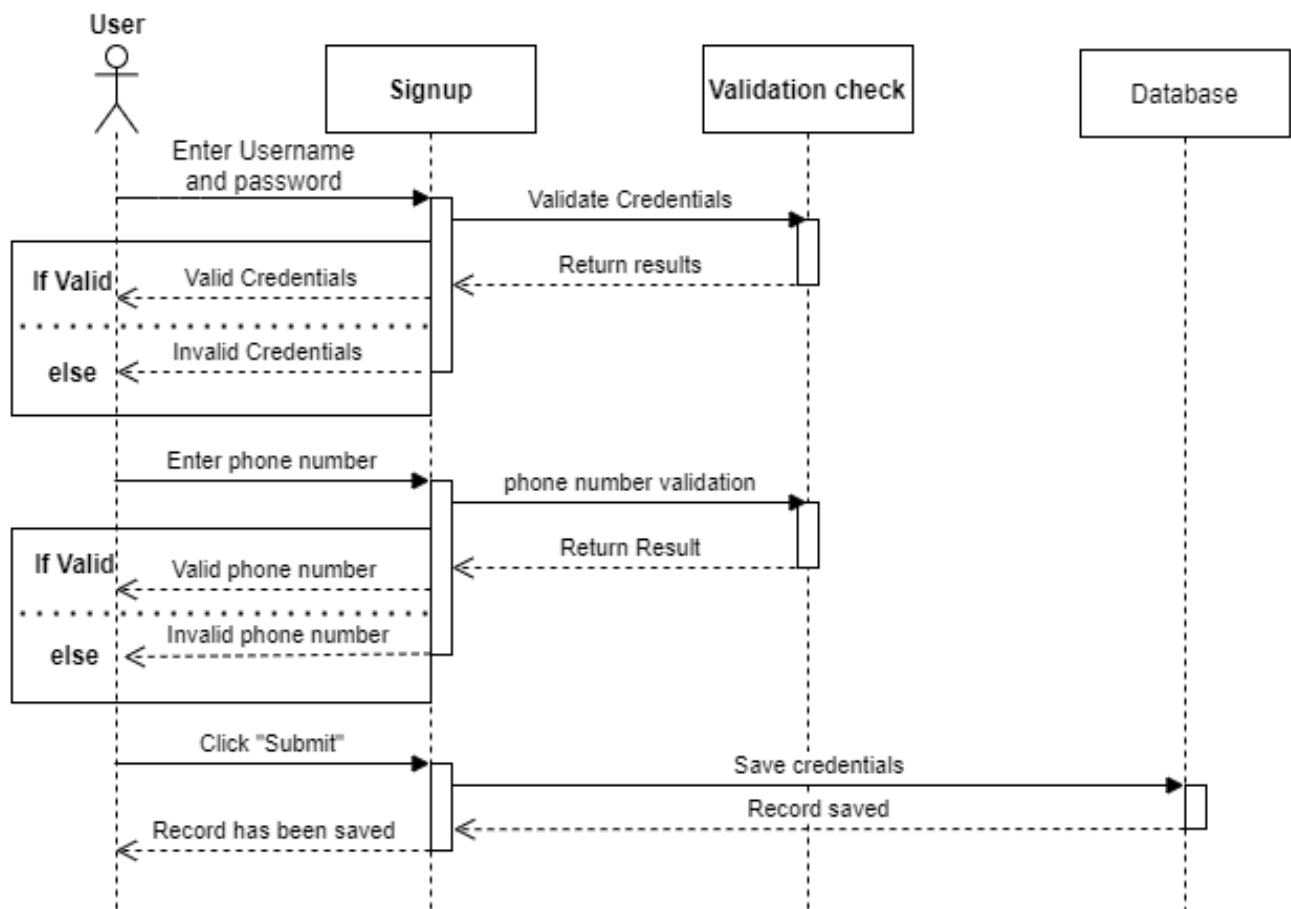


Figure 13 Sequence diagram for User Sign up

4.3.2 User Login

Figure 14 is the Sequence Diagram of User Login.

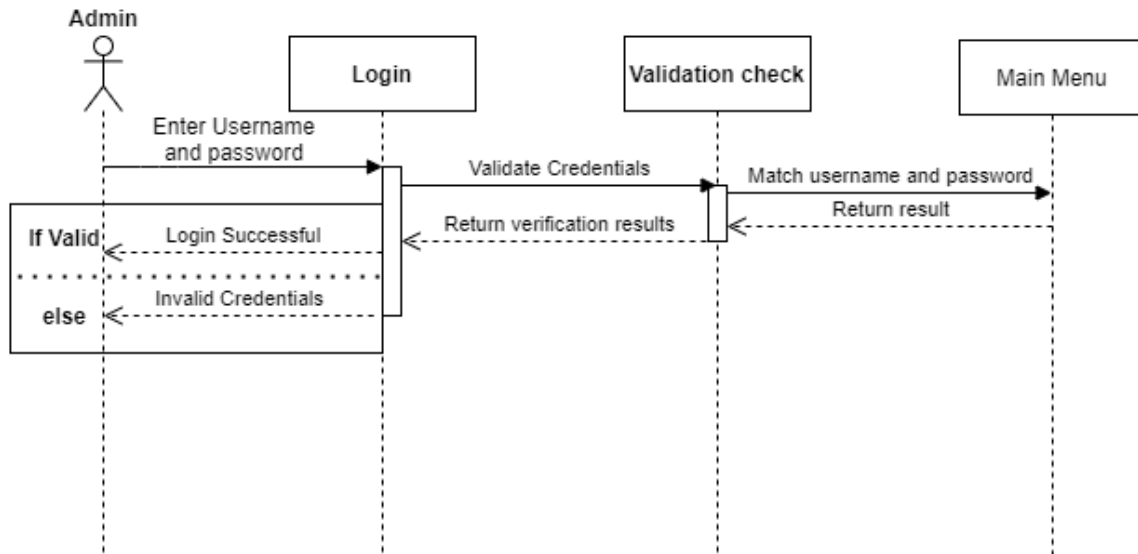


Figure 14 Sequence diagram for User Sign up

4.3.3 Update Content

Figure 15 is the Sequence Diagram of Upload Content.

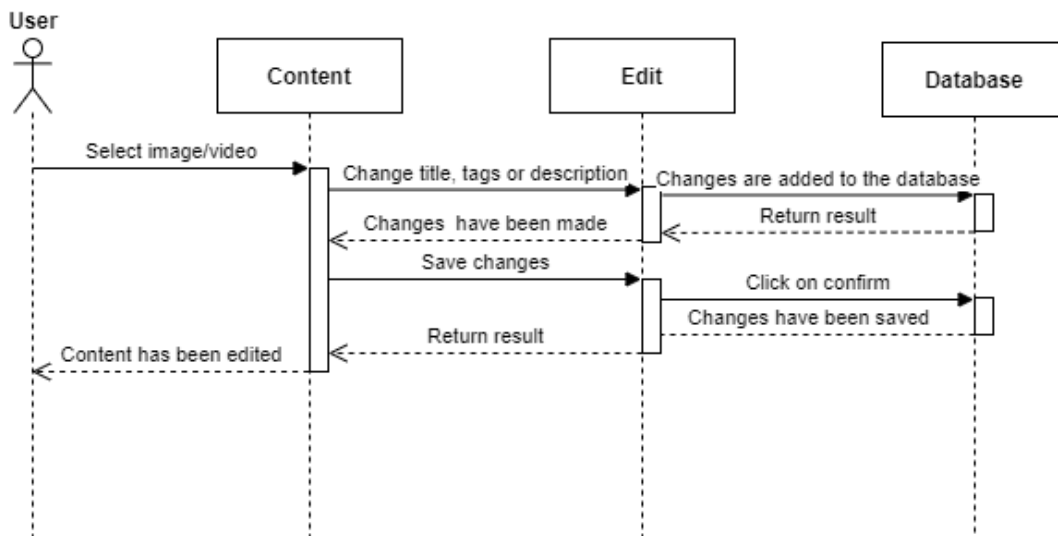


Figure 15 Sequence diagram for User Sign up

4.3.4 Upload Content

Figure 16 is the Sequence Diagram of Upload Content.

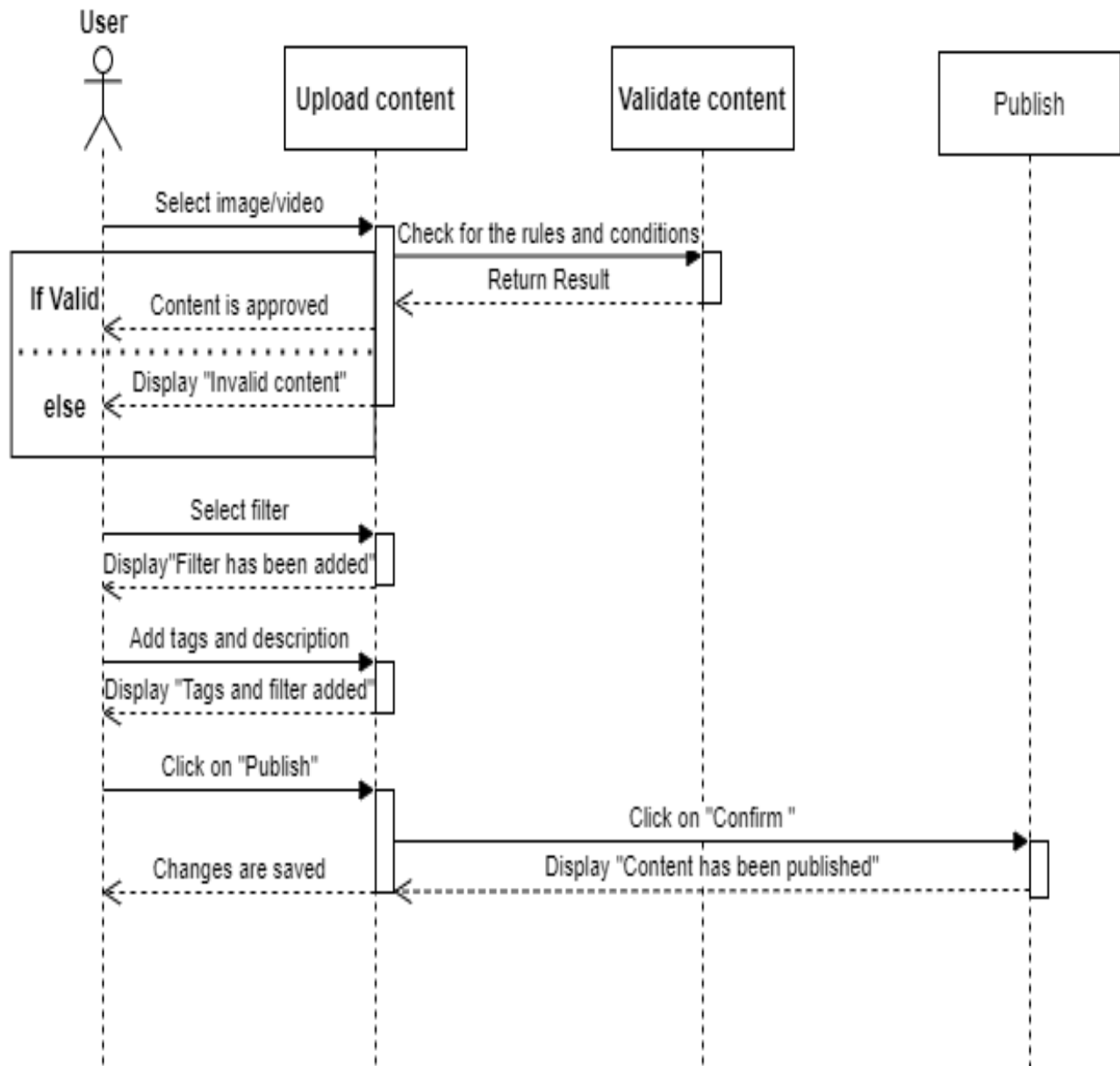


Figure 16 Sequence diagram for Upload Content

4.3.5 Video Recording

Figure 17 is the Sequence Diagram of Video Recording.

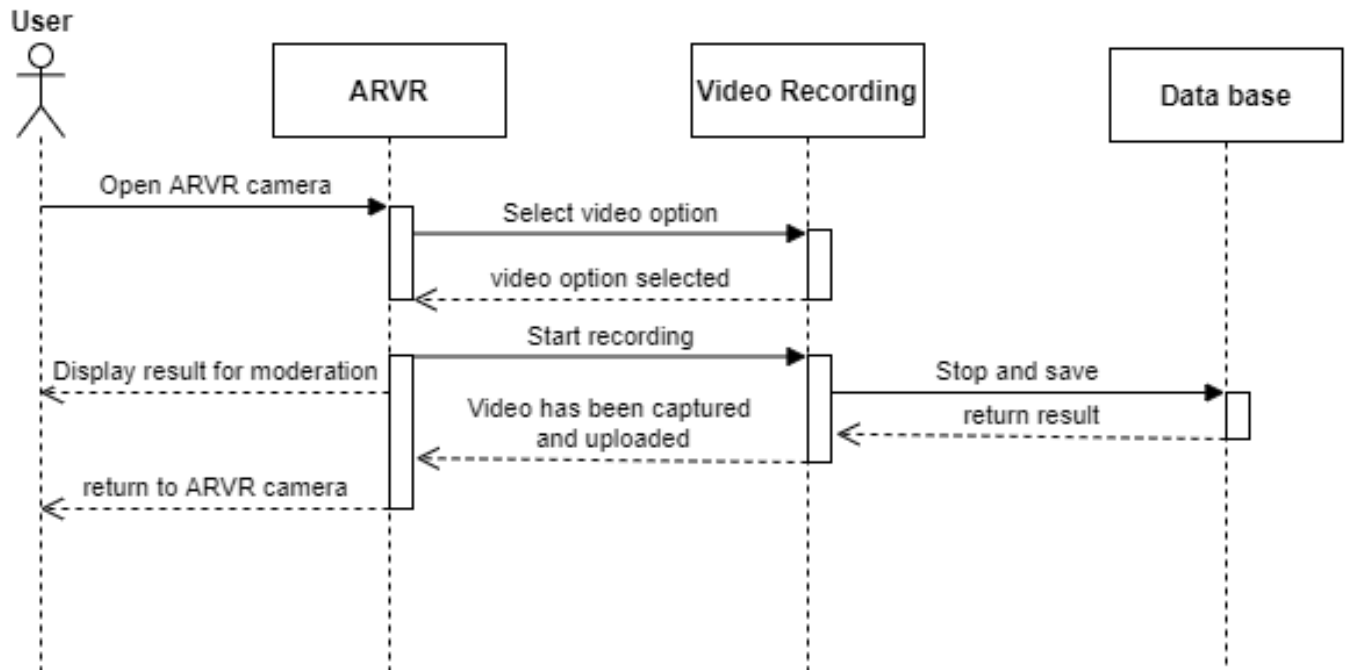


Figure 17 Sequence diagram for Video Recording

4.3.6 Content Moderation

Figure 18 is the Sequence Diagram of content moderation.

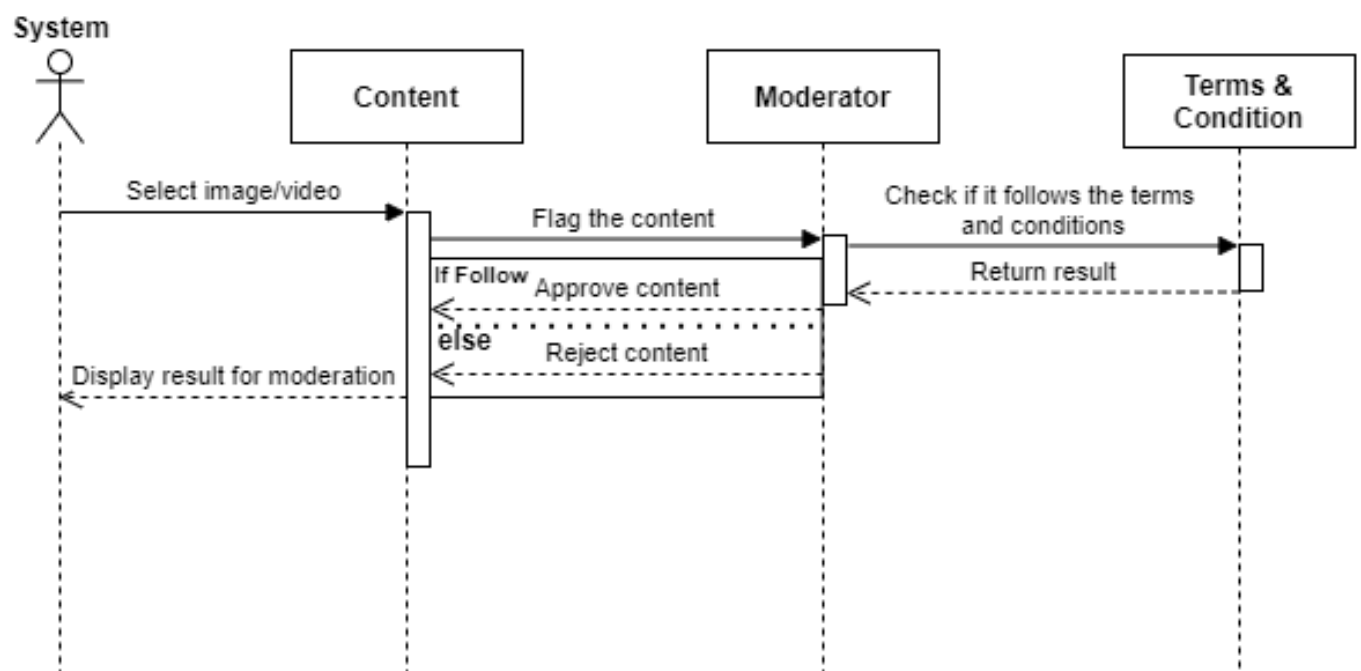


Figure 18 Sequence diagram for Content Moderation

4.3.7 Job Posting

Figure 19 is the Sequence Diagram of Job Posting.

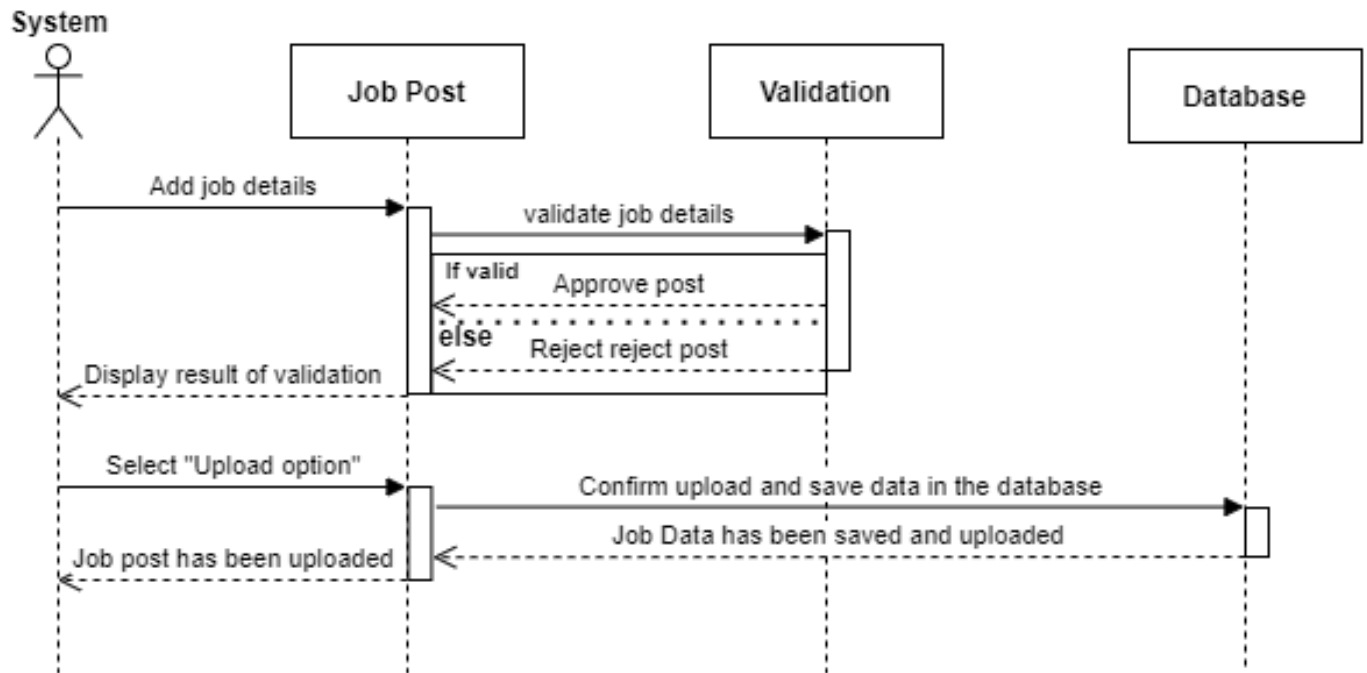


Figure 19 Sequence diagram for Job Posting

4.3.8 Privacy Settings

Figure 20 is the Sequence Diagram of Privacy Settings.

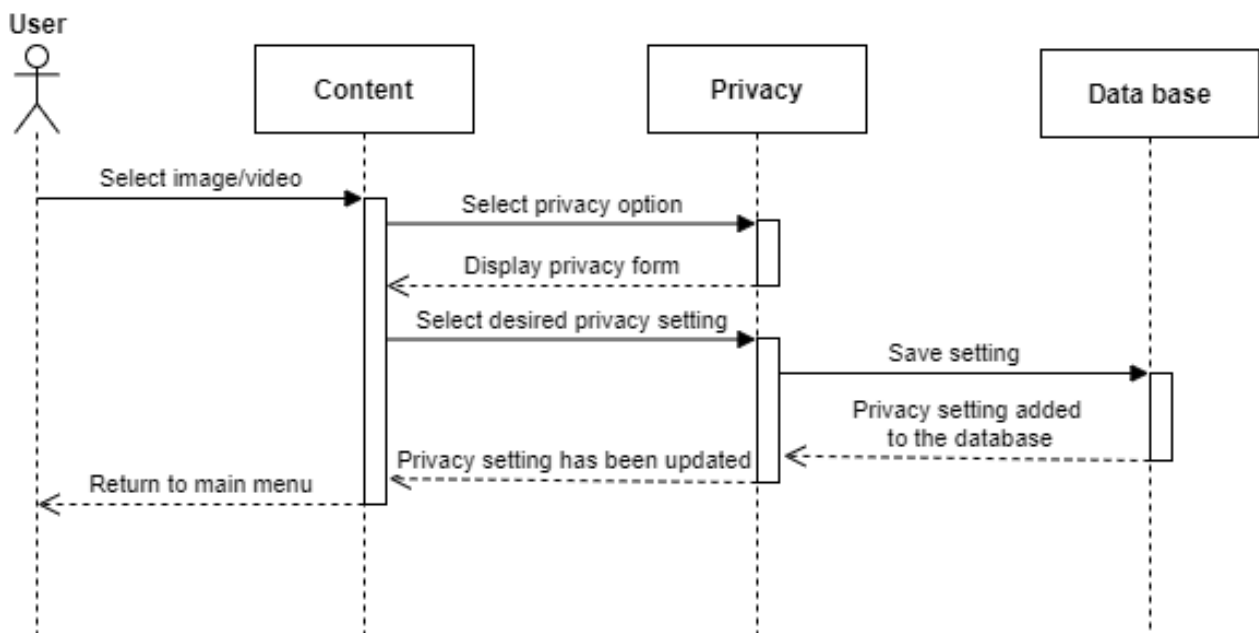


Figure 20 Sequence diagram for Privacy Settings

5. Data Design

Data Design for News Wave is given below.

5.1 Date Dictionary

Table 1 shows the data Dictionary of News Wave

Table 1 Details of Date Dictionary

Type	Member	Data Type	Function
User	Username	String	Name of User
	userId	String	Id of User
	userEmail	String	Email of User
	userPassword	String	Password for authentication
	userPhoneNumber	String	Phone number of user
	Buyer	Boolean	User Buyer or not
	Fcm	String	User's fcm
	User'sPicture	Buffer	User Profile Picture
News Channel	NewsChannel Name	String	Name of NewsChannel
	NewschannelId	Number	Id of NewsChannel
	NewsChannelEmail	String	Email of NewsChannel
	NewsChannelPassowrd	String	Password for authentication
	NewsChannelPhone Number	String	Phone number of NewsChannel
Video	Likes	String	Likes on Content
	Owner	mongoose.Types.ObjectId (Ref: User)	Owner of Content
	Path	Buffer	Path of Content
	Thumbnail	Number	Thumbnail of Content
	Bought	String	Content Bought
	Created_on	String	Created on

	Description	String	Description of Content
Hiring	User	mongoose.Types.ObjectId (Ref: User)	Id of the User
	Hirer	mongoose.Types.ObjectId (Ref: User)	ID of the hirer
	Start date	String	Start date of job
	End date	Number	End date of job
	DateCreated	String	Date the job was created
Notification	User	mongoose.Types.ObjectId (Ref: User)	Id of the User
	Message	String	Message to the user
	Read	Boolean	Read true or not
	Time	String	Time of notification
	Notification Id	String	Id of the Notification
	Notification descp	String	Description Notification
	NotificationImp	String	Importance Level
Payment Method	userId	mongoose.Types.ObjectId (Ref: User)	Id of the user
	Cardtitle	String	Title of the card
	Card expirydate	String	Expiry date of the Card
	Card number	String	Number of the card
OTP	OTP Id	Number	Id of the OTP
	Token	Number	Token of the otp
	Email	Number	Email to which OT P will sent
	Time	Number	Time
	Date	String	Date
Payment	PaymentId	mongoose.Types.ObjectId (Ref: User)	Id of the User
	Price	String	Price of the Content

Review	userId	mongoose.Types.ObjectId (Ref: User)	Id of the user
	Review	String	Review written by the user
	reviewId	mongoose.Types.ObjectId (Ref: Video)	Video the user reviewed
Feedback	userId	mongoose.Types.ObjectId (Ref: User)	Id of the user
	Feedback	String	Feedback the user given
Category	CatId	Number	Category id
	CatName	String	Name of the Category
Message	MessageId	Number	Message Id
	UserId	mongoose.Types.ObjectId (Ref: User)	Id of the User
	Sent to	mongoose.Types.ObjectId (Ref: User)	Id of the User
Bought&SoldContent	BoughtCount	Number	Amount of Bought Content
	userId	mongoose.Types.ObjectId (Ref: User)	Id of the user who posted the Content
	SoldCount	Number	Amount of Sold Content

5.2 Schema

Schemas used in News Wave are shown below.

5.2.1 User Schema

Below is the user Schema of News Wave

```
var mongoose = require('mongoose');
var passportLocalMongoose = require('passport-local-mongoose');
var Schema = mongoose.Schema;

var User = new Schema({
  username: {
    type: String,
    default: '',
  },
  email: {
```

```
      type: String,
      default: '',
    },
    buyer: {
      type: Boolean,
      default: false,
    },
    fcm: {
      type: String,
      default: '',
    },
    picture: { type: String, default: null },
  });
User.plugin(passportLocalMongoose);

module.exports = mongoose.model('User', User);
```

5.2.2 Video Schema

Below is the Video Schema of our system

```
var mongoose = require('mongoose');
var Schema = mongoose.Schema;

var Video = new Schema({
  likes: {
    type: Number,
    default: 0,
  },
  owner: {
    type: mongoose.Types.ObjectId,
    ref: 'User',
  },
  path: {
    type: String,
    default: '',
  },
  thumbnail: {
    type: String,
    default: '',
  },
});
```

```
    },
    bought: {
      type: Boolean,
      default: false,
    },
    created_on: {
      type: Date,
      default: Date.now(),
    },
    description: {
      type: String,
      default: '',
    },
    tags: [String],
  });

module.exports = mongoose.model('Video', Video);
```

5.2.3 Hiring Schema

Below is the Hiring Schema of our system

```
var Hiring = new Schema(
  {
    user: {
      type: mongoose.Types.ObjectId,
      ref: 'User',
    },
    start_date: {
      type: Date,
      default: Date.now(),
    },
    end_date: {
      type: Date,
      default: null,
    },
    hirer: {
      type: mongoose.Types.ObjectId,
      ref: 'User',
    },
  },
```

```
    },
    { timestamps: true }
  );

module.exports = mongoose.model('Hiring', Hiring);
```

5.2.4 Notification Schema

Below is the Notification Schema of our system

```
var mongoose = require('mongoose');
var Schema = mongoose.Schema;

var NotificationCustomer = new Schema(
  {
    user: {
      type: mongoose.Types.ObjectId,
      ref: 'User',
    },
    message: {
      type: 'String',
    },
    read: {
      type: Boolean,
      default: false,
    },
  },
  { timestamps: true }
);

module.exports = mongoose.model('NotificationCustomer',
NotificationCustomer);
```

5.2.5 Payment method Schema

Below is the payment method schema of our system

```
var mongoose = require('mongoose');
var Schema = mongoose.Schema;

var Payment_Method = new Schema({
```



```
    card_title: {
      type: 'String',
    },
    card_number: { type: Number },
    cvc: { type: Number },
    expiry_date: {
      type: 'String',
    },
    user: {
      type: mongoose.Types.ObjectId,
      ref: 'User',
    },
  });

module.exports = mongoose.model('Payment_Method', Payment_Method);
```

5.2.6 OTP Schema

Below is the OTP schema of News Wave

```
var mongoose = require('mongoose');
var Schema = mongoose.Schema;

var Otp = new Schema(
  {
    token: { type: String },
    email: { type: String, default: '' },
  },
  { timestamps: true }
);

Otp.index({ createdAt: 1 }, { expireAfterSeconds: 3600 });
module.exports = mongoose.model('Otp', Otp);
```

6. Human Interface Design

The human interface designs for Mobile Application of News Wave are as follow.

6.1 Screen Images

The Screen Images of News Wave are as follow.

6.1.1 Splash Screen

Figure 21 shows the splash screen where the user lands first when the application starts.



Figure 21 Splash Screen

6.1.2 Home Screen

Figure 22 shows the Home screen which the opening screen of application and shows the posted content.

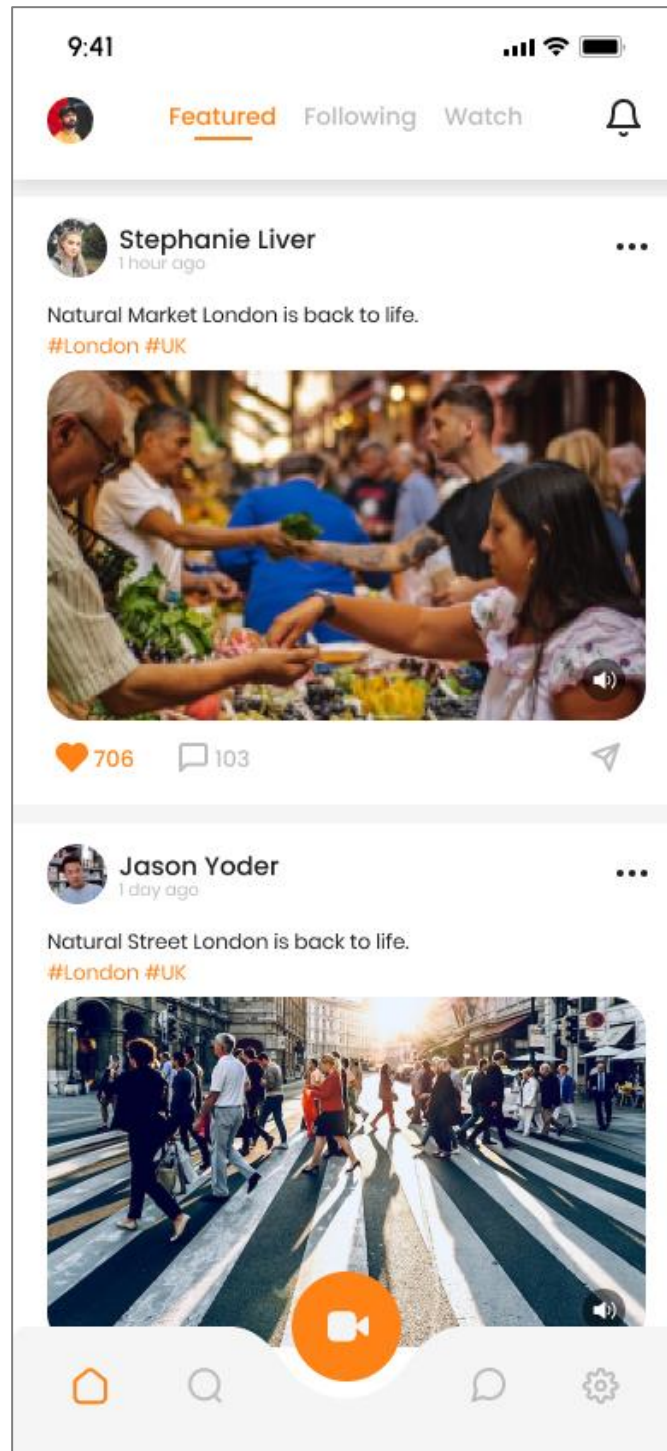


Figure 22 Home Screen

6.1.3 Search Screen

Figure 23 shows the Search screen where the user can Search for people and content posted around the world.

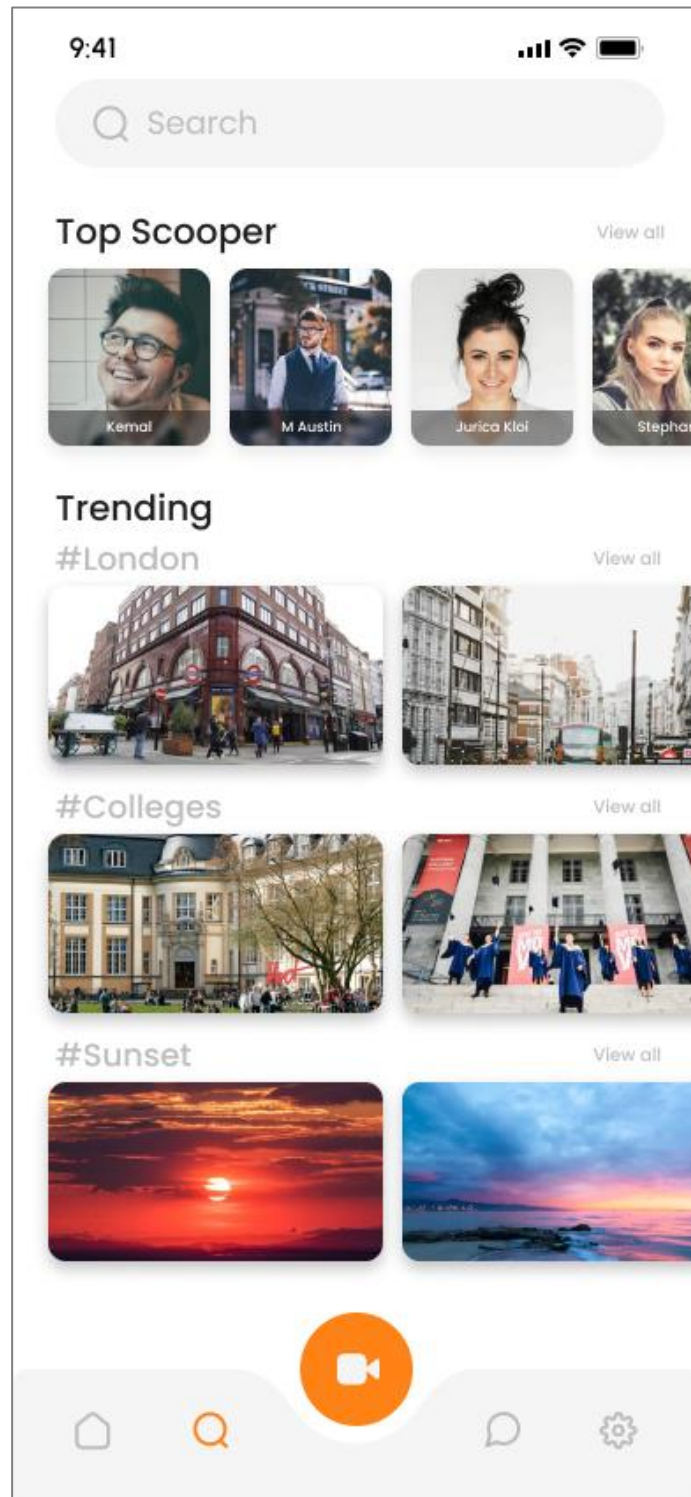


Figure 23 Search Screen

6.1.4 Profile Screen

Figure 24 shows the Profile screen where the user can see his posted content and the amount of following and followers they have.

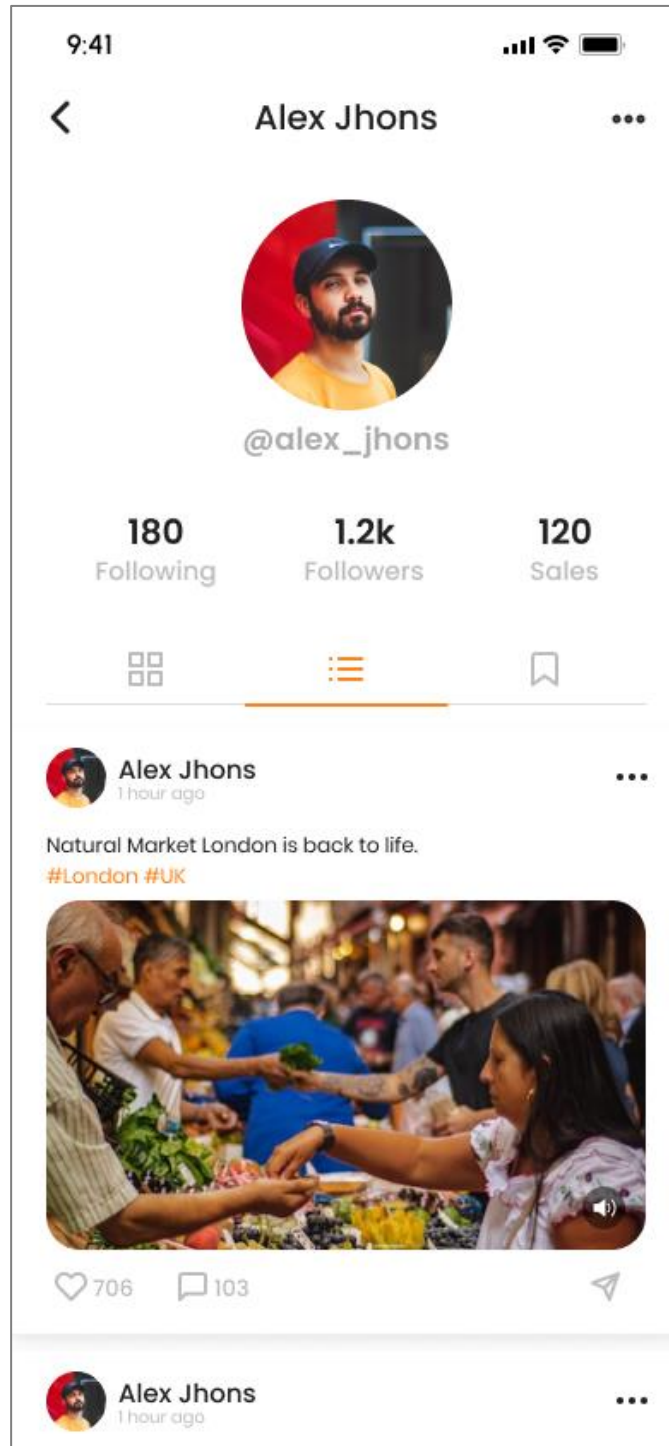


Figure 24 Profile Screen

6.1.5 Video Recording Screen

Figure 25 shows the video recording screen where the user can try on different features of teleprompter, filters and other stuff and record high quality videos.

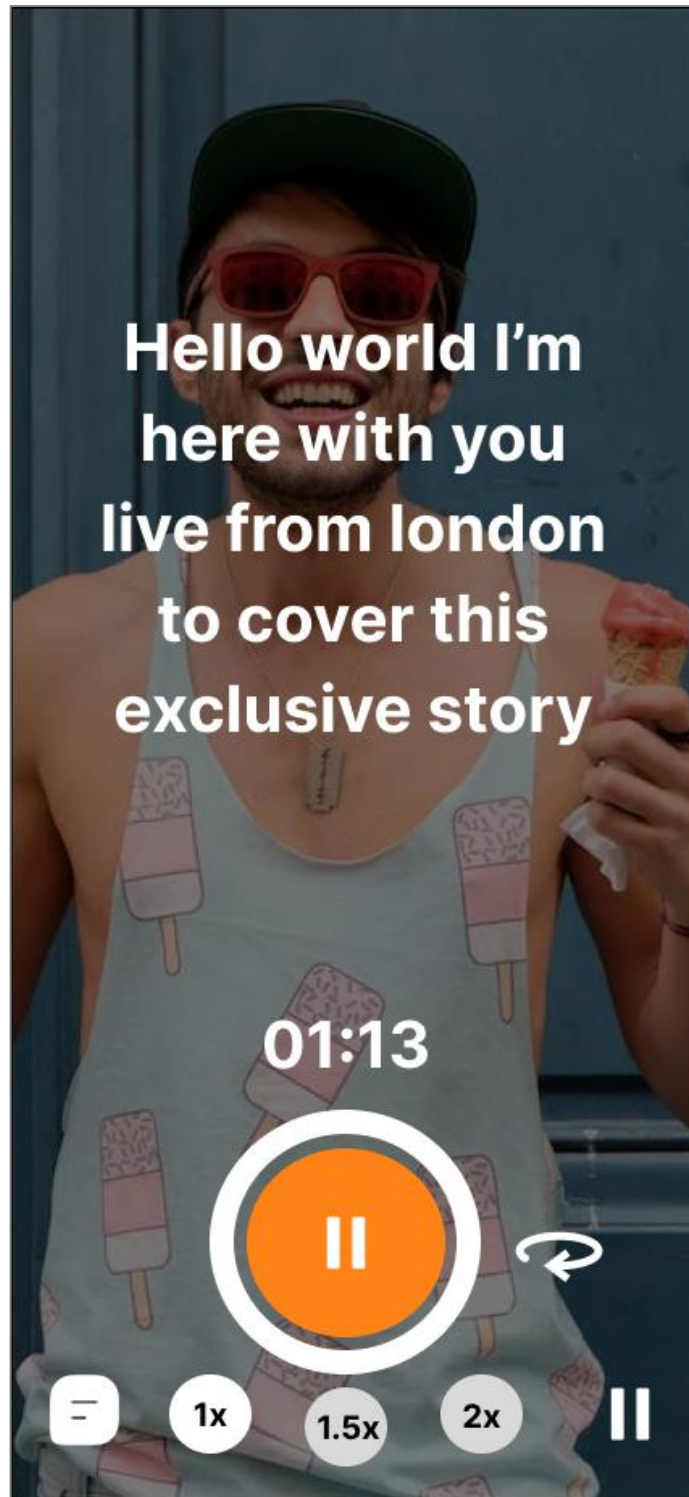
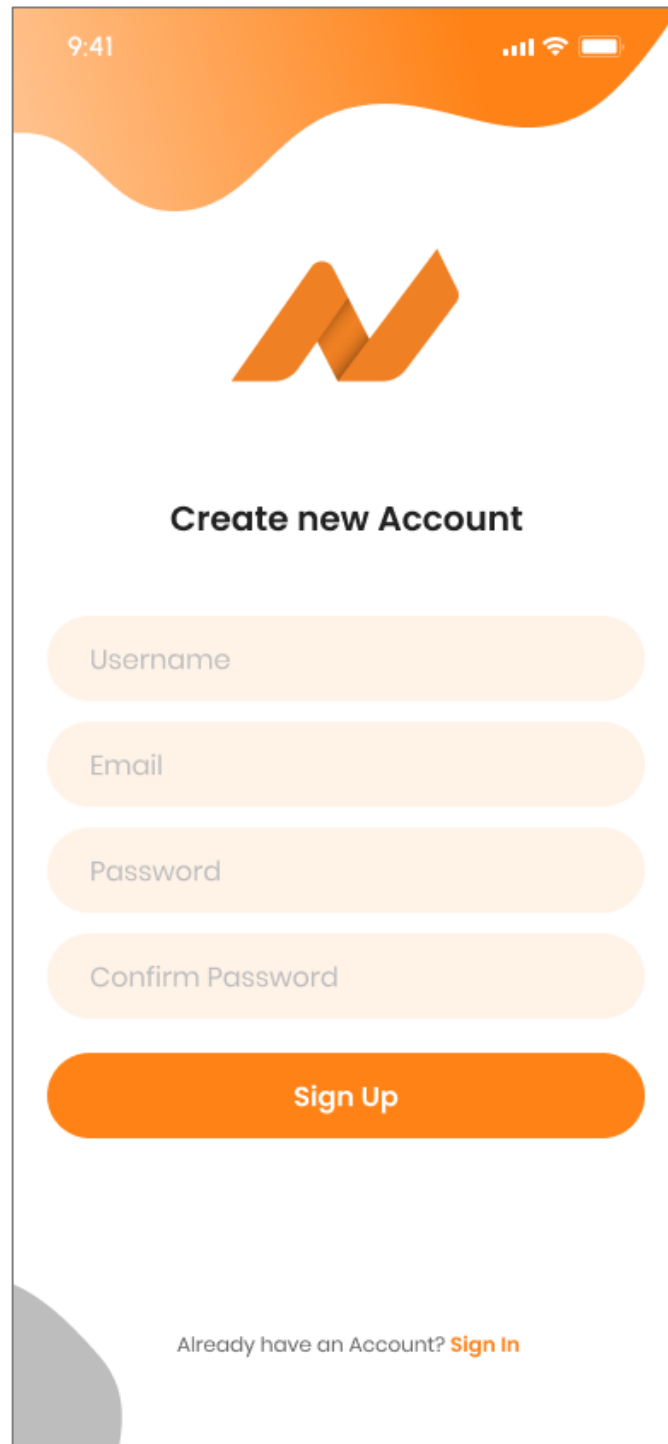


Figure 25 Video Recording Screen

6.1.6 Sign Up Screen

Figure 26 shows the Sign up screen where the user is able to give his credentials and sign up into their account.



The image is a mobile app mockup for a sign-up screen. At the top, there is an orange header bar with a wavy bottom edge. Inside the header, the time '9:41' is on the left, and signal, Wi-Fi, and battery icons are on the right. Below the header is a large orange stylized 'W' logo. Under the logo, the text 'Create new Account' is centered in bold. Below this are four rounded rectangular input fields, each with a light orange background and a light gray border. The labels 'Username', 'Email', 'Password', and 'Confirm Password' are in light gray text inside the fields. Below the input fields is a large orange rounded rectangular button with the text 'Sign Up' in white. At the bottom of the screen, there is a link that says 'Already have an Account? Sign In', where 'Sign In' is in orange and the rest is in gray. The bottom-left corner of the screen has a gray curved shape.

Figure 26 Sign Up Screen

6.1.7 Login Screen

Figure 27 shows the Login Screen where the user give email password and login to their account.

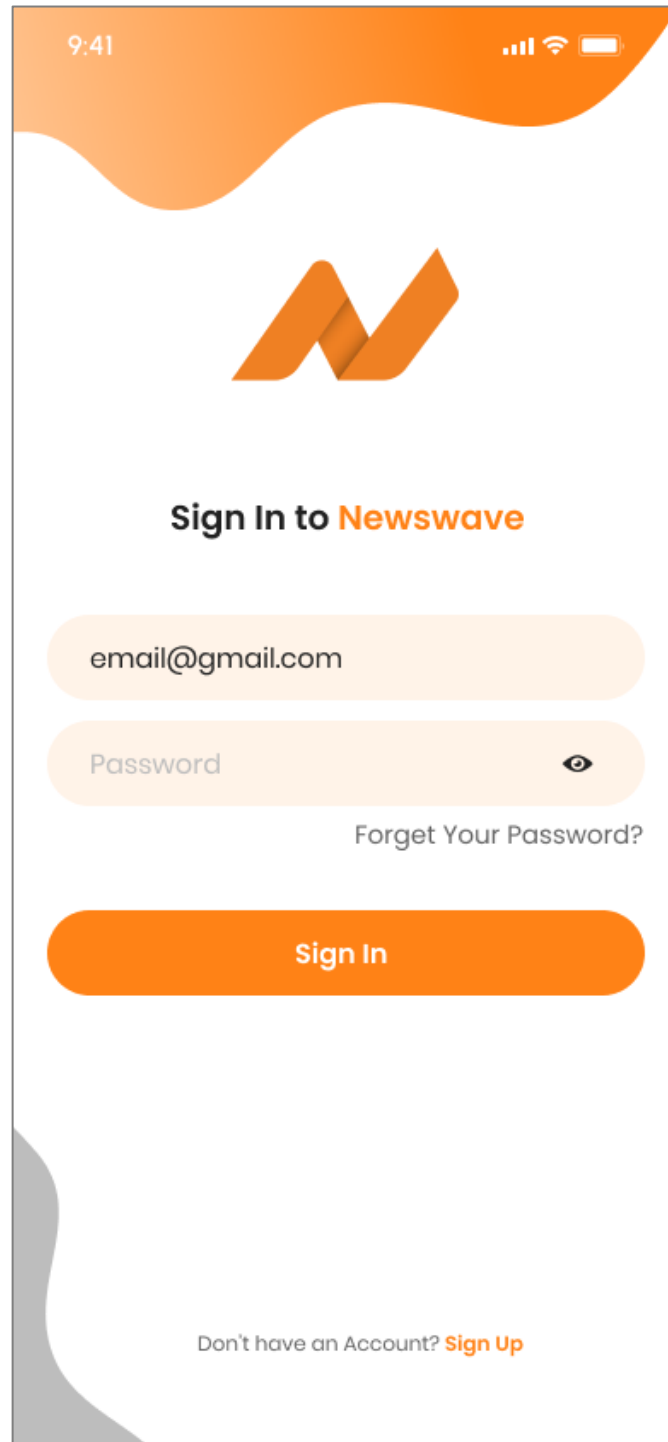


Figure 27 Login Screen

6.1.8 Upload Content Screen

Figure 28 shows the Upload Content screen where the user gives description about his Content price, privacy etc.

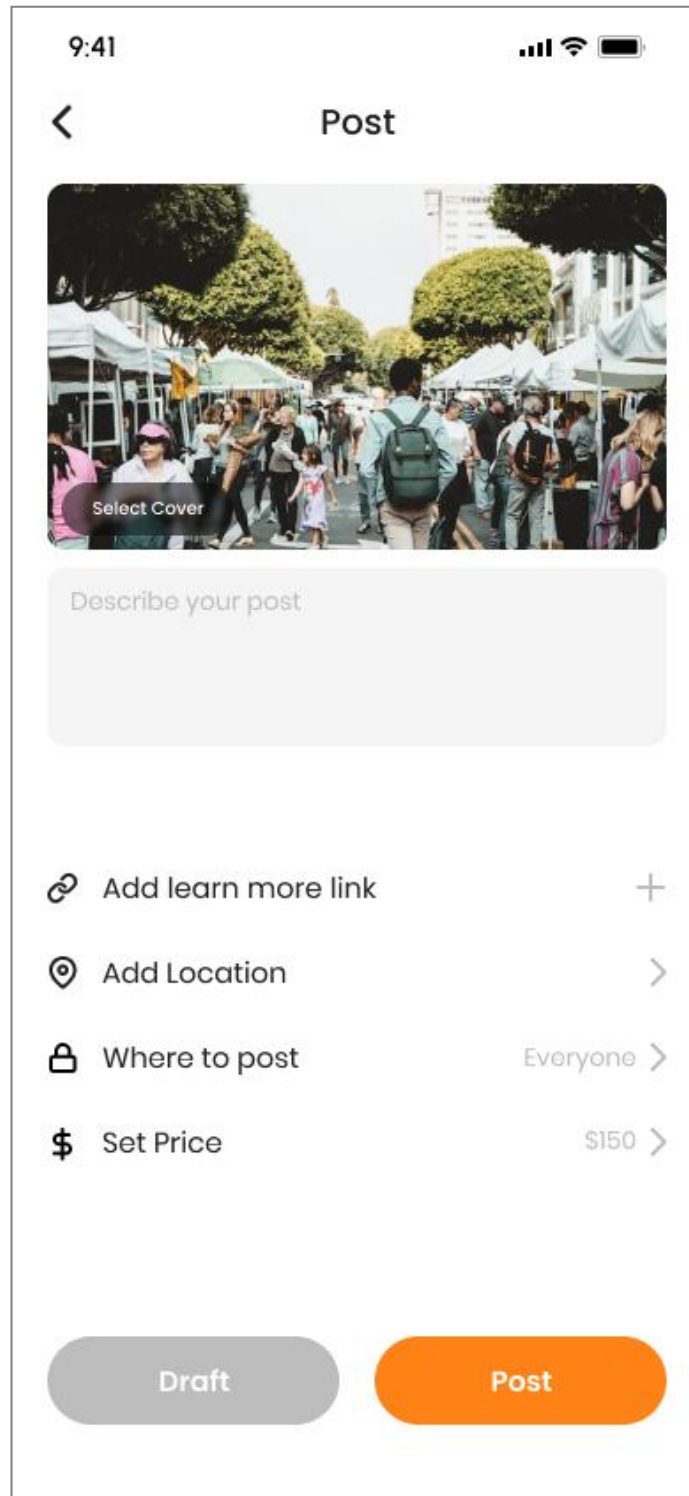


Figure 28 Upload Content Screen

6.1.9 Content Filter Screen

Figure 29 shows the Content Filter screen where the Application runs the content through Machine Learning Algorithm to look for any misinformation.

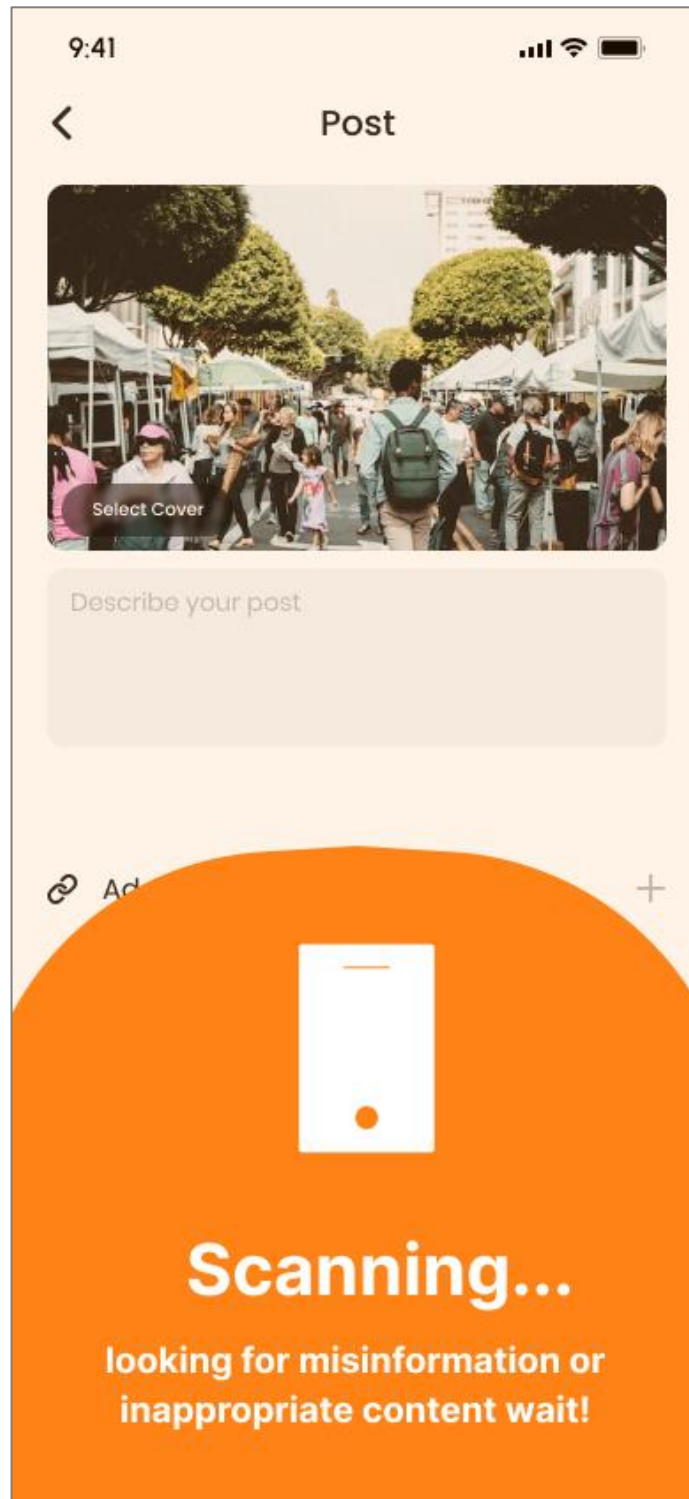


Figure 29 Filter Content Screen

6.1.10 Map Screen

Figure 30 shows the Map screen where the user is able to see other user sharing stories around him.

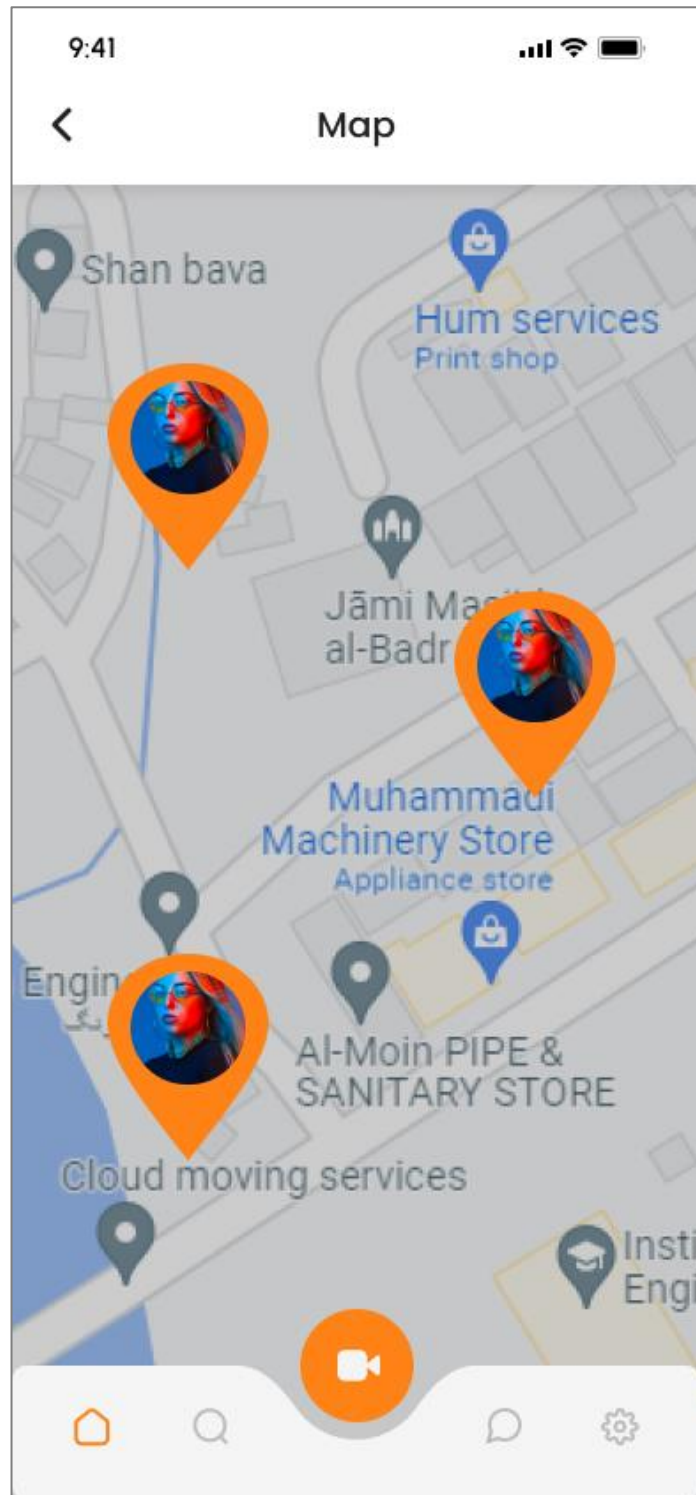


Figure 30 Map Screen

6.1.11 Notification Screen

Figure 31 shows the Notification Screen where the User gets notifications.

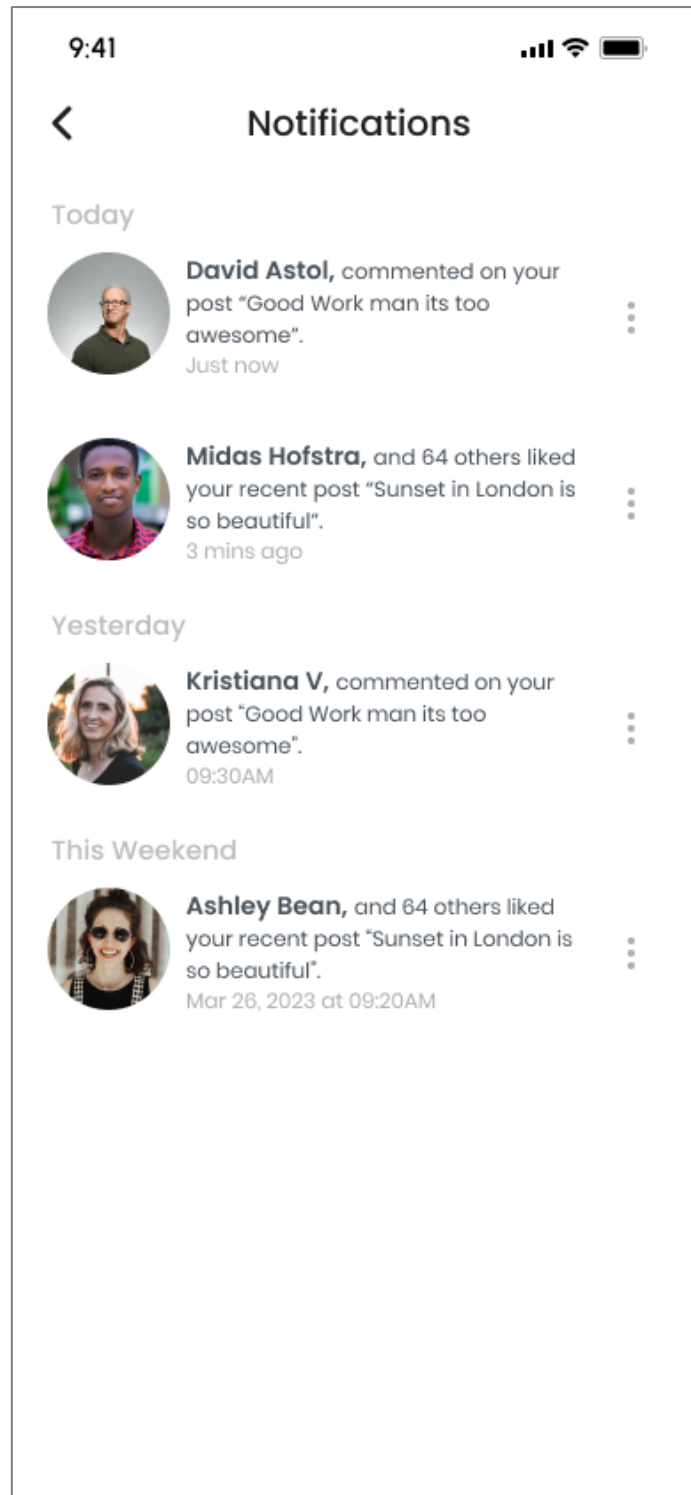


Figure 31 Notification Screen

6.1.12 Chat Screen

Figure 32 shows the Chat screen where the user can write messages to other users.

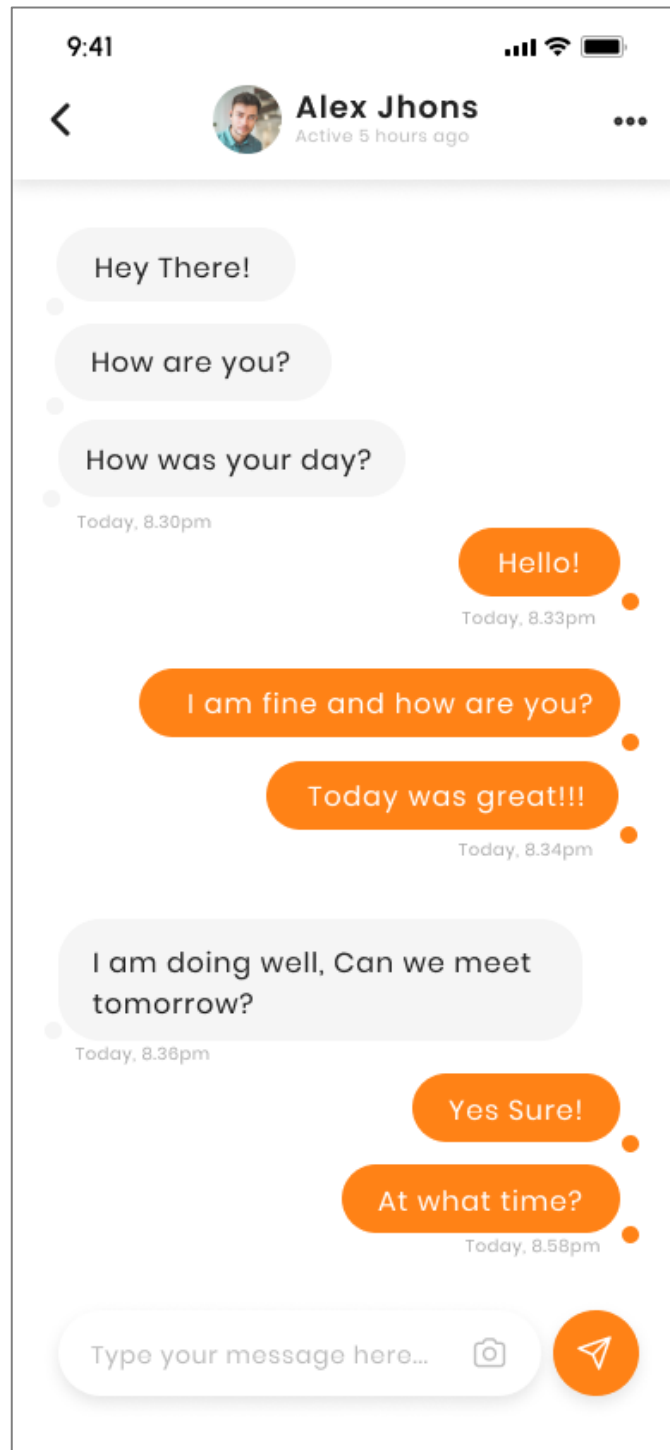


Figure 32 Chat Screen

6.1.13 Settings Screen

Figure 33 shows the Settings screen where the user is able to make changes to their account.

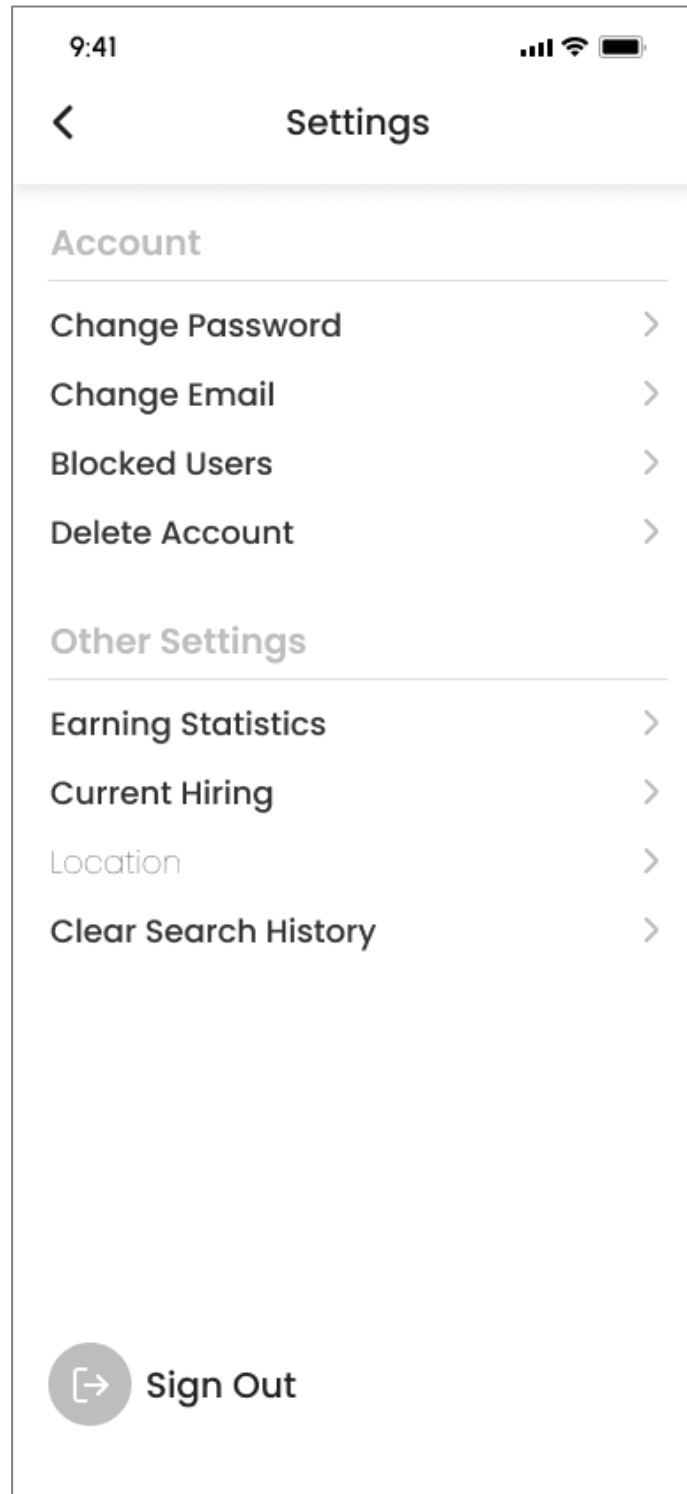


Figure 33 Settings Screen

6.1.14 Buy Content Screen

Figure 34 shows Buy Content screen where the user is able to view the price of content.

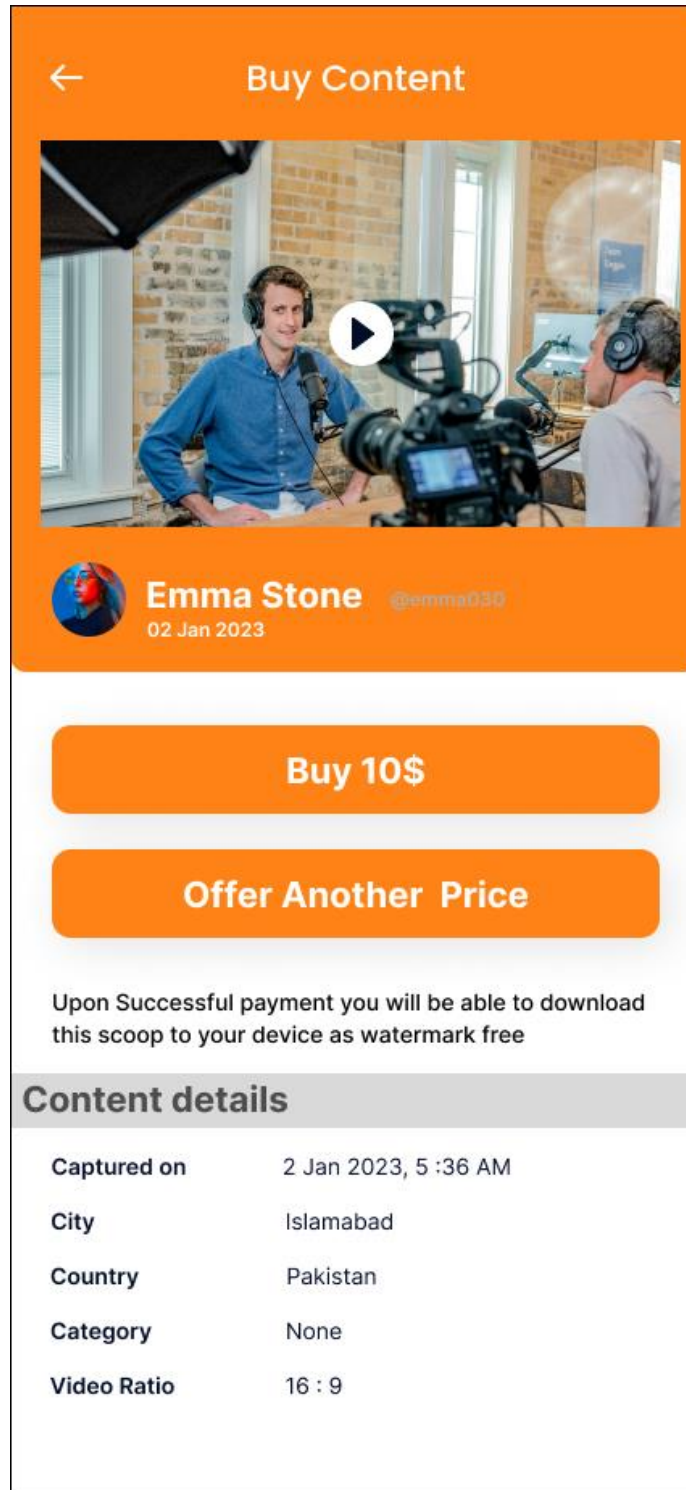


Figure 34 Buy Content Screen

6.1.15 Other Profile Screen

Figure 35 shows the other Profile Screen where user can view other user profile message them follow them, view their content.

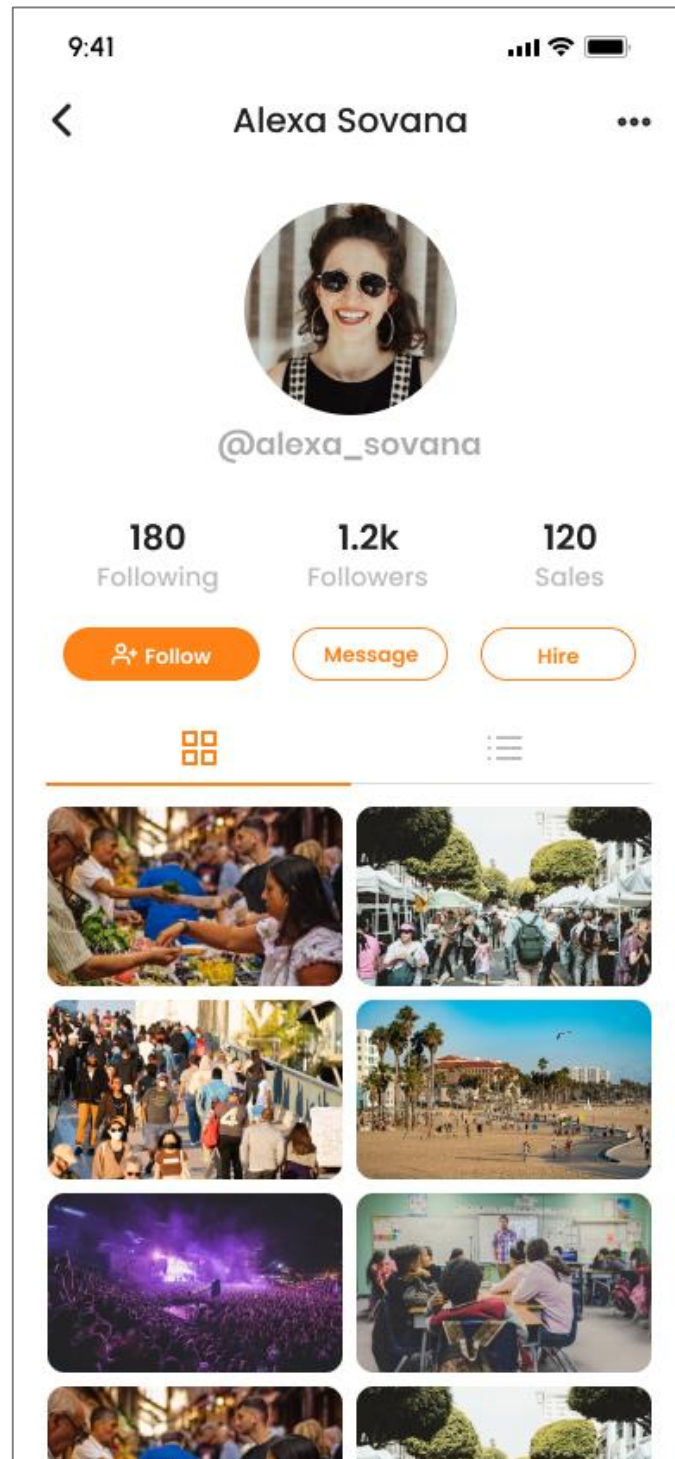
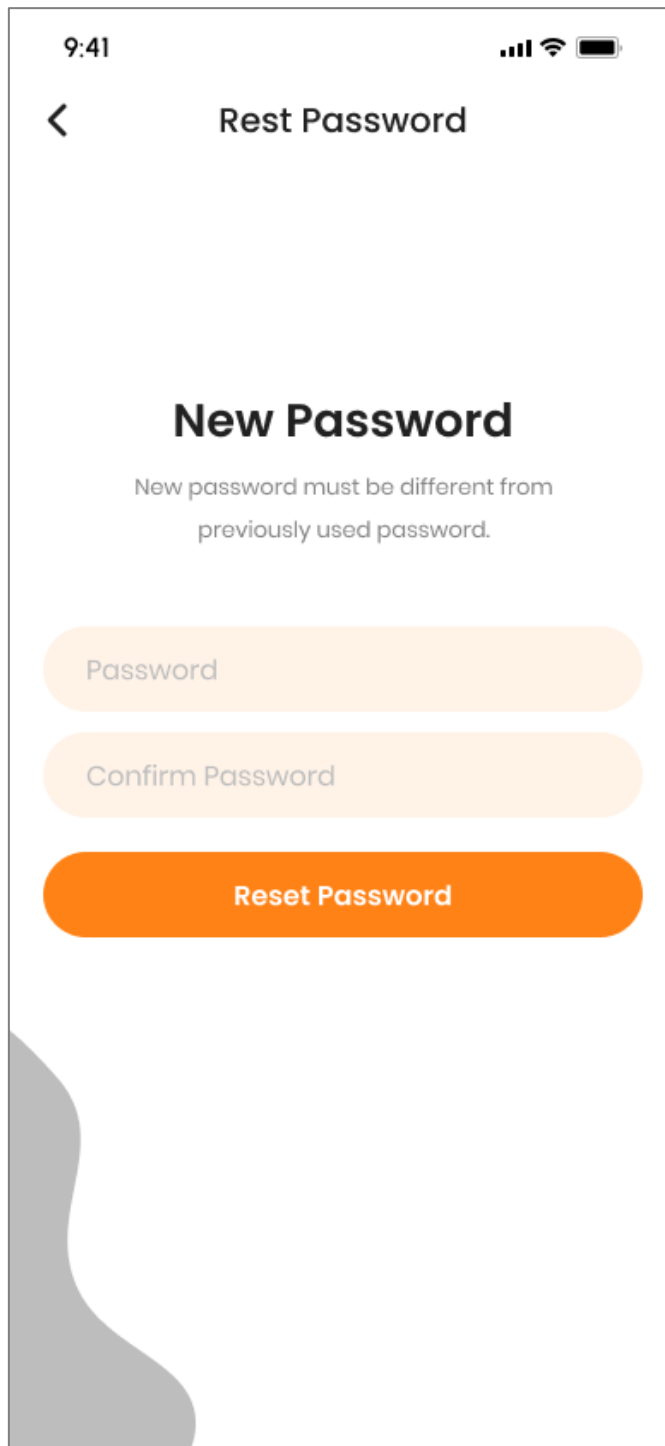


Figure 35 Other Profile Screen

6.1.16 Set Password Screen

Figure 36 shows the set password screen where the user is able to reset their password.



The image shows a mobile application screen for resetting a password. At the top, the status bar displays the time 9:41, signal strength, Wi-Fi, and battery icons. Below the status bar is a navigation bar with a back arrow on the left and the title "Rest Password" in the center. The main content area has a heading "New Password" in bold. Below the heading is a note: "New password must be different from previously used password." There are two input fields with placeholder text "Password" and "Confirm Password". At the bottom is a large orange button labeled "Reset Password". A grey decorative shape is visible in the bottom-left corner of the screen.

Figure 36 Set Password Screen

6.2 Screen Objects and Actions

Following are the Screen Objects that will have specific actions:

6.2.1 Login Button:

Login button is used to login the user to the application.

6.2.2 Video Recording Button:

The user will be able to pause and play recording the video

6.2.3 Teleprompter Button:

User will be able to navigate to the teleprompter screen where he can write the script save it and the script will appear on the camera screen

6.2.4 Upload button:

User will be able to upload content

6.2.5 Draft Button:

User will be able to save the Content in draft

6.2.6 Camera Switch Button:

User will be able to switch front and back camera

6.2.7 Filter button:

User will be able to see special filter list which he can choose from while recording the video

6.2.8 Three dots button:

User will be able to see the setting Screen

6.2.9 Bell Button:

User will be able to see his notifications

6.2.10 Chat Bubble Button:

User will be able to see the messages he's gotten from other users.

6.2.11 User Switch Button:

The user will be able to switch roles.

6.2.12 Side Pane Button:

The User will be able to open the side pane.

6.2.13 View Profile:

The user will be able to view their profile.

6.2.14 Settings:

The user will be able to do setting of app according to his/her own interest.

6.2.15 FAQ:

The user will get their queries solved by opening the FAQ menu using FAQbutton.

6.2.16 Send Feedback:

The user will be able to send feedback using feedback button. userwill be able to pay the rent due using pay button after providing the payment credentials

6.2.17 Avatar Button:

User will be able to switch to the person's profile and be able to view their profile

6.2.18 Follow and Following Button:

User will be able to follow the user if he clicks the follow button and on clicking the following he will be able to see the list of users followed by him.

6.2.19 Message Button:

User will be able to direct message the profile he is visiting

6.2.20 Send Complaint:

The user will be able to send complaints.

6.2.21 Send:

The user will be able to send messages.

6.2.22 Notification Switch:

The user will be able to turn ON/OFF notifications.

6.2.23 Plus Button:

User will be able to write a new message.

6.2.24 Volume Scroll Pane:

The user will be able to change the volume intensity ofnotifications.

6.2.25 Vibration Scroll Pane:

The user will be able to change the vibration intensity ofincoming notifications.

7. Implementation

The algorithms, SDKs and APIs used in the development of News wave are listed down and explained as follows:

7.1 Algorithm

The algorithms in News Wave are given below.

7.1.1 Video Recording

Following is the algorithm of video recording

```
function initializeVideoRecording():
    openCamera()
    setVideoParameters(resolution, frameRate, duration)
function startVideoRecording():
    displayRecordButton()
    onRecordButtonClicked:
        startCapture()
        startTimer()
function captureVideoFrames():
    while isRecording:
        frame = captureFrame()
        storeFrame(frame)
function monitorRecordingDurationAndStorage():
    while isRecording:
        if elapsedTime >= duration:
            stopRecording()

        if availableStorage < requiredStorage:
            stopRecording()
function providePauseAndStopOptions():
    displayPauseButton()
    displayStopButton()
    onPauseButtonClicked:
        pauseRecording()
        displayResumeButton()
    onStopButtonClicked:
        stopRecording()
        saveRecordedVideo()
function performPostRecordingActions():
```

```
    displayPreviewOptions()
    displayEditOptions()
    addMetadata()
    provideSharingOptions()
function cleanUpAndFinalize():
    closeCamera()
    releaseResources()

initializeVideoRecording()
startVideoRecording()
captureVideoFrames()
monitorRecordingDurationAndStorage()
providePauseAndStopOptions()
performPostRecordingActions()
cleanUpAndFinalize()
```

7.1.2 Upload Content

Following is the Algorithm for Upload Content

```
function uploadContent():
    content = captureContent()
    metadata = gatherMetadata()
    validateContent(content)

    if isContentValid(content):
        uploadToServer(content, metadata)
        displaySuccessMessage()
    else:
        displayErrorMessage()

function captureContent():
function gatherMetadata():
function validateContent(content):
function uploadToServer(content, metadata):
function displaySuccessMessage():
function displayErrorMessage():
uploadContent()
```

7.1.3 Job Posting

Following is the algorithm of job posting

```

function createJobPost():
    jobPost = {
        "title": jobTitle,
        "description": jobDescription,
        "requirements": jobRequirements,
        "location": jobLocation,
        "contact": jobContact
    }
    if validateJobPost(jobPost):
        saveJobPost(jobPost)
        displaySuccessMessage("")
    else:
        displayErrorMessage("")
function validateJobPost(jobPost):
    if jobPost["title"] is empty or jobPost["description"] is empty or
    jobPost["location"] is empty:
        return false
    else:
        return true
function saveJobPost(jobPost):
function displaySuccessMessage(message):
function displayErrorMessage(message):
function getUserInput(prompt):
createJobPost()

```

7.1.4 Change Notification Settings:

Following is the algorithm of Change Notification Settings

```

if(chatNotification)
    DISPLAY chat notification settings
    CHANGE settings
else if(AdsNotification)
    DISPLAY Ads notification settings
    CHANGE settings

if(setRingtone)
    SELECT ringtone
if(intensity)
    INPUT vibration intensity level

```

SET new vibration level

7.1.5 Send Feedback

Following is the algorithm of Send Feedback

```

if(login)
    do
        INPUT feedbackMessage
        INPUT rating
        while(feedbackMessage NOT null OR rating NOT 0)
else
    DISPLAY "Please login"

```

7.1.6 Login

Following is the algorithm of Login

```

do
    INPUT email
    if(verifyEmail NOT EQUAL true)
        DISPLAY "Invalid Email"
while (verifyEmail EQUAL false)

if(account NOT found)
    DISPLAY "Invalid login credentials! Please try again!"
else
    DISPLAY "Successfully logged in!"

```

7.2 External APIs/SDKs

Describe the third-party APIs/SDKs used in the project implementation in the following table. Few examples of APIs are provided in the table.

Table 2 Details of APIs used in the News Wave

Name of API and version	Description of API	Purpose of usage	List down the API endpoint/function/class in which it is used
Stripe (version 2020-08-27)	Credit Card payment integration	Sandbox used for the orders payment	stripe.paymentMethods.create

7.3 User Interface

The user interface screens for our mobile application are as follows:

7.3.1 Splash Screen



Figure 37: Splash Screen

Figure 37 shows the splash screen where the user lands first when the application starts.

7.3.2 Home Screen

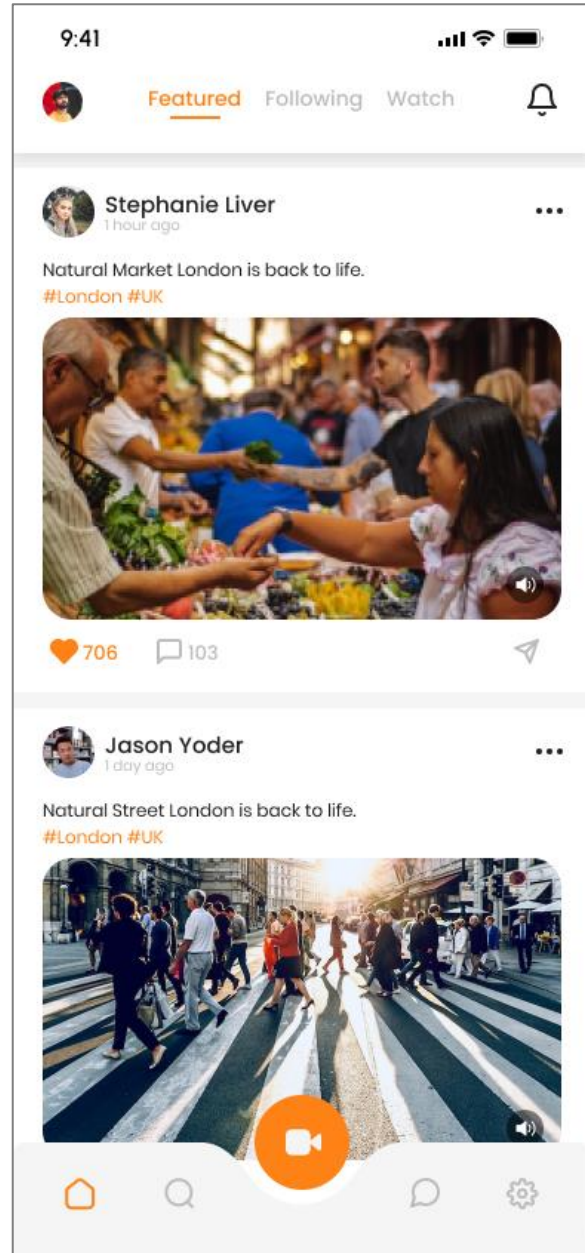


Figure 38: Home Screen

Figure 38 shows the Home screen which the opening screen of application and shows the posted content.

7.3.3 Main Search Screen

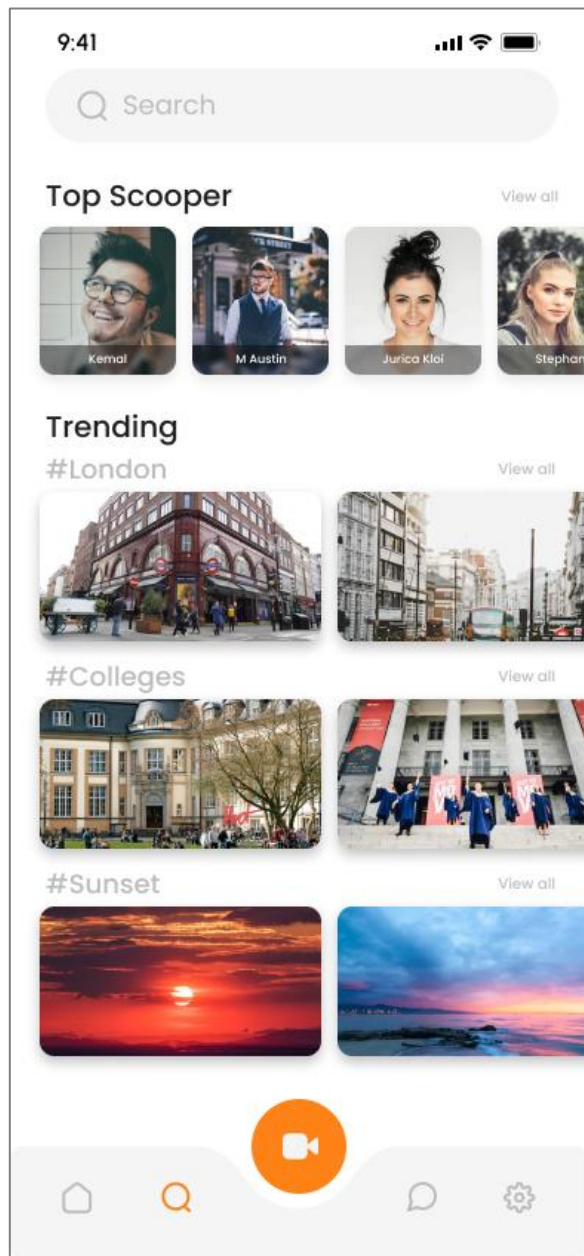


Figure 39:Main Search Screen

Figure 39 shows the Search screen where the user can Search for people and content posted around the world.

7.3.4 Search Screen

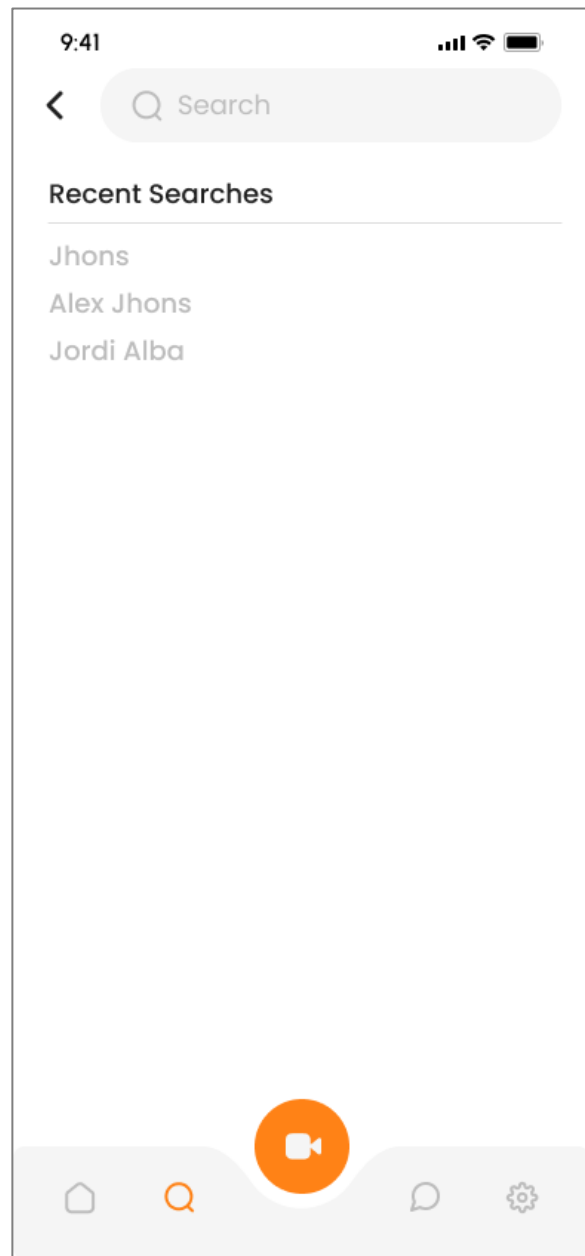


Figure 40:Search Screen

Figure 40 shows the Search screen where the user can Search for people and content posted around the world.

7.3.5 Profile Screen

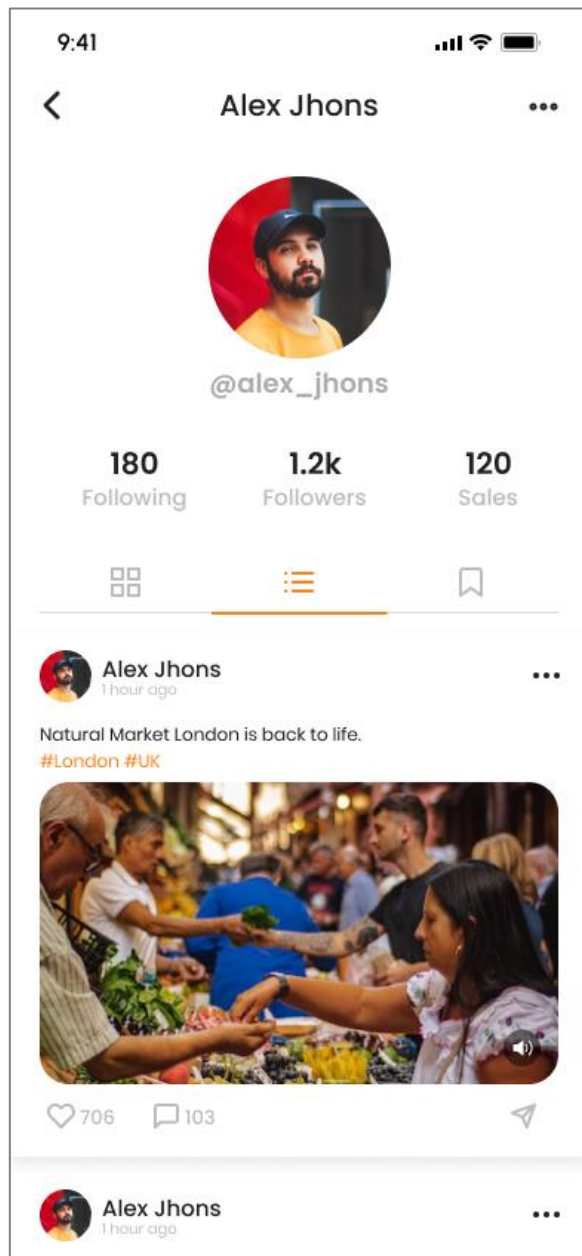


Figure 41:Profile Screen

Figure 41 shows the Profile screen where the user can see his posted content and the amount of following and followers they have.

7.3.6 Profile Screen 2



Figure 42:Profile Screen 2

Figure 42 shows the Profile screen where the user can see his posted content and the amount of following and followers they have.

7.3.7 Other Profile Screen

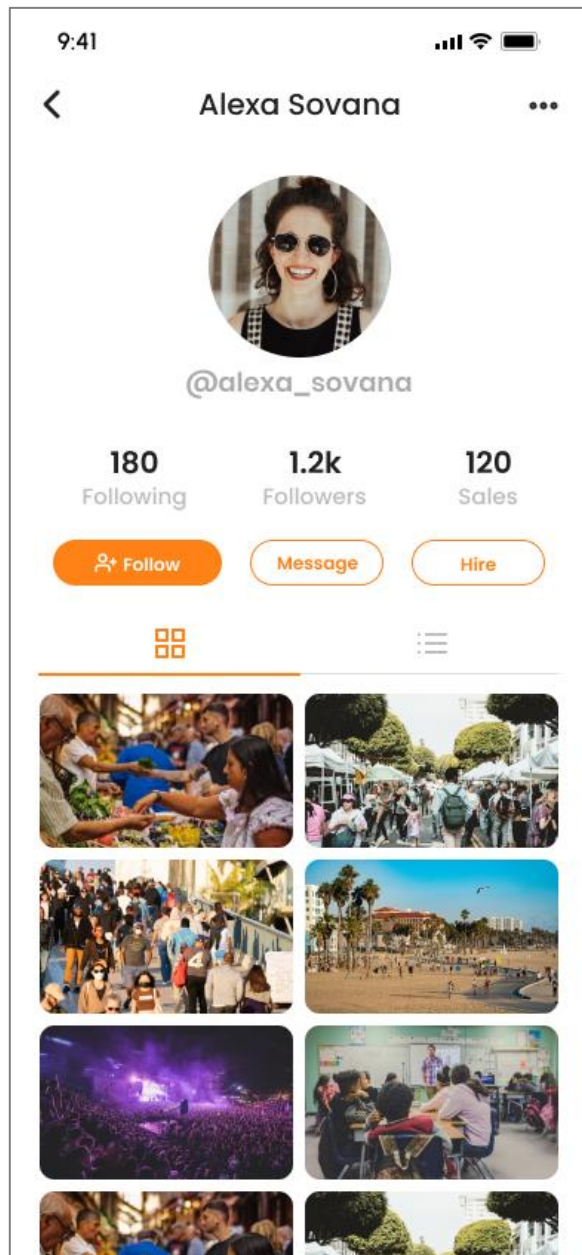


Figure 43:Other Profile Screen

Figure 43 shows the other Profile Screen where user can view other user profile message them follow them, view their content.

7.3.8 Video Recording Screen

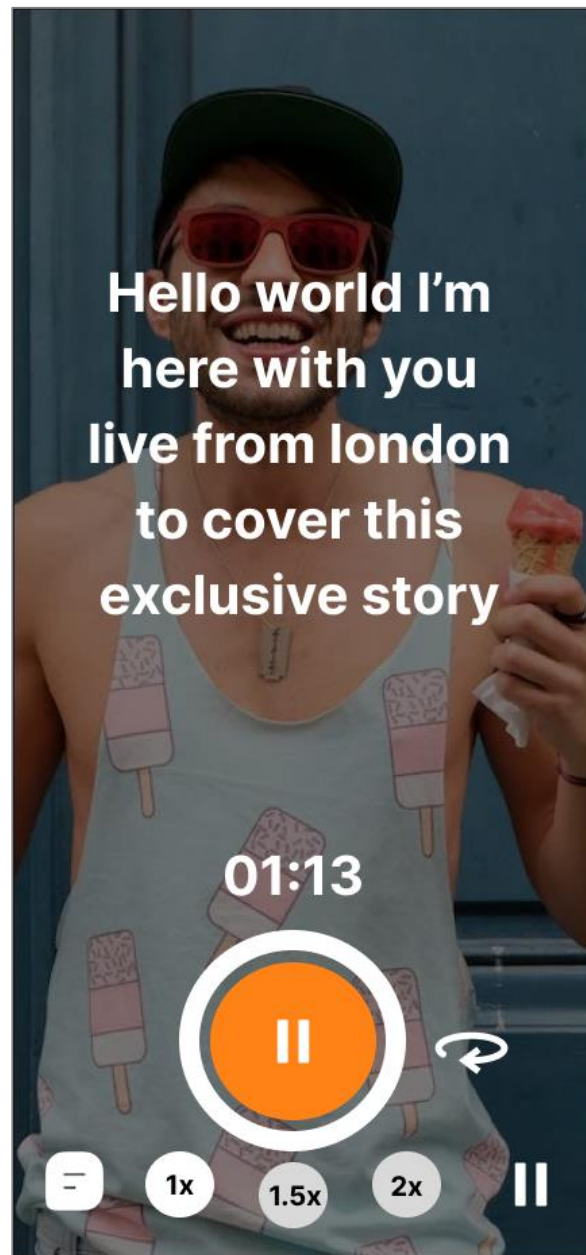
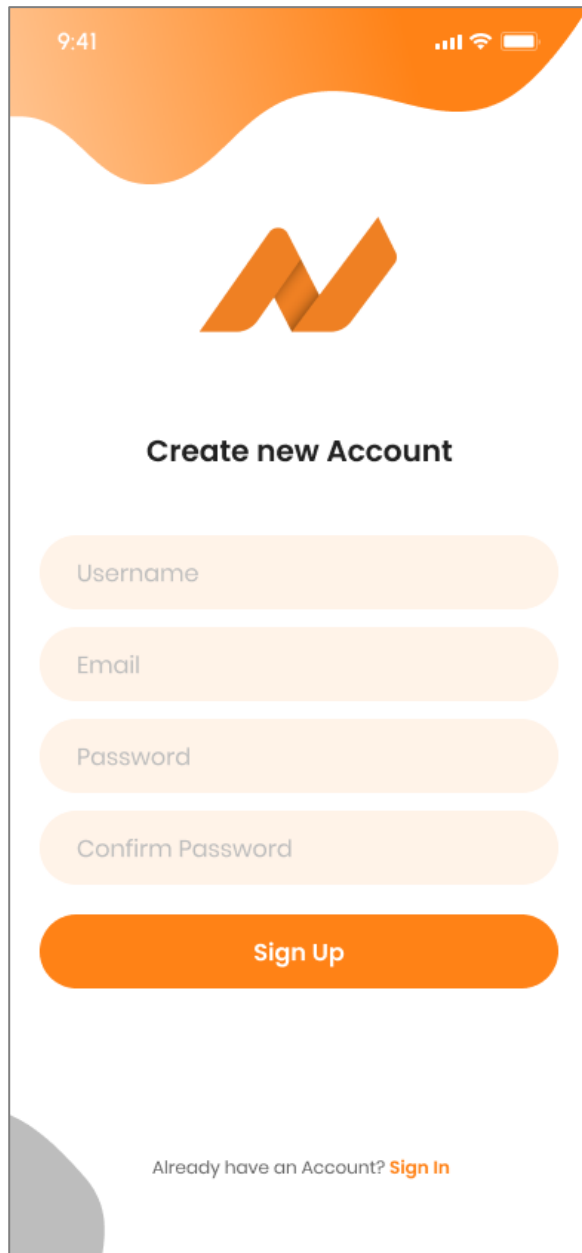


Figure 44:Video Recording Screen

Figure 44 shows the video recording screen where the user can try on different features of teleprompter, filters and other stuff and record high quality videos.

7.3.9 Sign Up Screen

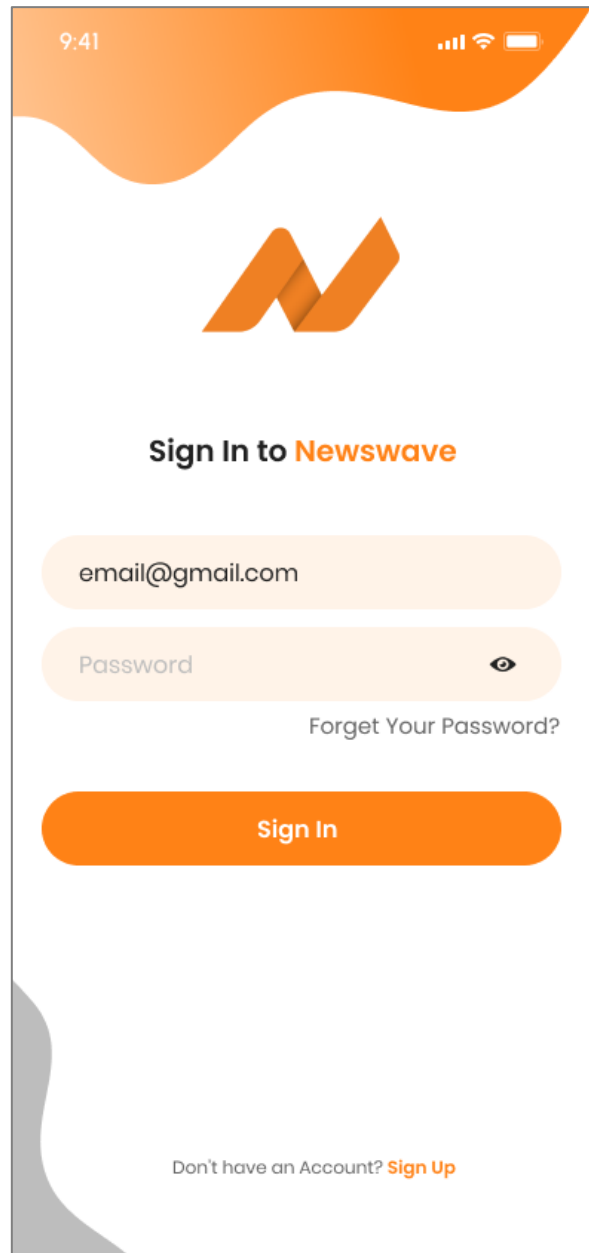


The Sign Up screen features a white background with an orange header bar at the top. The header bar contains the time '9:41' on the left and signal, Wi-Fi, and battery icons on the right. Below the header is a large orange 'W' logo. The main heading is 'Create new Account' in bold black text. Below this are four rounded rectangular input fields: 'Username', 'Email', 'Password', and 'Confirm Password'. At the bottom of the form is a large orange button labeled 'Sign Up'. At the very bottom, there is a link that says 'Already have an Account? Sign In'.

Figure 45:Sign up Screen

Figure 45 shows the Sign up screen where the user is able to give his credentials and sign up into their account.

7.3.10 Login Screen



The Login screen features a white background with an orange header bar at the top. The header bar contains the time '9:41' on the left and signal, Wi-Fi, and battery icons on the right. Below the header is a large orange 'W' logo. The main heading is 'Sign In to Newswave' in bold black text. Below this are two rounded rectangular input fields: 'email@gmail.com' and 'Password'. The 'Password' field has an eye icon to its right. Below the password field is a link that says 'Forget Your Password?'. At the bottom of the form is a large orange button labeled 'Sign In'. At the very bottom, there is a link that says 'Don't have an Account? Sign Up'.

Figure 46:Login Screen

Figure 46 shows the Login Screen where the user give email password and login to their account.

7.3.11 Post Content Screen

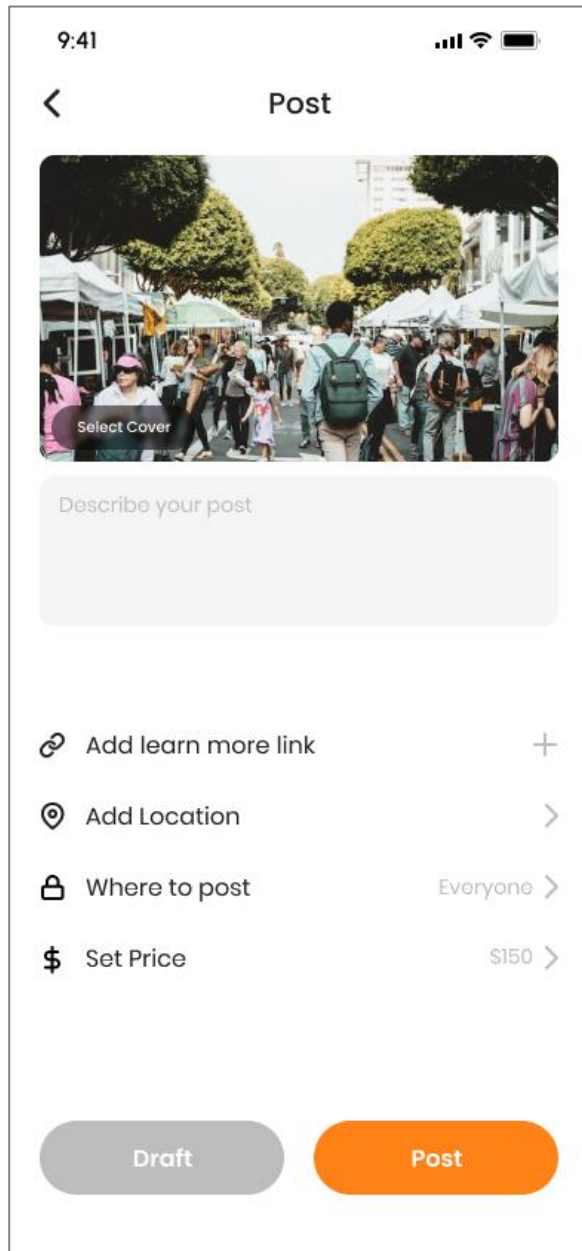


Figure 47:Post Content Screen

Figure 47 shows the Upload Content screen where the user gives description about his Content price, privacy etc.

7.3.12 Filter Post Screen

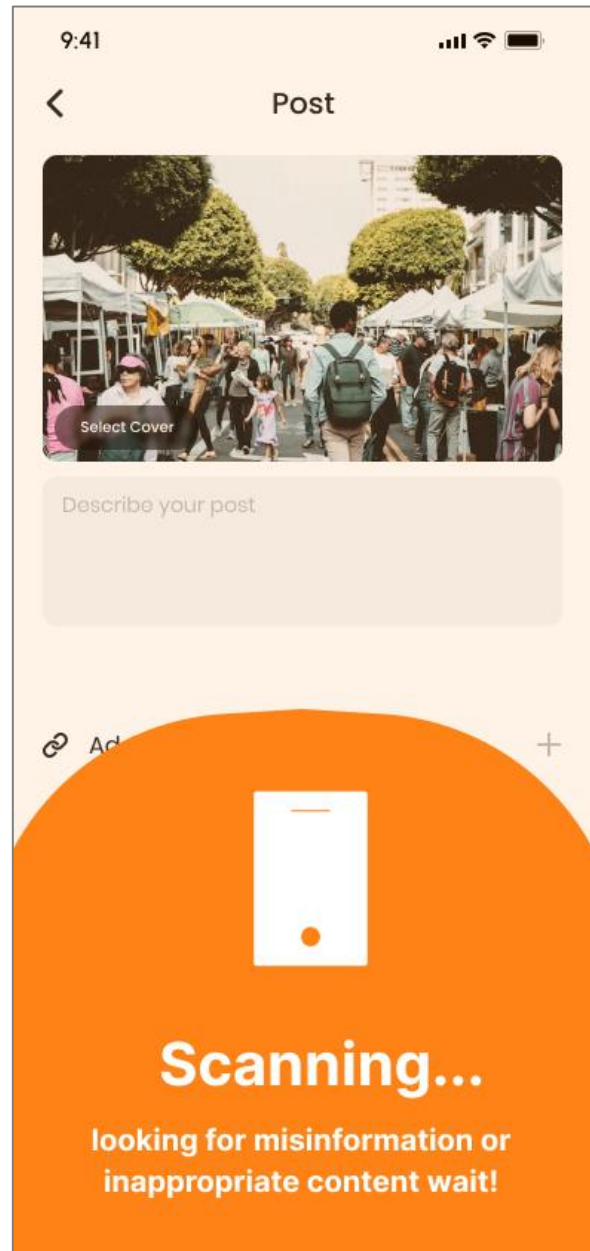


Figure 48:Filter Content Screen

Figure 48 shows the Content Filter screen where the Application runs the content through Machine Learning Algorithm to look for any misinformation.

7.3.11 Filter Audience Screen

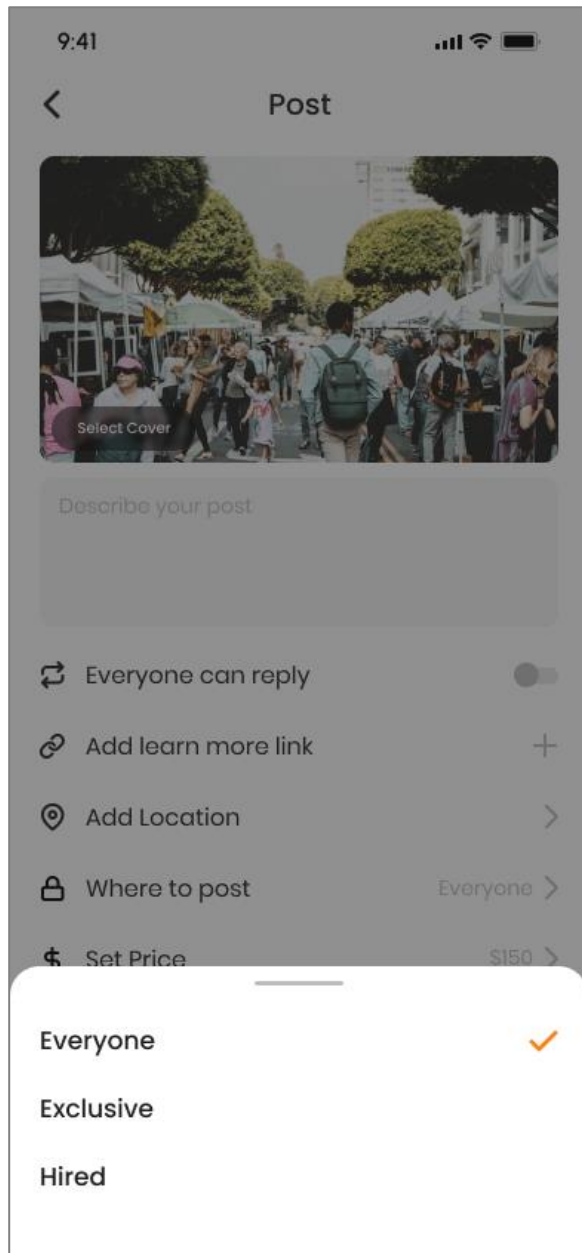


Figure 49:Filter Audience Screen

Figure 49 shows the filter Audience Screen which shows the audience who can see the posted content

7.3.12 Option popup Screen

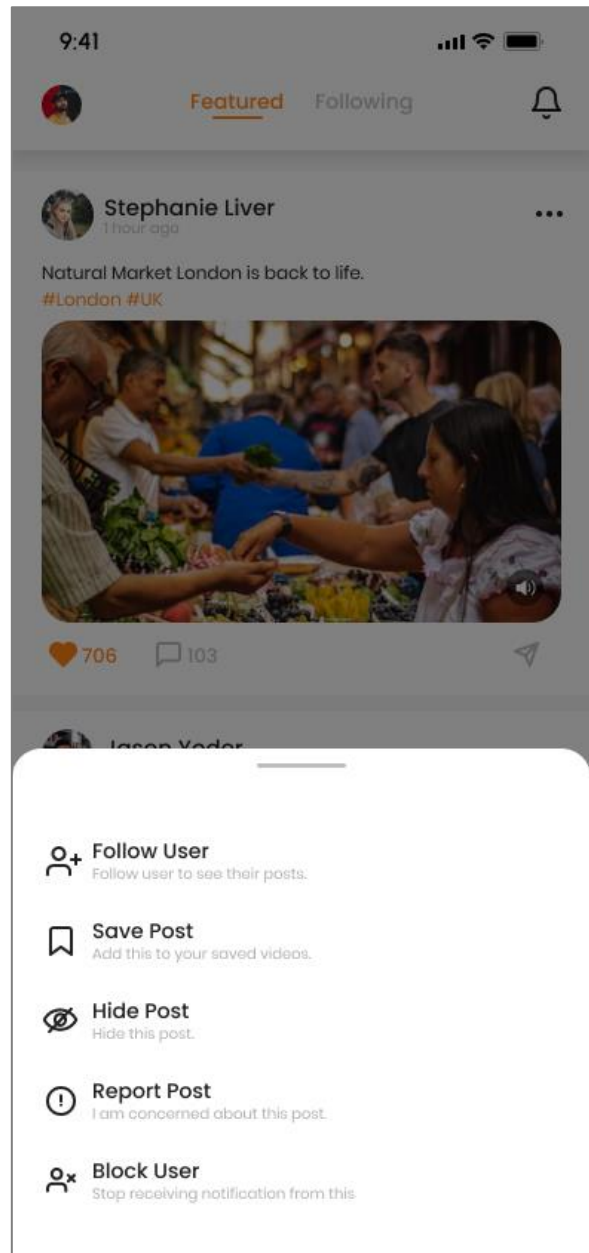


Figure 50:Option popup Screen

Figure 50 shows the Option popup screen where different option are provided to the user

7.3.15 Message Screen

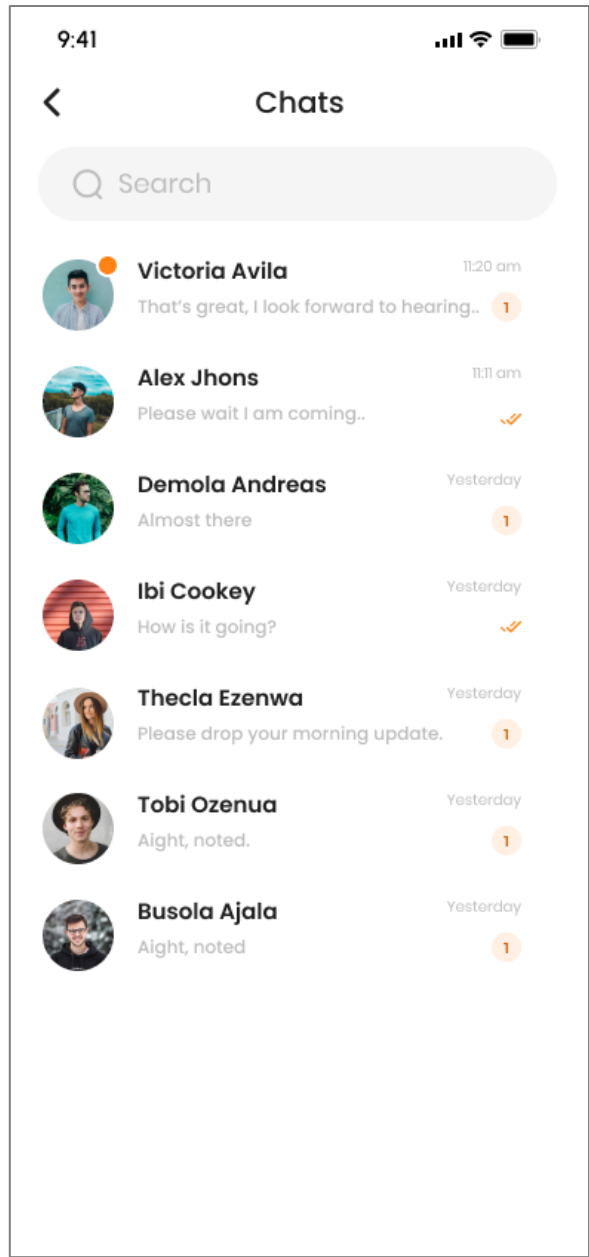


Figure 51:Chat Screen

Figure 51 shows the list of user the user has interacted with

7.3.16 Chat Screen

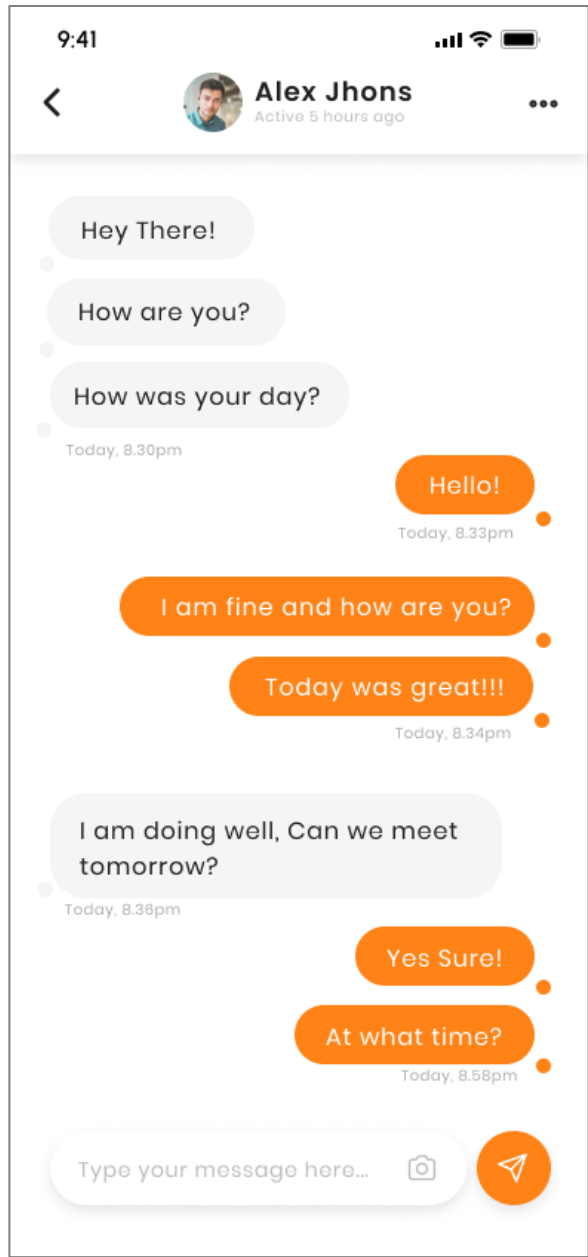


Figure 52:Message Screen

Figure 52 shows the message screen where user can receive and send messages to other users

7.3.17 Notification Screen

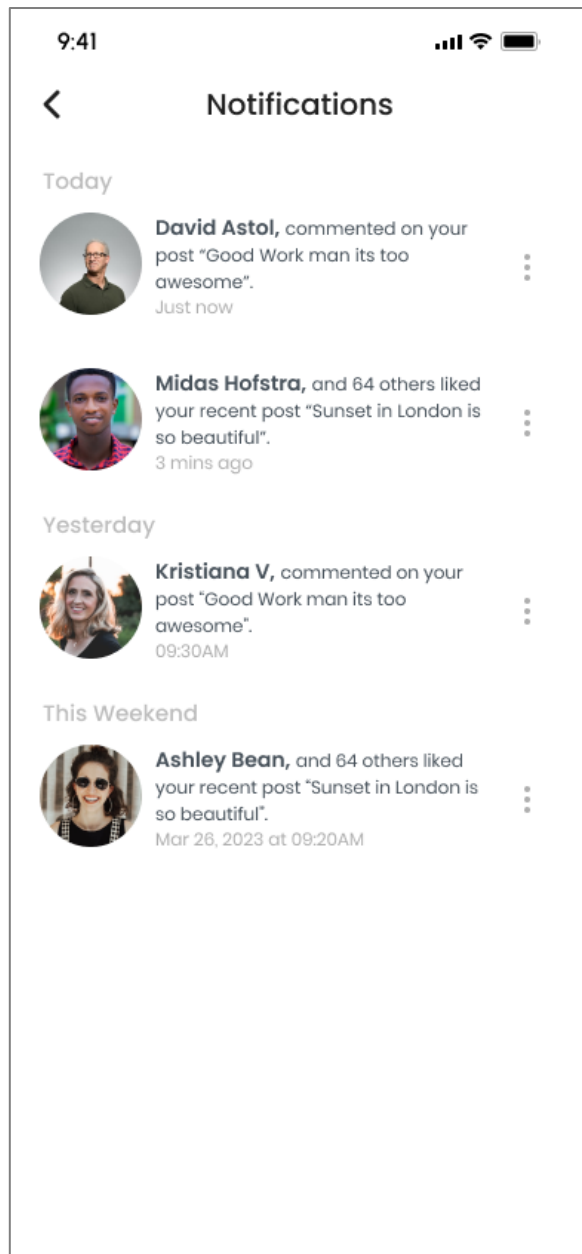


Figure 53:Notification Screen

Figure 53 shows Notification screen where the user is able to view all the notifications.

7.3.18 Settings Screen

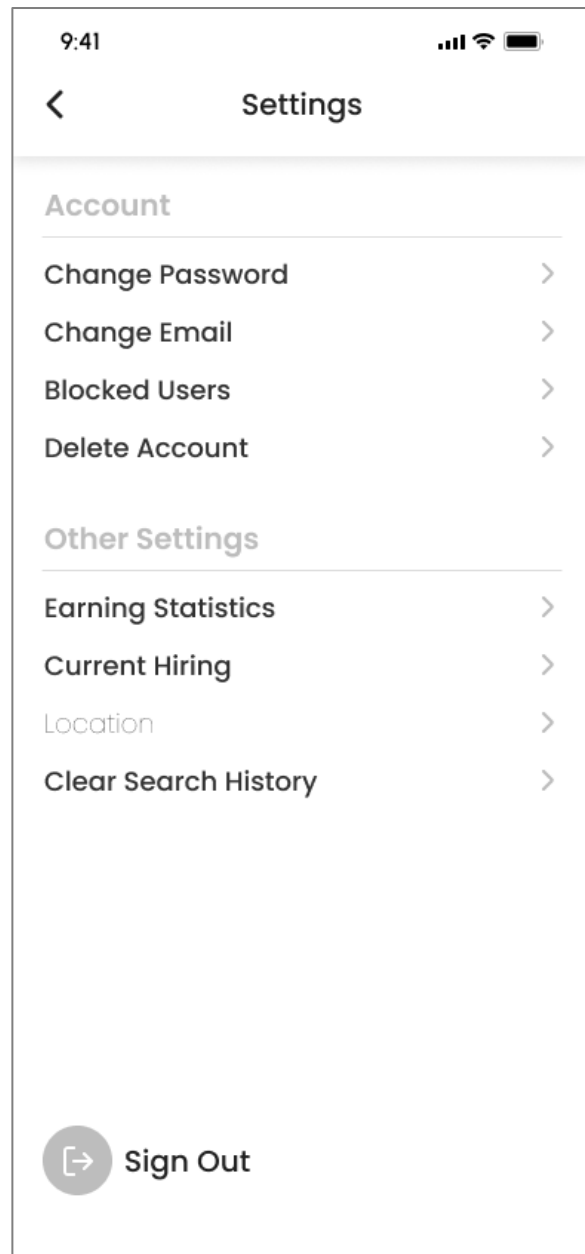


Figure 54:Setting Screen

Figure 34 shows Settings Screen where the user can make changes to his account.

7.3.19 Map Screen

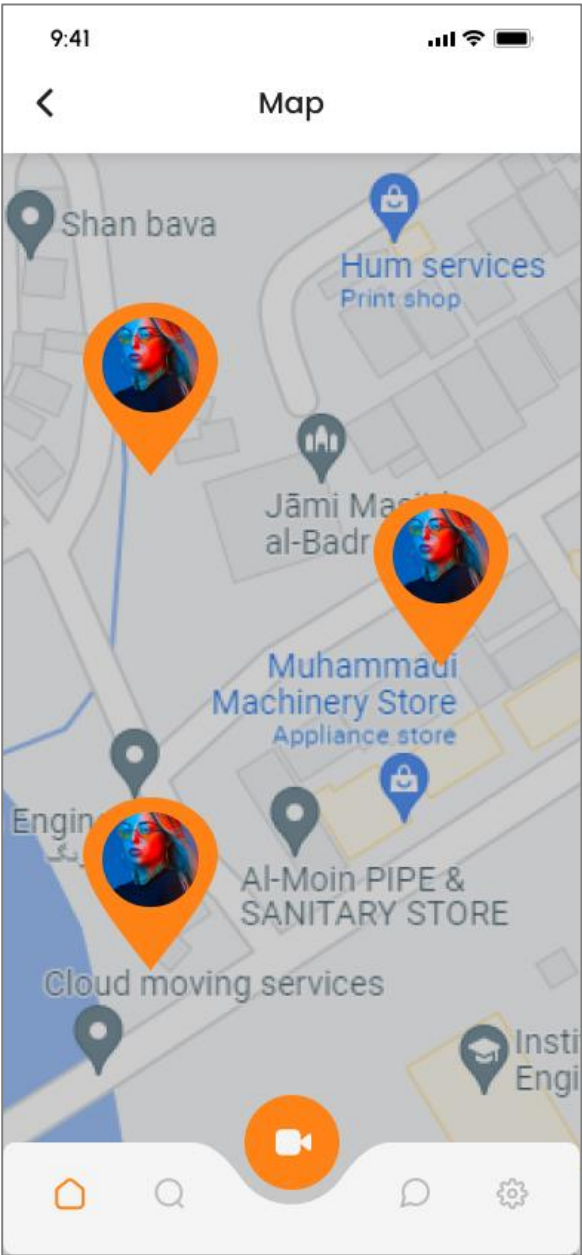


Figure 55:Map Screen

Figure 55 shows Map screen where the user is able to view other user around his area.

7.3.20 Buy Content Screen

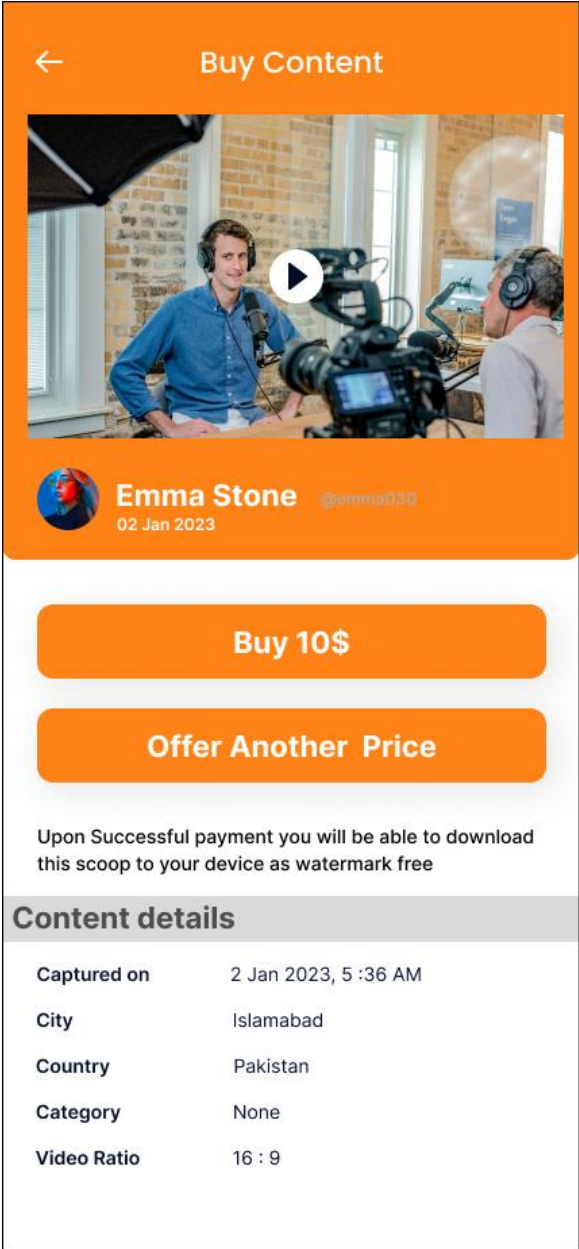
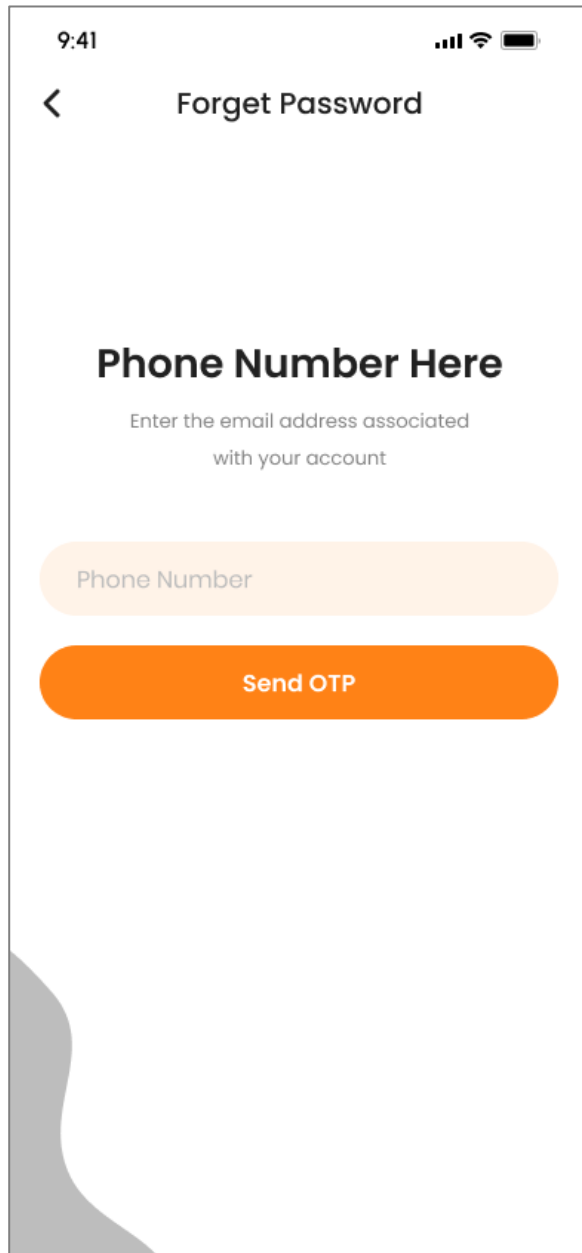


Figure 56:Buy Content Screen

Figure 56 shows Buy Content screen where the user is able to view the price of content.

7.3.21 Forgot Password Screen

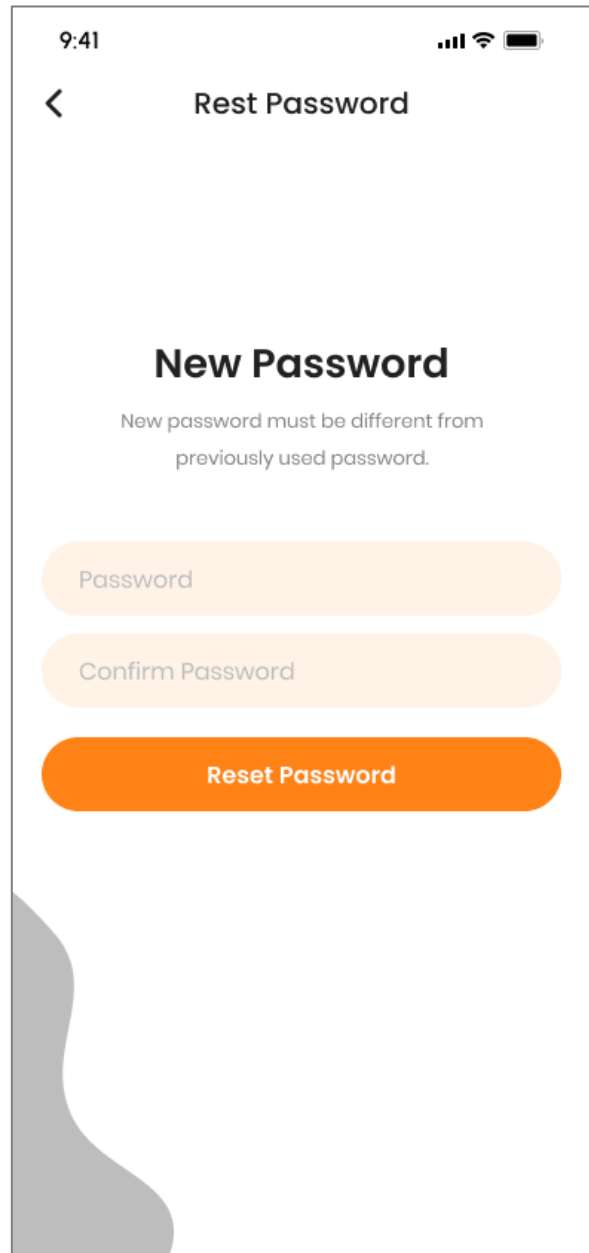


The mockup for the 'Forgot Password' screen is displayed within a mobile app frame. At the top, the status bar shows the time 9:41, signal strength, Wi-Fi, and battery icons. Below the status bar is a navigation bar with a back arrow on the left and the title 'Forgot Password' in the center. The main content area features the heading 'Phone Number Here' in bold, followed by the instruction 'Enter the email address associated with your account' in a smaller font. Below this is a light orange rounded rectangular input field containing the placeholder text 'Phone Number'. Underneath the input field is a prominent orange rounded rectangular button labeled 'Send OTP'. The bottom of the screen shows a grey home indicator bar.

Figure 57:Forgot Password Screen

Figure 57 Forgot Password screen where the user is able to reset his password.

7.3.22 Reset Password Screen

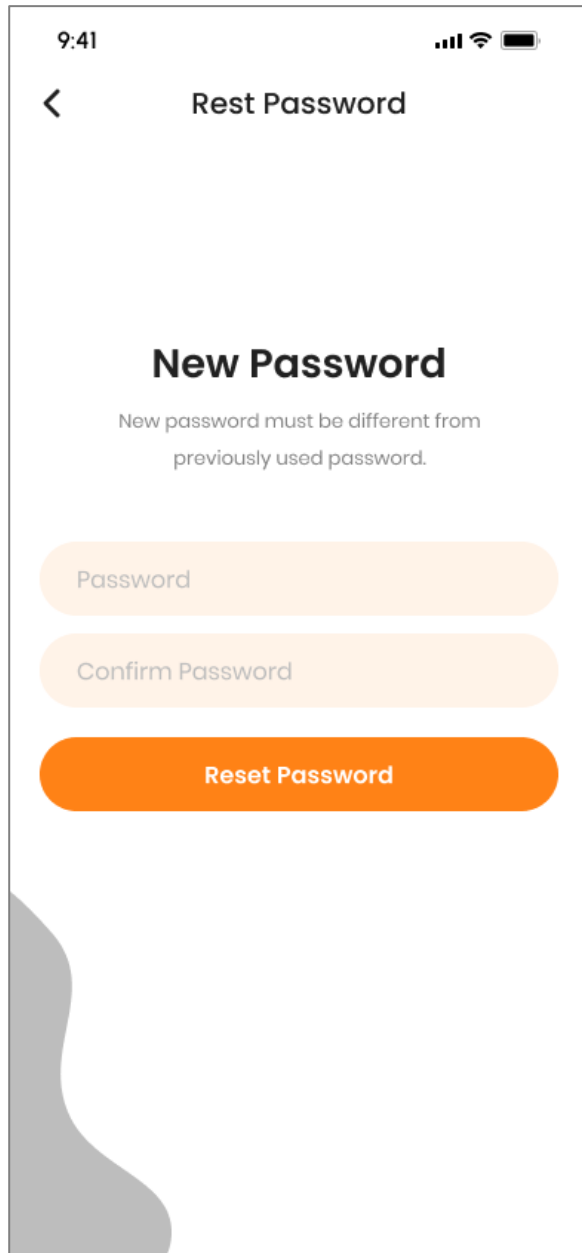


The mockup for the 'Reset Password' screen is displayed within a mobile app frame. At the top, the status bar shows the time 9:41, signal strength, Wi-Fi, and battery icons. Below the status bar is a navigation bar with a back arrow on the left and the title 'Rest Password' in the center. The main content area features the heading 'New Password' in bold, followed by the instruction 'New password must be different from previously used password.' in a smaller font. Below this are two light orange rounded rectangular input fields: the first contains the placeholder text 'Password' and the second contains 'Confirm Password'. Underneath these input fields is a prominent orange rounded rectangular button labeled 'Reset Password'. The bottom of the screen shows a grey home indicator bar.

Figure 58:Reset Password Screen

Figure 58 shows reset Password screen where the user is able to reset his password.

7.3.23 Reset Password Screen

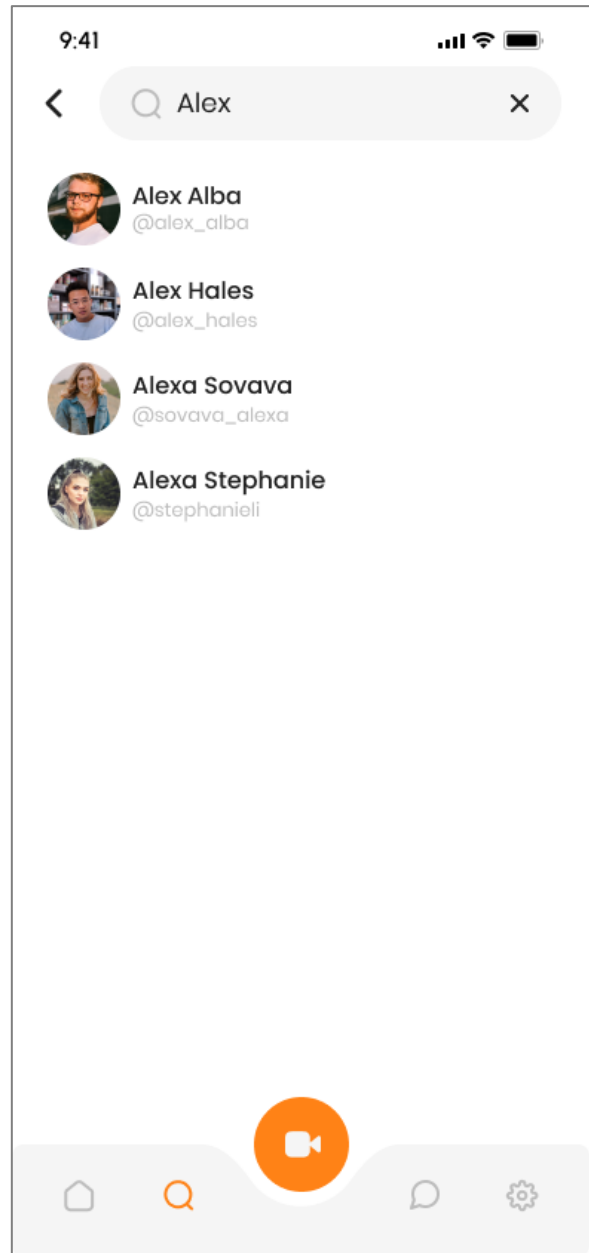


The screenshot shows a mobile app interface for resetting a password. At the top, the status bar displays the time 9:41, signal strength, Wi-Fi, and battery icons. Below the status bar is a navigation bar with a back arrow and the title "Rest Password". The main content area has a heading "New Password" followed by a note: "New password must be different from previously used password." There are two input fields: "Password" and "Confirm Password", both with orange borders. Below these fields is a large orange button labeled "Reset Password". A decorative grey shape is visible in the bottom-left corner.

Figure 59:Reset Password Screen

Figure 59 shows Reset Password screen where the user is able to reset password.

7.3.24 Search Screen



The screenshot shows a mobile app interface for searching users. At the top, the status bar displays the time 9:41, signal strength, Wi-Fi, and battery icons. Below the status bar is a navigation bar with a back arrow and a search bar containing the text "Alex" and a close button (X). The main content area displays a list of search results, each with a profile picture, a name, and a username: "Alex Alba (@alex_alba)", "Alex Hales (@alex_hales)", "Alexa Sovava (@sovava_alex)", and "Alexa Stephanie (@stephanieli)". At the bottom, there is a navigation bar with icons for home, search, a video camera (highlighted with an orange circle), messages, and settings.

Figure 60:Search Screen

Figure 34 shows Search screen where the user is able to Search for people.

7.4 Deployment

Frontend:

For hosting and live testing of the sub-systems in our project using Azure Kubernetes Service (AKS), we can leverage the power of containerization and orchestration. The front end can be hosted on AKS by containerizing the application using tools like Docker and deploying it as a containerized workload. This allows for easy scalability, flexibility, and management of the front-end application. We can choose our front-end framework, such as Next.js and utilize the latest versions supported by the framework and containerization tools.

Backend:

Similarly, the backend API can also be deployed on AKS as a containerized workload. By containerizing the backend using technologies like Docker, we can easily package and deploy the API on AKS. This ensures a consistent and scalable deployment environment for the backend services.

AKS provides a managed Kubernetes environment, which automates the deployment, scaling, and management of containerized applications. It simplifies the process of deploying and managing the various components of our application stack. By utilizing AKS, we can take advantage of the scalability, high availability, and load balancing features offered by Kubernetes.

Additionally, we can also integrate other Azure services with AKS to enhance our application's functionality. This includes services like Azure Container Registry for hosting container images, Azure Active Directory for authentication and authorization, and Azure Monitor for monitoring and logging. When deploying on AKS, it is essential that we are using the latest versions of the containerization tools, Kubernetes, and other dependencies to benefit from the latest features, security patches, and improvements..

8. Testing and Evaluation

This chapter includes several kinds of test cases including unit tests, integration and functional tests used to test the functionality of our system and their results as well.

8.1 Unit Testing

Following are the Unit Tests of News Wave.

8.1.1 Unit Testing 1: User Registration Form

Testing Objective: To ensure the registration form is working correctly with valid and invalid credentials/inputs.

No.	Test case/Test script	Attribute and value	Expected result	Result
1	Check the email field of login to validate that it takes proper email	Email: abc@gmail.com	Validates email address and moves cursor to next textbox	Pass
2	Check the email field of login to validate that it displays error message.	Email: abc.gmail.com	Highlights field and displays error message	Pass
3	Verify that the system generates a validation message on missing a mandatory field when clicking on the submit button.	Name: "Sobia" Email : "" Password: test1234	Error is displayed i-e "Please enter validemail"	Pass
4	Verify that empty field leadsto validation error	Name: "" Email: "" Password: ""	Validation error is displayed for all the fields.	Pass
5	Verify that system remove error message on valid data	Name: "Sobia" Email: sobi.a@hotmail.com Password: 12345678	Validation error message is no more visible	Pass
6	Verify that Email		System will	Pass

	already taken message is displayed for already used email		return a response message saying Email is already in use or invalid. For email which already exists in database	
7	Checks the password entered is correct and has a maximum length of 8.	Password: Abc123#0	Validates the password and displays no error.	Pass
8	Verify that the success message is returned after registration.		System will return a success message on successful attempt of registration.	Pass
9	Verify that system redirects User to Home Page after successful signup		System takes user to home screen	Pass
10	Verify that the user can not go back to the login screen after successfully signing up and navigating to the home screen.		System removes all the routes screen from stack to avoid memory leak	Pass

8.1.2 Unit Testing 2: User Login Form

Testing Objective: To ensure the Login form is working correctly with valid and invalid credentials/inputs.

No.	Test case/Test script	Attribute and value	Expected result	Result
1	Verify that login form is visible and accessible		User can see login screen when click on login	Pass
2	Verify that Login	Email "test"	Validation	Pass

	form has validation on all fields as signup form	Password "test1234	error is displayed for email and password	
3	Verify that Error message is displayed when user account does not exist		User will get a response message with.	Pass
4	Check the email of the user if it is entered correctly.	Email: Abc123@gmail.com	Displays no error.	Pass
5	Checks the password entered is correct and has a maximum length of 8.	Password: Abc123#0	Displays no error.	Pass
6	Verify that Email already taken message is displayed for already used email		System will return a response message saying Email is already in use or invalid. For email which already exists in database	Pass
7	Checks if the "Login" button directs user to the home page of the application.	Valid credentials.	Displays home page.	Pass
8	Checks if the "Login" button does not direct the user to the homepage of the application.	Invalid credentials	Displays error message for entering valid input.	Pass
9	Check if the "Forget Password" link works correctly.	Incorrect Password	Directs the user to forget the password page.	Pass

10	Check if the “Sign up” button works correctly.	User does not have an account.	Directs the user to sign up page.	Pass
----	--	--------------------------------	-----------------------------------	------

8.1.3 Unit Testing 3: Forgot Password page

Testing Objective: To ensure that the user can log in the account by creating a new password.

No.	Test case/Test script	Attribute and value	Expected result	Result
1	Check the email of the user if it is entered correctly.	Email: Abc123@gmail.com	Validates email and the cursor is move to the next textbox.	Pass
2	Checks if the email is entered incorrectly.	Email: Jjsd.@gmail.com	Displays a message that the email is invalid.	Pass
3	Check if the “Send reset link” button works correctly.	A valid registered email should be entered.	A reset link is sent to the email address.	Pass.
4	Check if the “Send reset link” button does not work correctly.	An invalid email address has been entered.	Displays error message a valid email address is required.	Pass
5	Check if the “Login” button works correctly.	User remembers the password.	Directs to the user login page.	Pass
6	Check if the “back arrow” works correctly.		Directs to the login page.	Pass

8.1.4 Unit Testing 4: Profile Screen

Testing Objective: To ensure that the user’s profile is displayed to the user.

No.	Test case/Test script	Attribute and value	Expected result	Result
-----	-----------------------	---------------------	-----------------	--------

1	Checks if the user profile is displayed.		User name and email is displayed.	Pass
2	Checks the Profile drawer is displayed		Displays the profile drawer screen.	Pass
3	Check if the “following and follower” button works correctly.		Displays the user’s wish list.	Pass
4	Check if the “buy” button works correctly.		Displays the user’s bought and sold content.	Pass
5	Check if the “logout” button works correctly.		Log users out of their profile.	Pass
6	Check if the “Delete account” button works correctly.		Displays a message “Are you sure you want to delete your account? Yes or Go Back”.	Pass
7	Check if the users content being displayed.		The User Content is being displayed in order of upload. In grid and list form.	Pass
8	Check if the users content is editbale.		The user content is editble by	Pass

			clicking the three dot button on the content right corner	
--	--	--	---	--

8.1.5 Unit Testing 5: Home Screen

Testing Objective: To ensure the Home screen is working and the write content is being shown to the user.

No.	Test case/Test script	Attribute value	and	Expected result	Result
1	Check if the content is being shown to the user.			Content is being displayed	Pass
2	Click on the featured button			Featured button is working correctly and content is being shown.	Pass
3	Click on the following button			Following button is working correctly and content is being shown.	Pass
4	Click on the Watch button			Watch button is working correctly and content is being shown.	Pass
5	Click on the bell button			Bell button is working correctly and screen is navigating to notification screen.	Pass
6	Click on the three dots on any content video			The button is working and giving various option in the popup model	Pass
7	Click on the like button			Like button is working correctly and the count is being incremented	Pass
8	Click on the download button			The button is working and screen is navigating to buy content screen	Pass

9	Scroll through the window		The scroll is working and the homescreen is being scrolled in three screens	Pass
---	---------------------------	--	---	------

8.1.6 Unit Testing 6: Search Main Screen

Testing Objective: To ensure the Search Main Screen is working correctly and displaying tags and top scoopers.

No.	Test case/Test script	Attribute and value	Expected result	Result
1	Check if the user Main Search Screen is being displayed		The Search main screen is working displaying the top scoopers and different tags	Pass
2	Checks if the input text tab is working		Input text tab is working o clicking it navigates to a new screen allowing user for search	Pass
3	Check if top Scoopers view all button works		View All button works on clicking the user gets a list of top scoopers	Pass.
4	Check if tags view all button works		View All button works on clicking the user gets a list of tags	Pass.

8.1.7 Unit Testing 7: Search Form

Testing Objective: To ensure the Search form is working correctly with valid and invalid credentials/inputs.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Check if the empty fields are sent.	“”	Displays user message “Please fill out the form”	Pass
2	Enter john in the text field .	Name : john	It shows a list of users with similar name below the text field	Pass
3	Enter invalid in the text field .	Name : sjdff	It shows not found message below the text field	Pass
4	Check if the back button works		Back button works and on clicking we go back to main search screen	Pass
5	Check if the cancel button works		Cancel button works and it clears the data written in the text field	Pass
6	Check if the clear recent search button works		Clear recent search button works and it clears the recent searches	pass

8.1.8 Unit Testing 8: Notification Screen

Testing Objective: To ensure the Notification Screen works and the user is getting timely notifications.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Check if the back button works		Back button works and on clicking we go back to previous screen	Pass
2	List of notifications visible.		Notification list is visible	Pass
3	Are the notifications clickable		Notifications are clickable and navigate to their screen on click	Pass
4	Is notification disable button working		On click the notifications are	Pass

			being enabled and disabled	
--	--	--	----------------------------	--

8.1.9 Unit Testing 9: Chat Screen

Testing Objective: To ensure the Chat Screen is working correctly.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Check if the list of chats is being shown		List of chats is being displayed	Pass
2	Is Chat clickable.		Chat is Clickable and on click the screen is shifted to new window where the user can send and receive messages	Pass
3	Check if the back button works		Back button works and on clicking we go back to main search screen	Pass
4	Is the Plus button working		Plus button is working and allowing the user to write a new message on click.	Pass
5	Are the messages deleteable.		On long press a modal pops up and the user is able to delete the message	Pass
6	Enter text in the text field.	Name : john	If the user has a history of messages with john than his name will pop up else it will give message not found.	Pass

8.1.10 Unit Testing 10: Message Screen

Testing Objective: To ensure if the messages are correctly being sent and received.

No.	Test case/Test script	Attribute value and	Expected result	Result
-----	-----------------------	---------------------	-----------------	--------

1	Check if the chat between users is being shown		chat is being displayed, showing the sent messages in orange and received messages in gray background	Pass
2	Is Chat scrollable.		Chat is Scrollable showing all previous and new messages on scroll	Pass
3	Check if the back button works		Back button works and on clicking we go back to previous screen	Pass
4	Is the send button working		Send button is working and allowing the user to send the written message.	Pass
5	Are the messages deleteable.		On long press a modal pops up and the user is able to delete the message	Pass
6	Enter text in the text field.	Name : john	The text is being entered in the field	Pass

8.1.11 Unit Testing 11: Setting Screen

Testing Objective: To ensure the Setting Screen is being displayed showing all the options to make changes to the account.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Is the list of options being shown in the setting screen		All the options are visible in the setting screen	Pass
2	Check if Options are clickable.		Options are clickable either triggering popups or navigating to new screen	Pass
3	Check if the back button works		Back button works and on clicking we go back to previous screen	Pass

4	Check if the log out button is working		Log out button is working triggering a pop up and asking for confirmation.	Pass
5	Check if the delete account button is working		All the options are visible in the setting screen	Pass

8.1.12 Unit Testing 12: video recording Screen

Testing Objective: To ensure the Video recording Screen is working

No.	Test case/Test script	Attribute and value	Expected result	Result
1	Is the video button recording the video		On press the video button pause and play recording the video.	Pass
2	Is the Filter button working.		The filter button is working showing a list of filters the user can choose from while recording video or before recording video	Pass
3	Is the teleprompter button working		The teleprompter button is working on click it navigate to the teleprompter screen where user can write the script	Pass
4	Is the script written in teleprompter shown while recording video		The script is being shown while recording the video	Pass
5	Is the cross button on the script working		The cross button on the script is working it makes the scripts disappear	Pass
6	Is camera flip button working		The camera flip button is working on one click it will switch to front camera and on the	Pass

			next it will do vice versa	
7	Is the flash button working		The flash button is working on click it turns on/off the flash of your phone	Pass
8	Is the stopped recording being saved		The stopped recording id being saved and on press of next it moves to the upload Screen	Pass

8.1.13 Unit Testing 13: Teleprompter

Testing Objective: To ensure the teleprompter screen is working correctly

No.	Test case/Test script	Attribute value	and	Expected result	Result
1	Check whether the data is being entered in the text field			On press of button the data is being entered in the text input.	Pass
2	Check whether the save button is working			The save button is working and we are navigating back to the camera screen with a script we written on the teleprompter screen.	Pass
3	Is the back button working			The button button is working pushing the stack back to previous screen	Pass
4	Is the text being clear on clear button			On pressing the clear button the data in the text field is being cleared.	Pass

8.1.14 Unit Testing 14: Upload content screen

Testing Objective: To ensure the Upload Content screen is working and the content is being uploaded on the home screen being visible to intended audience.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Is the recorded video being shown in the uploaded screen		The right recorded video is being shown in the upload content screen	Pass
2	Check whether video description can be given in the field		Video description can be given by adding text in the field.	Pass
3	Check if the save to draft button is working		The save to draft button is working and the video is being to saved to draft	Pass
4	Check if the upload button is working		The upload button is working and the video is being displayed on the home screen	Pass
5	Check if the price of content being set		The price of the content is being set	Pass
6	Check if the intended audience is being set		The audience can be set by choosing between three options	Pass

8.1.15 Unit Testing 15: change password Screen

Testing Objective: To ensure the change password screen is working correctly with valid and invalid credentials/inputs.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Check if the enter old password text field works	Password: asldskfls	Checks for the password for the user in the database if found the password will reset and if not error message	Pass
2	Check if the enter new password text field works	Password: adfdfdndn	The new password field is working	Pass

3	Check if the set password button works		If the user has entered correct credentials the password will be reset or an error message	Pass
---	--	--	--	------

8.1.16 Unit Testing 16: Content Enhancement Screen

Testing Objective: To ensure the Content Enhancement form is working correctly.

No.	Test case/Test script	Attribute and value	Expected result	Result
1	Check if effects can be applied on the video		Effects are being applied on the video according to users choice.	Pass
2	Check if the sound removal button is working		Sound removal button is working onclick the sound is turned on and off	Pass
3	Check if the crop button is working		Crop button is working on click it gives the user option to trim the video according to choice.	Pass
4	Check if the add location button is working		Add location button is working on click the user's current location is being added in the video.	Pass
5	Check if the sound removal button is working		Sound removal button is working onclick the sound is turned on and off	Pass

8.1.17 Unit Testing 17: Edit Profile Screen

Testing Objective: To ensure the Edit profile Screen is working correctly.

No.	Test case/Test script	Attribute and value	Expected result	Result

1	Verify that the Edit Profile form contains username, name and surname, phone, address, email, country, image and save button.		All fields are visible and working.	Pass
2	Verify that the system generates a validation message on missing a mandatory field when clicking on the submit button.	Username: 'Urooj' Name and Surname: 'Urooj Murtaza' Email: ""	Error is displayed i-e "Please enter valid email"	Pass
3	Verify that the system shows validation message on entering invalid email address format.	Username: 'Urooj' Name and Surname: 'Urooj Murtaza' Email: "urooj" Password: "abc123"	Error is displayed i-e "Please enter a valid email"	Pass
4	Verify that empty field leads to validation error	Name: "" Email: ""	Validation error is displayed for all the fields.	Pass
5	Verify that system remove error message on valid data	Name: "Urooj" Email: urooj@hotmail.com	Validation error message is no more visible on correct data	Pass
6	Verify that the image upload button	Upload an image using the "Upload Image"	Image successfully gets	Pass

	is working fine and successfully uploads image.	form button	uploaded and stored in the directory as well as in the database.	
7	Verify the image on the left gets updated after uploading new image.	Upload an image using the "Upload Image" form button	Profile Picture successfully gets updated.	
8	Verify that the success message is returned after saving the form		System will return a success message on successful attempt of editing profile.	Pass
9	Verify that all the information regarding user is showing successfully in the fields.		All the user information is loaded successfully.	Pass
10	Verify that all the correct information is showing on the screen.	Verifying the data showing on the screen with the data in the database.	All the data showing on the screen is correct.	Pass

8.1.18 Unit Testing 18: Follow and follower list screen

Testing Objective: To ensure the Follow and followers list screen is working correctly.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Check if the correct following and follower list is being shown		The correct list of user is being shown	Pass
2	Check if each user is clickable		All the user in the list are clickable and on click we	Pass

			navigate on their profile.	
3	Ensure the user is being shown the correct count of follower and followings		The correct amount of follower and following count is being shown	pass

8.1.19 Unit Testing 19: Job Posting Screen

Testing Objective: To ensure the Job posting screen is working correctly so that both news channels and users can post jobs in order to cover new stories.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Check the whether right information is being shown in job posting screen		The correct information is being shown in screen	Pass
2	Check whether the jobs are being posted		Jobs are being posted by providing proper information and than provided to intended users of interest 3	Pass

8.1.20 Unit Testing 20: Buy Content Screen

Testing Objective: To ensure the buy content screen is working correctly so that buyers are able to view the price of the uploaded content and can offer a new price for the content to the owner.

No.	Test case/Test script	Attribute value and	Expected result	Result
1	Verify the correct video is being shown for buying		The correct video is being shown to the user	Pass
2	Verify that buy button is working		The buy button is working for any particular video	Pass
3	Verify that offer another price button is working		The offer another price button is working for any particular video	Pass

8.2 Functional Testing

Following are the Functional Tests of News Wave.

8.2.1 Functional Testing 1: Profile Handling

Objective: To ensure that the user has logged in to the system after successfully creating an account.

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Enter Credentials	User Name, Email Address	Credentials written in the required field.	Credentials displayed on the respective fields.	Pass
2.	Set Password	Password > 8 characters	Password validated.	Successfully saved	Pass
3	Login	Button pressed	Directed to Home Page.	Home Page displayed	Pass
4	Forget Password	Password doesn't match	Forget Password page opens.	User successfully directed to forget password page.	Pass
5	Confirm Password	Old and new password entered.	Password changed	Password changed	Pass
6	Edit Profile	Update profile information.	Changes saved	Profile updated.	Pass
7	Sign Out	Logged in user.	Logs out of the	Successfully Logs out of the account.	Pass
8	Delete account	Clicks delete account button.	User account deleted.	Successfully deleted the account.	Pass

8.2.2 Functional Testing 2: Profile Handling

Objective: To ensure that the user has logged in to the system after successfully creating an account.

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Signing up with correct credentials.	Name: Mohsin Email: umurtaza@gmail.com Password: 1234	User gets registered successfully.	User gets registered successfully.	Pass
2.	Signing up again with the same credentials.	Name: Mohsin Email: umurtaza@gmail.com Password: 1234 Confirm Password: 1234	User gets an error message “User already exists”.	User gets an error message “ User already exists”.	Pass
3	Passwords don't match	Name: Mohsin Email: umurtaza@gmail.com Password: 1234 Confirm Password: 123	User gets an error message “Passwords don't match”	User gets an error message “Passwords don't match”	Pass
4	Signing up with invalid	Name: Mohsin	User gets a validation message “Enter a valid	User gets a validation message “Enter a valid	Pass

	email format	Email: umurtaza@gmail Password: 1234 Confirm Password: 123	email''	email''	
--	-----------------	--	---------	---------	--

8.2.3 Functional Testing 3: Login with different roles (News channel, user)

Objective: To ensure that the correct page with the correct navigation bar is loaded.

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Login as a users.	Username: mosin Password: 1234	User is redirected to the home screen.	User is redirected to the user homescreen	Pass
2	Login as News Channel	Username: Arynews	User is redirected to the News channel home screen.	User is redirected to newschannel homescreen.	Pass

8.2.4 Functional Testing 4: viewing, updating and deleting content through User

Objective: To ensure that the user level can view, edit and delete content through user

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Viewing data regarding content videos tags etc.	Navigating to home screen or profile Screen.	The required correct information is shown on the screen	The required correct information is shown on the screen	Pass
2.	Editing information shown on the content.	Clicking on the edit (three dots) and updating information.	The information Gets updated successfully.	The information gets updated successfully.	Pass

3.	Deleting uploaded content.	Clicking on the edit (three dots) and updating information.	The information Will be deleted successfully.	The information gets deleted successfully.	Pass
----	----------------------------	--	---	--	------

8.2.5 Functional Testing 5: video recording

Objective: To ensure that the user has access to recording video which is the main objective of our app.

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Video recording is working smoothly		Video is being recorded with pause and play option.	Video is being recorded with pause and play option.	Pass
2.	Teleprompter is working and user is able to add filters while recording		Video recording is allowing to add script and apply special filters	Video recording is allowing to add script and apply special filters	Pass
3.	Video recording is allowing camera switching while recording		Video is being recorded with the feature of front and back camera switch	Video is being recorded with the feature of front and back camera switch	Pass

8.2.6 Functional Testing 6: Upload Content

Objective: To ensure that the user is able to upload the recorded content on his profile and set a price for the content in order to get paid.

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	User is able to upload content	Video, description, price, audience	User is able to provide necessary information to upload the video and video is being uploaded	User is able to provide necessary information to upload the video and video is being uploaded	Pass
2.	User is able to set a price for his content	Price	User is able to set a price and payment method for his uploaded content	User is able to set a price and payment method for his uploaded content	Pass
3.	User is able to		User is able to decide	User is able to	Pass

	set the privacy of his uploaded content		the audience he wants to share the content with	decide the audience he wants to share the content with	
--	---	--	---	--	--

8.2.7 Functional Testing 7: Job posting

Objective: To ensure that the user and the news channels are able to post jobs and able to cover their favorite topics .

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	News channel and users are able to post jobs		News channel are able to post jobs and provide to intended audience	News channel are able to post jobs and provide to intended audience	Pass
2.	News channel are recommended with users who can cover their topic of interest		News channel are provided with list of potential users with their reviews and ratings	News channel are provided with list of potential users with their reviews and ratings	Pass
3.	Users able to get info of jobs posted by news channels and other users		Users will view posted jobs around their area	Users will view posted jobs around their area	Pass
4.	Users are able to apply to the posted jobs and get paid for it		Users are able to apply to the posted jobs and get paid for it	Users are able to apply to the posted jobs and get paid for it	Pass

8.2.8 Functional Testing 8: Payment and billing

Objective: To ensure that the user the user are able to set a price for their content and also get paid for it through different payment methods

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Viewing detailed information regarding payment.	Navigating to the order details page to view information.	The required and correct information is shown on the screen.	The required and correct information is shown on the screen.	Pass
2.	Completing	Clicking on the	The order gets	The order gets	Pass

	payment.	complete payment button.	completed successfully.	completed successfully.	
3	Cancelling payment.	Clicking on the cancel order button.	The order gets cancelled successfully.	The order gets cancelled successfully.	Pass

8.3 Integration Testing

Integration tests of news wave are as follow

8.3.1 Integration Testing 1: User

Testing Objective: To ensure the scheduling is being done correctly and the **interface** between module content management and video recording module is running correctly.

No.	Test case/Test script	Attribute and value	Expected result	Actual result	Result
1.	Viewing content videos	Navigating to home screen or profile Screen.	The required correct information is shown on the screen	The required correct information is shown on the screen	Pass
2.	Editing information shown on the content.	Clicking on the edit(three dots) and updating information.	The information Gets updated successfully.	The information gets updated successfully.	Pass
3.	Deleting uploaded content.	Clicking on the edit(three dots) and updating information.	The information Will be deleted successfully.	The information gets deleted successfully.	Pass
4.	upload content	Video, description, price, audience	User is able to provide necessary information to upload the video and video is being uploaded	User is able to provide necessary information to upload the video and	Pass

				video is being uploaded	
5.	Video recording is working smoothly		Video is being recorded with pause and play option.	Video is being recorded with pause and play option.	Pass
6.	Teleprompter is working and user is able to add filters while recording		Video recording is allowing to add script and apply special filters	Video recording is allowing to add script and apply special filters	Pass
7.	Video recording is allowing camera switching while recording		Video is being recorded with the feature of front and back camera switch	Video is being recorded with the feature of front and back camera switch	Pass

9. Conclusion

The ultimate goal of the "NEWS WAVE" application is to create a platform that enables users to contribute to the world of journalism by providing news channels with reliable and diverse news content in the form of images and videos. The application is designed with a modular architecture, which allows for easy maintenance and scalability. Overall, the "News Wave" app offers a unique opportunity for users to contribute to the world of journalism and for news channels to source reliable and diverse news content from a broad user base.