F29SO

STAGE 1: The Bid

Initial Report

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1. INTRODUCTION TO THE REPORT

1.1. Purpose

The involves initial project planning and simulating the process of making a bid for the group project as a part of the courses- F29SO and F29PD. It involves designing an application, keeping in mind the specifications listed by the client. The application (Mazaj) to be created is a mashup platform for the users to mashup pictures and videos. These could be shared on the platform for other users to view and mashup again. Users could collaborate via the chat and whiteboard interfaces and provide feedback on the posts.

In this report, we have listed down the functional and non-functional requirements and produced risk analysis, project decisions and plans and project costing. Mockups were designed for the application interface and usability was tested using a few questionnaires. These results were analyzed to decide on the interface design to implement.

1.2. Scope

The product being developed for this project is a collaborative content mash-up platform.

The website application being developed for this purpose consists of a collaborative environment that serves to bring diverse kinds of people together. It provides users with a safe and creative space to share original creative content, develop shared pieces of work and present media.

The Database(s) will hold:

1. Sensitive personal information about the users like demographic, login details, education, job, interests, and hobbies.
2. Content personalized feed and posts
3. External information relevant to users' needs and application development

Apart from providing a collaborative mashup platform for media content, the application also caters to a diverse community of artists, students, content creators and brand marketers that work together, and provides them with tools best suited for their needs. For this reason, the system will be developed and assessed keeping in mind the scalability and flexibility standards, and the requirements that need to be fulfilled.

1.3. Overview

The report is a bid for the project, and it consists of 5 sections consisting of the initial work required before we develop our application.

Requirements Specification

This section describes the user requirements for the collaborative, mashup application which users can use to create their own versions of the posts on the application and collaborate with other users while doing so. They can follow their favorite libraries and users and interact with the posts. Relevant Use Cases and Class Diagrams have been included too.

Risk Analysis

This section covers the probable risks we have identified that we could encounter during this project and how we plan to mitigate them

Project Decisions and Plans

This section gives insight into the decisions we have taken regarding the building of the application and its design. It also covers the distribution and durations of the various tasks.

Project Costing

This section covers the budget of the project and its breakdown. It also includes explanations for how the costs have been calculated and decided upon.

Usability Evaluation and Mock-Ups

This section describes the mock-up designs for the various interfaces of the application and the usability study conducted to finalize the application design.

2. REQUIREMENTS SPECIFICATION

We have been tasked to develop a social platform where people from all walks of life can come interact & collaborate on their respective interest. The main idea of task is to allow user to mix, match & edit their or others content posted on the platform. Creating a safe environment is a priority so user can share & mash up their content without any problem.

2.1. Assumptions And Dependencies
1. There will be availability of Internet via 3G, 4G, 5G or Wi-Fi.
2. The user of the site should be well acquainted with the English language.
3. The user should have a valid email address to register for the website.
4. Central server of the system must be able to handle all the incoming requests simultaneously.
5. The user has a basic knowledge of computers and the Internet.

2.2. Functional Requirements

Priorities

Symbol	Priority
🔴	High priority
🟡	Medium priority
🟢	Low priority

F-UR1	Registration
F-UR 1.1	🔴 **Register using email** The user must be able to sign up/create an account using an email address and password. The user should be sent an email to confirm their email address to finalize their registration.
F-UR 1.2	🟢 **Register using Google or Facebook** In case the user prefers, they must be able to create an account by logging into their Google account or Facebook account.
F-UR 1.3	🔴 **Register for any of the several types of accounts** Users must be able to register for a type of accounts as per their needs, the types being artist accounts, student accounts, content creator accounts, and brand marketer accounts.
F-UR 1.4	🔴 **Log in** Users who already have an account must be able to log in using the username and password they registered.
F-UR 1.5	🔴 **Log out** Users must be able to log out of their account on a given browser/app.
F-UR 1.6	🔴 **Delete Account** User accounts must be stored on the server until they actively decide to delete their account.

F-UR 1.7	🔴 Account Limit
	Only one account must be made per email address and no usernames should be repeated.
F-UR 1.8	🔴 Retrieve forgotten password
	Users must receive an email at their registered email address to reset their password if they have forgotten it.

F-UR 2	Profile information
F-UR 2.1	🟡 Add additional user information
	The user must be allowed to enter additional information in their profile bio like links to their personal websites.
F-UR 2.2	🟡 View posts
	The user must be able to view their posts in their profile.
F-UR 2.3	🟡 Delete posts
	The user must be able to delete any of their posts.
F-UR 2.4	🔴 Edit user information
	The user must be able to edit their personal information and login details.

F-UR 3	Application Functionality Requirements
F-UR 3.1	🔴 Upload content
	The app must allow users to upload content- pictures or videos.
F-UR 3.2	🔴 Create virtual collaborative environment
	The system must allow users to collaborate with others to create and post collaborative content. The virtual environment shall include a whiteboard, tools for editing of the content created and, at the very least, chat functionality.
F-UR 3.3	🔴 Access home page
	Users must be able to access their home page with posts of users and libraries they follow.
F-UR 3.4	🔴 Access content libraries
	Users must be able to access different content libraries and follow the libraries they prefer.
F-UR 3.5	🟡 Interact with users
	Users must be able to follow and search for other users, message other users on the platform, and share posts within the platform. The system should also allow mentioning/tagging users in posts. Furthermore, users should be able to block other users to prevent any interaction with them.
F-UR 3.6	🟢 Interact with content tags
	Users must be able to follow and search for content tags. The system should also allow mentioning content tags in posts.
F-UR 3.7	🔴 Support for licenses

	Appropriate licenses, particularly instances of Creative Commons, must be supported and respected to ensure contributed content is used as intended. The platform must include features that enable key pieces of information, like copyright details and watermarks, to be displayed visually in an appropriate form for different types of users.
F-UR 3.8	🔴 Editing posts before posting System must allow users to edit & snip shared content. The app must have simple features for modifying shared content in libraries, such as image/audio filters, splicing tools, and other options.
F-UR 3.9	🟡 Interact with posts Users must be able to like and comment under posts.
F-UR 3.10	🔴 Create mash ups of other posts Users must be able to create mash ups of other users' posts. A mash up includes editing another user's post by either cropping it, adding text, stickers, or filters to it.
F-UR 3.11	🔴 Report content Users must be able to report posts or accounts for having/posting explicit or illegal content. Users must be able to flag a copyright violation if content shared does not respect the copyright details or does not attribute the original poster/creator of the work.
F-UR 3.12	🟡 Access pages for additional application information Users must be able to access FAQ, privacy policy, and terms and conditions pages to for additional help using the application.

F-UR 4	Administration requirements
F-UR 4.1	🔴 Login as administrators The system must allow accounts with administration rights, called platform managers to login.
F-UR 4.2	🔴 Use moderation tools The system must allow "platform managers" to use included moderation tools to moderate content that is uploaded to or generated using the platform. The tools must allow "platform managers" to delete content, block users from accessing certain groups and take away posting privileges from violators either for a specific period (e.g., 1 day, 1 week, 2 weeks.) or indefinitely.
F-UR 4.3	🔴 View summary reports The system must generate summary reports for "platform managers" to view, concerning overall platform usage.

2.3. Non-Functional Requirements

NFR	Non-Functional Requirements
NFR 1	**Scalability** System must be able to handle many concurrent users.
NFR 2	**Speed** The application must be fast. It should not slow down with an increase in the number of users. Quick search in the database to create a better user experience.
NFR 3	**Secure password and storage of user credentials** • The password must be at least 8 characters, containing at least a small character and one capital, number, and a special character. • Password is stored as a hash value in database, ideally hashed using the SHA256 algorithm and a salt. • GDPR requirements must be met in storing user details.
NFR 4	**Intuitive user interface** User interface must be simple and clear to be understood by any user. This ensures that new users will be able to easily navigate the app.
NFR 5	**Availability** The system must always be available. It should be ensured that there should be minimum or no downtime to ensure better user experience.
NFR 6	**Testability** The application must be testable. This shall be achieved by creating accurate test environments and including internal logging to check what is going on during any test.
NFR 7	**Maintainability** The system must be developed in such a way that it is extensible. This will be to make it easy to implement new features requirements or to modify existing requirements.
NFR 8	**Responsive across all platforms** The solution must be tested and be fully responsive across all the common web browsers (e.g., Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge) and on all mobile and tablet devices (e.g., Android, iOS, or Windows), while providing good user experience.

2.4. Use Cases and Use Case Diagrams

Use Case 1
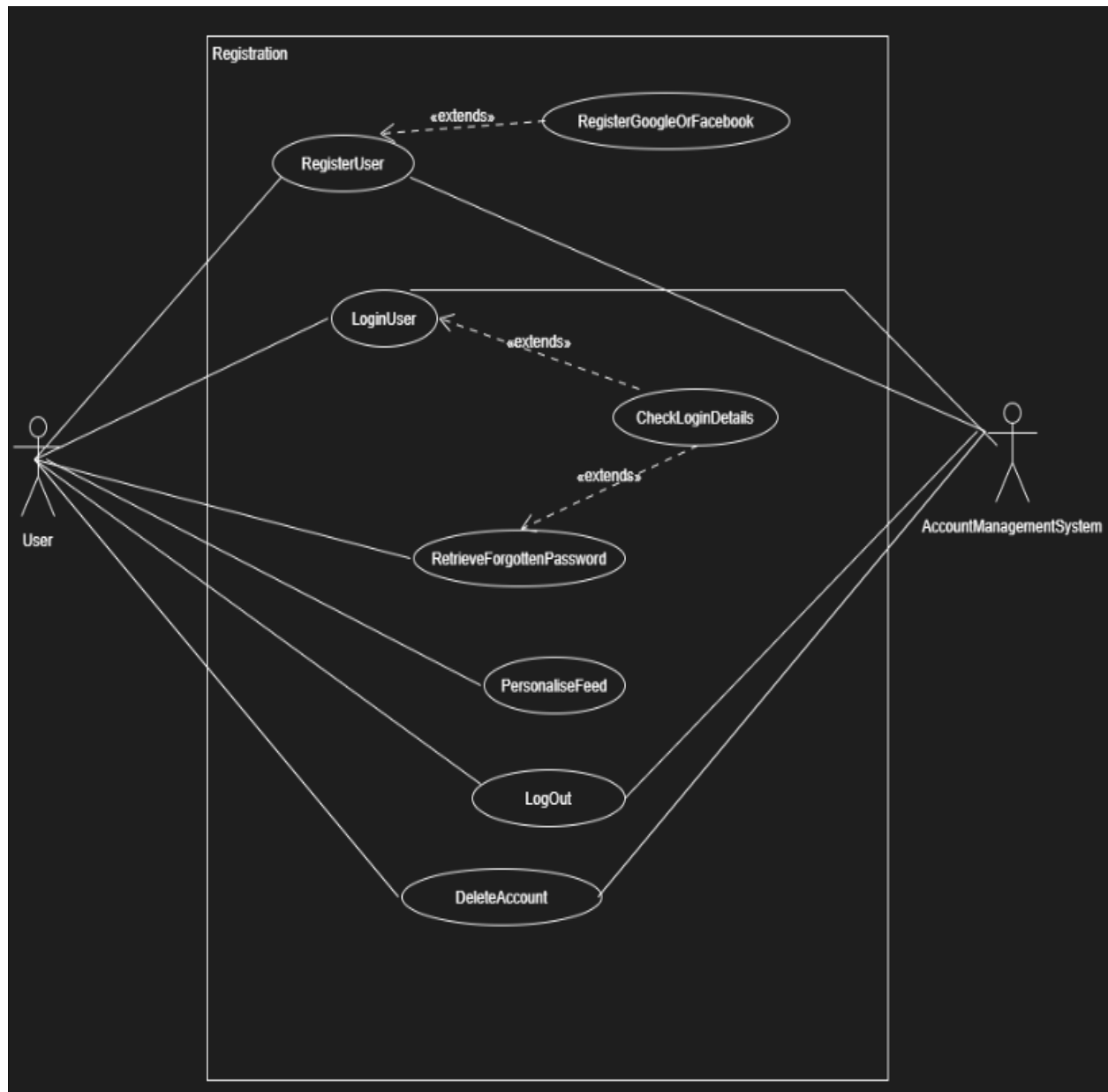
Use Case: RegisterUser
ID: *1*
Goal: *User successfully registered*
Primary actor: *User*
Secondary actor(s): *Account management system*
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly* *3. Basic knowledge of the Application*
Postconditions: *1. User has set up their email & password* *2. User details successfully saved in account manager database.*
Main flow: *1.User visits account register link.* *Extension point: RegisterwithGoogleOrFacebook* *2. User to enter their name and email.* *3. User to set their password.* *4. User to enter other personal details.* *5. Account successfully registered.*
Alternative flows: *2a. User enters invalid email address.* *1. Account management system reports error* *2. Return to step 2 of main flow.* *3a. User enters invalid password.* *1. Account management system reports error* *2. Return to step 3 of main flow.*

Use Case: LoginUser
ID: *2*
Goal: *User successfully logged into their account.*
Primary actor: *User*
Secondary actor(s): *Account management system*
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly* *3. Basic knowledge of the application*
Postconditions: *1. User successfully logged in.*

Main flow:

1. *User visits the login page.*
2. *User to enter the email address.*
3. *User to enter the password.*

Extension point : CheckLoginDetails

4. User successfully logged in & redirected to the main feed.

Alternative flows:

2a. Incorrect email address entered.
    1. System reports error.
    2. Return to step 2 main flow.

3a. Incorrect Password entered.
    1. System reports error.
    2. Return to step 3 main flow.

Use Case: PersonaliseFeed
ID: *3*
Goal: *Main feed successfully customized.*
Primary actor: *User*
Secondary actor(s): *Account management system*
Preconditions: *1. User has a stable internet connection.*   *2. Application is functioning correctly*   *3. Basic knowledge of the Application*
Postconditions: *1. User experiencing personalized feed.*
Main flow: *1. User navigates to the libraries page.*   *1. User select preferred libraries/categories.*   *2. User follows preferred libraries.*   *3. Feed successfully personalized.*

Alternative flows:
 	
 3a. Error in following library
      1. Feed remains unchanged
      2. Return to step 1 of main flow.

Use Case: LogOut
ID: *4*
Goal: *User logged out of their account.*
Primary actor: *User*
Secondary actor(s): *Account Management system*
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly* *3. Basic knowledge of the Application*
Postconditions: *1. User successfully logged out of their account.*
Main flow: *1. User to navigate to account settings.* *2. User to press on Log out button.* *Extension point: CheckLoginDetails* *3. User successfully logged out.*

Use Case: DeleteAccount
ID: *5*
Goal: *User account is to be deleted.*
Primary actor: *User*
Secondary actor(s): *Account Management system*
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly* *3. Basic knowledge of the Application*
Postconditions: *1. User account successfully deleted.*
Main flow: *1. Navigate to account settings.* *2. User to press delete account button.* *3. User account successfully removed.*

Use Case: RetrieveForgottenPassword
ID: *6*
Goal: *Reset the forgotten password*
Primary actor: *User*
Secondary actor(s): *Account management system*

Preconditions:	1. User has a stable internet connection.
	2. Application is functioning correctly
	3. Basic knowledge of the Application

Postconditions: 1. User Password Successfully reset.

Main flow:

1. User to navigate to the reset password button & press it.
2. User to receive an email to enter the new password.
Extension point: CheckLoginDetails
3. Password successfully setup.

Extension Use Case: RegisterWithGoogleOrFacebook
ID: *7*
Goal: *Register for application by Google or Facebook account*
Primary actor: *User*
Secondary actor(s): *Account management system*
Segment Preconditions: 1. *User has chosen to register using Google or Facebook account.*
Segment Postconditions: 1. *Successfully registered.*
Segment flow: *RegisterwithGoogleOrFacebook*

1. User to visit registration page.
2. User to select preferred affiliate account.
3. User to enter their email address.
4. User to enter their password.
5. User successfully Registered.

Extension Use Case: CheckLoginDetails
ID: *8*
Goal: *User login details verified*
Primary actor: *User*
Secondary actor(s): *Account management system*
Segment Preconditions: 1. *User enters the login details*
Segment Postconditions: 1. *Login details authenticated*
Segment flow: *CheckLoginDetails*

1. User is requested to enter their login details.
2. User entered details is verified by Account manager database.

Use Case 2
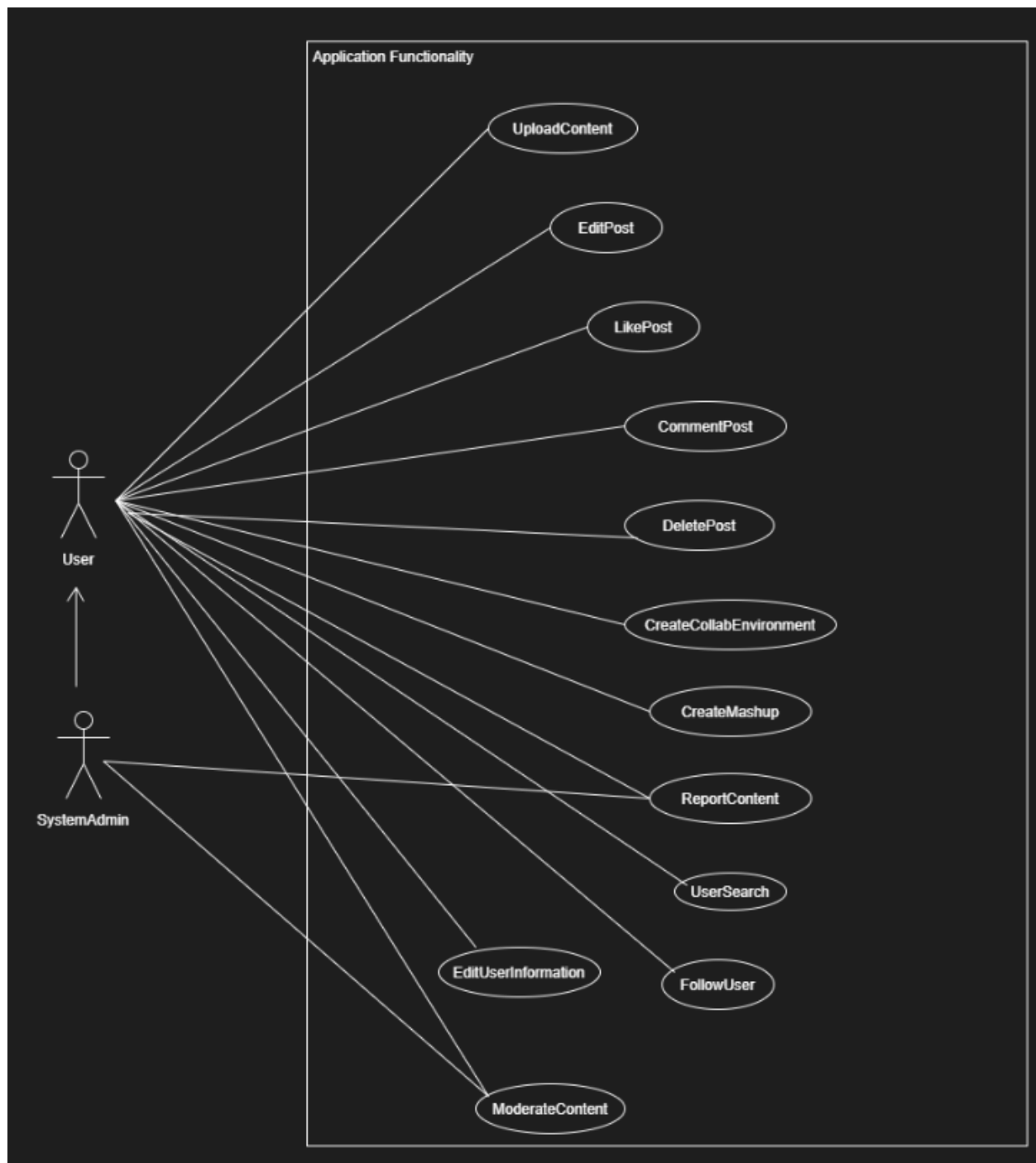
Use Case: UploadContent
ID: *1*
Goal: *Upload Content*
Primary actor: *User*
Secondary actor(s):
Preconditions: *1. User has a stable internet connection.*   *2. Application is functioning correctly.*   *3. Basic knowledge of the application.*   *4. User must have a account.*
Postconditions: *Successfully updated their content*
Main flow: *1. User login into their account*   *2. User clicks the upload content tab.*   *3. User edits content before uploading.*   *4. User uploads content to news feed.*

Use Case: EditPost
ID: *2*
Goal: *Modify post*
Primary actor: *User*
Secondary actor(s):
Preconditions: *1. User has a stable internet connection.*   *2. Application is functioning correctly.*   *3. Basic knowledge of the application.*   *4. User must have an account.*   *5. User have uploaded content before.*
Postconditions: *Successfully edited post*
Main flow: *1. User login into their account*   *2. User clicks the edit tab on the content in new feeds.*   *3. User edits content before uploading.*   *4. User uploads content to news feed.*

Use Case: LikePost
ID: *3*
Goal: *Like post*
Primary actor: *User*
Secondary actor(s):
Preconditions: *User must have an account. User must have a network connection.*
Postconditions: *User details must be updated.*
Main flow: *1. User logs into their account.* *2. User likes the post* *3. The system updates the like count of the post.*
Alternative flows: *1. There is no network connection.*   *1. The system updates the like count when there is a network connection. An appropriate message is sent to the user.*

Use Case: CommentPost
ID: *4*
Goal: *Comment on post*
Primary actor: *User*
Secondary actor(s):
Preconditions: *User must have an account. User must have a network connection.*
Postconditions: *User details must be updated.*
Main flow: *1. User logs into their account.* *2. User comments on the post* *3. The system updates the comment count of the post.*
Alternative flows: *1. There is no network connection.*   *1. The system updates the comment count when there is a network connection. An appropriate message is sent to the user.*

Use Case: DeletePost
ID: *5*
Goal: *delete post*
Primary actor: *User*
Secondary actor(s):
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly.* *3. Basic knowledge of the Application.* *4. User must have an account.* *5. User have uploaded content before*
Postconditions: *User has successfully deleted the post.*
Main flow: *1. User logs into their account.* *2. User deletes the post.* *3. The system decreases post count by one for the user.*

Use Case: CreateCollaborationEnvironment
ID: *6*
Goal: *Create collab environment*
Primary actor: *User*
Secondary actor(s):
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly.* *3. Basic knowledge of the Application.* *4. User must have an account.*
Postconditions: *User has successfully started virtual collaboration.*
Main flow: *1. User logs into their account.* *2. User navigates to create Collaboration virtual meeting tab & presses it.* *3. User provides usernames of people invited in the meeting.* *4. User choses to keep meeting private or public.* *5. User initiate the meeting & notification to the attendees have been sent.*

Use Case: CreateMashup
ID: *7*
Goal: *Create a combine content taken from other users.*
Primary actor: *User*
Secondary actor(s):
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly.* *3. Basic knowledge of the Application.* *4. User must have an account.*
Postconditions: *User has successfully created mashup content.*
Main flow: *1. User logs into their account.* *2. User navigates to create mashup content tab.* *3. User selects the content to be edited & for mash up.* *4. User posts it on their account.*

Use Case: ReportContent
ID: *8*
Goal: *User to report content & system admin reviews it takes action*
Primary actor: *User*
Secondary actor(s): *System admin*
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly.* *3. Basic knowledge of the Application.* *4. User must have an account.*
Postconditions: *User report content went through & under review*
Main flow: *1. User logs into their account.* *2. User finds an unsuitable content for the platform.* *3. User reports the content & system admin receives it.* *4. System admin reviews the content & takes suitable action.*

Use Case: UserSearch
ID: *9*
Goal: User finds the user profile it was looking for.
Primary actor: *User*
Secondary actor(s):

Preconditions: *1. User has a stable internet connection.*
                2. Application is functioning correctly.
                3. Basic knowledge of the Application.
                4. User must have an account.

Postconditions: *User profile successfully found.*
Main flow: *1. User logs into their account.* *2. User navigates to the search bar.* *3. User searches for the respective user profile.* *4. User finds the profile.*

Use Case: FollowUser
ID: *10*
Goal: *User to follow another user profile*
Primary actor: *User*
Secondary actor(s):

Preconditions: *1. User has a stable internet connection.*
                2. Application is functioning correctly.
                3. Basic knowledge of the Application.
                4. User must have an account.

Postconditions: *Successfully follow other user profile.*
Main flow: *1. User logs into their account.* *2. User searches or comes across another user profile.* *3. User clicks the follow button.* *4. User successfully follows that user profile.*

Use Case: ModerateContent
ID: *11*
Goal: *System admin to moderate application to keep it safe for users.*
Primary actor: *System admin*
Secondary actor(s):
Preconditions: *1. User has a stable internet connection.* *2. Application is functioning correctly.* *3. Basic knowledge of the Application.* *4. User must have an account.*
Postconditions: *System admin ensures application content appropriation.*
Main flow: *1. System admin logs into their account.* *2. System admin searches for inappropriate content.* *3. System admin finds suspected content then takes suitable action.*

Use Case: EditUserInformation
ID: *12*
Goal: *Edit account information*
Primary actor: *User*
Secondary actor(s):
Preconditions: *User must have an account.*
Postconditions: *User details must be updated.*
Main flow: *1. User logs into their account.* *2. User accesses the edit account information tab.* *3. The user edits the details of their account.* *4. The system updates the user's details.*
Alternative flows: *1. The login details are incorrect.* 　*1.The system prompts the user to input the correct details.* *2. There is another user with the same username.* 　*1. Inform user that the username is in use.* 　*2. Give the user another option for a username.*

2.5. Class Diagram

Class diagram to represent the application and its functions.

Chat
- -chatid: String
- -users: String
- -admin: String
- -chatMessages: ChatMessage

- +getChatid(): string
- +setUsers(string): void
- +getUsers(): string
- +addUsers(string): void
- +removeUsers(string): void
- +getAdmin(): string
- +setAdmin(string): void
- +setChatMessages(ChatMessages): void
- +getChatMessages(): ChatMessage

ChatMessage
- -ChatMessageid: string
- -ChatMessage: string

- +getChatMessageid(): string
- +setChatMessage(): string
- +getChatMessage(): string

User
- -userid: String
- -username: String
- -password: String
- -type: String
- -profiling: string
- -following: string
- -followers: string
- -blockedUser: string

- +getUserid(): string
- +setUsername(string): void
- +getUsername(): string
- +getPassword(): string
- +setPassword(string): void
- +setType(string): void
- +getType(): string
- +addFollowing(string): void
- +removeFollowing(string): void
- +getNumFollowing(): int
- +searchFollowing(string): user
- +addFollower(string): void
- +removeFollower(string): void
- +searchFollower(string): void
- +getNumFollower(): int
- +addBlockedFollowers(): int
- +removeBlockedFollower(): string

Collab
- -collabid: String
- -hostUser: String
- -users: String
- -contentid: String
- -isActive boolean

- +getCollabid(): string
- +setHostUser(string): void
- +getHostUser(): string
- +addUser(string): void
- +removeUser(string): void
- +getContentid(): string
- +setContentid(string): void
- +setActiveStatus(): boolean
- +setActiveStatus(boolean): void

Comments
- -commentid: String
- -userid: String
- -comment: String
- -reportCount: int
- -isFlagged boolean

- +getCommentid(): string
- +setUserid(string): void
- +getUserid(): string
- +setComment(string): void
- +getComment(): string
- +setReportCount(int): void
- +increaseReportCount(int): void
- +getReportCount(): int

Content
- -contentid: String
- -content: String
- -comments: String
- -views: int
- -likes: int
- -following: string
- -followers: string
- -blockedUser: string

- +getContentid(): string
- +getContent(string): void
- +setContent(): string
- +setComments(string): void
- +getComments(): string
- +removeComment(string): void
- +addComments(string): void
- +getTags(): string
- +setViews(int): void
- +getViews(): int
- +increaseViews(): int
- +setLikes(int): void
- +getLikes(): int
- +increaseLikes(): int
- +decreaseLikes(): int
- +setDislikes(int): void
- +getDislikes(): int
- +increaseDislikes(): int
- +decreaseDislikes(): int
- +setTags(string): void
- +getTags(): string
- +addTags(string): void
- +removeTags(string): void
- +setIsFlagged(boolean): void
- +getIsFlagged(): boolean
- +setReportCount(int): void
- +getReportCount(): int
- +increaseReportCount(): void

3. RISK ANALYSIS

### 3.1. Introduction and Risk Management

Risk analysis helps us determine the areas in our project that are vulnerable to potential scenarios that could have a damaging impact. This could include time management, resources, teamwork, project cost, project quality, etc. It could also lead to the failure of our project. This part of the document will cover most, if not all the probable risks and the steps that can and should be taken by the team to minimize the occurrence of the risk.

Risk management involves identifying risks and introducing plans that are effective enough to minimize their effect on a project.

The main personnel involved in risk management include: the project team, project manager and any stakeholders involved in the project.

The risk management process:
There are basic iterative steps that need to be taken to manage risks. The first step is to identify the risks, then analyzing them, risks are prioritized, their solutions are drawn up and finally risks are monitored.
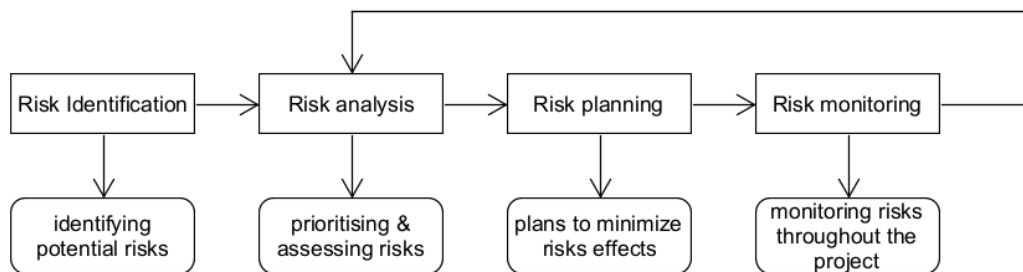
3.2. Risk Identification
Risk identification involves production of a table of potential risks, identifies their category and type.

<u>Categories of risks</u>

- **Project:** Risks affecting related resources or schedules.
- **Product:** Risks affecting the software's quality and performance.
- **Business:** Risks affecting the producing software's organization.

<u>Types of risks</u>

- **Technology:** Risks involved in the development process of the system arising from the software and hardware used.
- **People:** Risks involving the members of the system being developed.

- **Organization:** Risks involving the organizational background of the project.
- **Tools:** Risks involving the supporting tools used in the development of the system.
- **Requirements:** Risks involving the changes in client requirements and the management of the current system requirements.
- **Estimation:** Risks involving the resource and system properties estimations made by the project team or management.

Risk ID	Risk	Risk category	Risk type
r1	The project team loses a member	Project	People
r2	A team member falls ill/is unavailable for a period	Project	People
r3	Certain team members have different views on the production of the system	Project & Product	People
r4	Certain team members contribute less than required	Project & Product	People
r5	Set deadlines for parts of the project are not met	Project	People
r6	Project cost is incorrectly calculated	Project	Estimation
r7	Schedule for project production is not laid out correctly	Project & Product	Estimation
r8	Poor communication and interaction between team members	Project	People
r9	Risk management process is not thoroughly followed	Project & Product	People
r10	Code quality is extremely poor and inefficient	Product	People
r11	Team members lack technical skills to fix errors or optimize code	Project & Product	People
r12	The product does not meet the client's requirements	Product & Business	Requirements
r13	Changes in the requirements are needed	Project & Product	Requirements
r14	Project difficulty is underestimated	Project & Product	Estimation
r15	Technology or coding language becomes outdated	Business	Technology
r16	Completed work is not saved properly, lost, or corrupted	Project	Technology
r17	End users choose to not use the system	Business	Organizational
r18	Project goes bankrupt	Project	Organizational

3.3. Risk Analysis

Upon completing the identification of the risks, a thorough analysis of the risks is done. Risks are prioritized according to their probability and effect or impact on the project.

Levels of probability: Low < Medium < High
Levels of impact: Insignificant < Tolerable < Serious

Symbol	Priority
🔴	High priority
🟡	Medium priority
🟢	Low priority

Risk ID	Risk	Probability	Impact
r1	🟡 The project team loses a member	Low	Tolerable
r2	🟢 A team member falls ill/is unavailable for a period of time	Medium	Insignificant
r3	🔴 Certain team members have different views on the production of the system	Medium	Serious
r4	🟡 Certain team members contribute less than required	Medium	Tolerable
r5	🔴 Set deadlines for parts of the project are not met	Medium	Serious
r6	🔴 Project cost is incorrectly calculated	High	Serious
r7	🔴 Schedule for project production is not laid out correctly	Low	Serious
r8	🟡 Poor communication and interaction between team members	Low	Tolerable
r9	🟡 Risk management process is not thoroughly followed	Low	Serious
r10	🟡 Code quality is extremely poor and inefficient	Low	Serious
r11	🔴 Team members lack technical skills to fix errors or optimize code	Medium	Serious
r12	🔴 The product does not meet the client's requirements	Low	Serious
r13	🔴 Changes in the requirements are needed	Medium	Tolerable
r14	🟢 Project difficulty is underestimated	Low	Tolerable
r15	🟢 Technology or coding language becomes outdated	Low	Insignificant
r16	🔴 Completed work is not saved properly, lost, or corrupted	Low	Serious

r17	⦿ End users choose to not use the system	Medium	Serious
r18	● Project goes bankrupt	Low	Serious

3.4.   Risk Planning

Each risk is analyzed properly, and suitable strategies are developed to mitigate them. The following three types of strategies are used:

- **Avoidance strategies:** Reduces the probability of the occurrence of the risk.
- **Minimization strategies:** Reduces the impact of the risk on the project.
- **Contingency plans:** Plans to deal with the risks that arise.

<u>Risk planning for our identified risks:</u>

- **r1: The project teams loses a member**
  - o **Avoidance:** Make sure all members of the team are satisfied with their role, the requirements of the project and the overall direction in which the project is heading.
  - o **Minimization:** Have regular meetings to know what each member of the team is working on, this way all the members have an idea of each other's responsibilities and can provide help when needed.
  - o **Contingency:** In the event of a member leaving, divide their responsibilities of the project among the other team members equally so that everyone has an equal amount of work.

- **r2: A team member falls ill/is unavailable for a period of time**
  - o **Minimization:** Make sure more than one member is working on their area of work, so at least one other member is aware of the direction of production in that category.
  - o **Contingency:** If the responsibility of the member is significant, other members of the team will divide the work equally among themselves. If it is not as significant, other members working in the same area can cover up or the work can be left for the member to come back and complete.

- **r3: Certain team members have different views on the production of the system**
  - o **Avoidance/Minimization:** Hold regular meetings related to project requirements. Take in everyone's views and opinions and resolve conflicts.
  - o **Contingency:** Involving the project manager when a conflict between the team members arises is the best way to solve the issue. The project manager will provide the most suitable direction to proceed in.

- **r4: Certain team members contribute less than required**
  - o **Avoidance:** During meetings, ask team members for their current progress with the project.
  - o **Minimization:** Help the team members that are lacking to get back on track, assign more than one member per project area.

- o **Contingency:** As there is more than one member working on certain areas of the project, the other team member(s) can cover up the work for them. But the member should be helped to get back on track to avoid this happening again.

- **r5: Set deadlines for parts of the project are not met**
  - o **Avoidance:** During meetings, ask team members for their current progress with the project.
  - o **Minimization:** Make sure each team member is on track with their progress in the project.
  - o **Contingency:** Involve the project manager to come up with a new project plan and set realistic deadlines.

- **r6: Project cost is incorrectly calculated**
  - o **Avoidance/Minimization:** Allocate more cost than required so in the case of an emergency, the project team has a backup.
  - o **Contingency:** In case of this risk arising, use the backup amount and try to reduce the cost in less key areas and add more to the significant ones.

- **r7: Schedule for project production is not laid out correctly**
  - o **Avoidance/Minimization:** While planning the layout of the schedule, allocate extra time to avoid stress and improve time management/production quality.
  - o **Contingency:** Incase the schedule is too hectic or unrealistic, involve the project manager to come up with a better schedule and reassess the progress.

- **r8: Poor communication and interaction between team members**
  - o **Avoidance:** Hold regular meetings to discuss the current ongoing requirements and their progress.
  - o **Minimization:** The project leader and manager should make sure all the members are interacting and stating their opinions.
  - o **Contingency:** Involve the project manager and have a thorough meeting discussing all the requirements, current progress, etc.

- **r9: Risk management process is not thoroughly followed**
  - o **Avoidance/Minimization:** At regular intervals, the project team should look out for increasing probability of risks and report it to the leader or manager.
  - o **Contingency:** On increased number of risks arising, the project team should have a meeting with the project manager to find suitable solutions and reduce the impact of the risks as much as possible. Also, the team should follow the "contingency" section of the respective risks that have arisen.

- **r10: Code quality is extremely poor and inefficient**
  - o **Avoidance:** Each team member should be prepared and knowledgeable in the area of code they are working on. There should be frequent learning of the tools used throughout the production of the system.

- o **Minimization:** Team members should look at one another's code and find out ways to optimize and fix plausible errors for a better and more efficient code.
  - o **Contingency:** If the production of code ends up being poor, it is the technical manager's job to redirect the team to optimize their area of code and help them when needed

- **r11: Team members lack technical skills to fix errors or optimize code**
  - o **Avoidance/Minimization:** Each member is asked to prepare beforehand to be familiarized with the area of code they are working on. This is so the probability of errors arising is to the minimum and the code will be as efficient as possible. If the risks do arise, the team members should be able to fix it themselves.
  - o **Contingency:** When the code has many errors and the team members are unable to fix them, the technical manager must help the members fix and optimize the code.

- **r12: The product does not meet the client's requirements**
  - o **Avoidance/Minimization:** Have regular meetings to make sure that the team is following the right requirements and the team leader is notifying them when certain requirements are missing.
  - o **Contingency:** If the product does not meet the client's requirements, a meeting should be held with the project manager to find a work-around for this issue and reassess the areas of fault.

- **r13: Changes in the requirements are needed**
  - o **Avoidance/Minimization:** The initial requirements laid out, but the project team is double checked by the project manager to find out the faults and important missing points that need to be included.
  - o **Contingency:** If a team member(s) finds that there are some additional requirements needed, a meeting should be held with the project manager to confirm this and add the requirements along with their project cost.

- **r14: Project difficulty is underestimated**
  - o **Avoidance:** When the project plan is laid out, everything is double checked by the project manager to make sure the schedule is not too laid back and difficulty is not underestimated.
  - o **Minimization:** The project manager gives valuable input to fix the project difficulty and check the project plan.
  - o **Contingency:** If the difficulty turns out to be more than expected, a meeting should be held along with the manager to redistribute the work among members with more experience in the specific areas.

- **r15: Technology or coding language becomes outdated**
  - o **Avoidance/Minimization:** The project team will start out with the most up to date technology and coding languages with the newest versions to be up to date.
  - o **Contingency:** If the technology or language becomes outdated early on, the production should be shifted to a new platform.

- **r16: Completed work is not saved properly, lost, or corrupted**
    - o **Avoidance:** Team members are asked to keep backups of their own work as well as the whole code being produced.
    - o **Minimization:** Team members save their work on external as well as interval hard drives to minimize this risk from occurring.
    - o **Contingency:** The back up from the member with the latest work is used to recover the production of the project.

- **r17: End users choose to not use the system**
    - o **Avoidance:** The product will be designed according to the client's request and requirements. It will be made so that it is easy to use and straight to the point.
    - o **Minimization:** Frequent check-ups will be done to make sure they meet all the requirements.
    - o **Contingency:** A meeting will be held with the client to find out the areas of dissatisfaction with the final product. The team will redo those areas and re-present the work again.

- **r18: Project goes bankrupt**
    - o **Avoidance:** A proper project costing is laid out at the starting of production along with an extra budget on the side in case of emergencies.
    - o **Minimization:** In areas that require more, the budget is cut off from requirements that require a lesser amount and redistributed to those that require more.
    - o **Contingency:** In case of an emergency, the extra budget laid out on the side is used and the whole project costing is redistributed to avoid the impact as much as possible.

3.5.   Risk Monitoring

Risks are taken into consideration throughout the project to identify whether they have become more probable.

<u>Risk monitoring for our identified risks:</u>

- **r1: The project teams loses a member**
    - o Hold regular meetings, checking up on each member to make sure they are pleased with the project building environment. Discuss each members' part of the work involved and help one another to reduce stress.

- **r2: A team member falls ill/is unavailable for a period of time**
    - o Hold regular meetings, check the status of each member, and ask them to notify beforehand if they are unavailable so the work can be passed on to the other members or kept on hold.

- **r3: Certain team members have different views on the production of the system**
    - o During meetings, take every team member's idea and view into consideration before producing a concrete plan.

- **r4: Certain team members contribute less than required**
    - During meetings, checkup each team member's progress in their respective area.

- **r5: Set deadlines for parts of the project are not met**
    - Project leader should monitor each member's progress and keep them on track with the deadline.

- **r6: Project cost is incorrectly calculated**
    - After producing the initial project cost, double check it with the project manager. Also allocate as less as possible so in the case of an emergency, the team has a backup.

- **r7: Schedule for project production is not laid out correctly**
    - Make sure the project production is going according to plan, if it is not, the project manager and leader will produce a new schedule.

- **r8: Poor communication and interaction between team members**
    - Hold regular meetings and monitor the situation of each team member. Ask for all ideas and opinions.

- **r9: Risk management process is not thoroughly followed**
    - Each team member has the responsibility to look out for increasing probability of the risks specified. If the risk's probability has increased, it should be reported to the project leader.

- **r10: Code quality is extremely poor and inefficient**
    - The technical manager should regularly check up on the code being written by all team members and find ways to optimize it. They should also fix any errors arising throughout the coding process.

- **r11: Team members lack technical skills to fix errors or optimize code**
    - The technical manager should regularly check up on the team members and help them out. They should also fix any errors arising throughout the coding process.

- **r12: The product does not meet the client's requirements**
    - Hold regular meetings to make sure that the production is slowly but surely meeting all the client's requirements. The team leader will point out if otherwise.

- **r13: Changes in the requirements are needed**
    - Each member should look out for clues/parts of their code that are hinting missing or unrequired/insufficient requirements and report it to the team leader.

- **r14: Project difficulty is underestimated**

- o Hold regular meetings and check in with the team members to make sure they are not struggling to produce the required code.

- **r15: Technology or coding language becomes outdated**
    - o Make sure that the technology used, and coding software are regularly updated to the newest versions.

- **r16: Completed work is not saved properly, lost, or corrupted**
    - o Make sure all team members have their work backed up on internal and external hard drives. If there seems to be frequent bugs in the technology used, team members should be more aware.

- **r17: End users choose to not use the system**
    - o Project leader makes sure that at each stage, the client's requirements are met, and the code is not over-complicated.

- **r18: Project goes bankrupt**
    - o Incase project member(s) find out that more or less budget is required for specific areas, a meeting is held to re-plan the project costing.

4. PROJECT DECISIONS AND PLANS

4.1. Product Overview

The product we are developing is a collaborative content mash-up platform as a safe, creative space for people to share original media content, facilitate mixing-and-matching others' content, share their mash-up creations, and work with other people live during the creation and sharing processes. The Client has identified several potential users for such a platform:

- Artists (both hobby and professional)
- Students
- Content Creators
- Brand Marketers

Our product will be designed based on the interests and vision of our potential users, while also providing an appropriate content-moderated family-friendly platform to share their creations.

4.2. Technical Overview

Version Control

Git is the version control software we will be using to update and communicate our codes and track our app development.

Communication

The main platforms that will be used to communicate among the team members are WhatsApp and Microsoft Teams. Weekly virtual meetings are scheduled to keep track of tasks and duties and decide on future plans.

Prototyping and Mock-ups

Figma, a prototyping and wireframing tool, will be used to create a prototype of the web application for testing and implementing the UI/UX designs.

Platform Support

The project design will be responsive and be adaptable to different screen sizes and resolutions, including but not limited to, all the common web browsers (e.g., Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge) and on all mobile and tablet devices (e.g., Android, iOS, Linux, or Windows).

Front-end Development

The product or web application will be primarily developed through Flutter. Flutter is Google's UI toolkit for building compiled native applications, which uses the Dart language for its development. The Dart language syntax is similar to that of C and Java, which makes the coding easier to grasp and to optimize for UI.

Back-end Development

The back-end development of the product can be divided into the following categories:

- **Framework**: Django is a Python-based back-end web framework that helps develop fast and clean designs. This will be the main framework that will be used during the app development. This framework will be connected using REST APIs in Flutter.
- **Database**: The database that will be used for this project is MySQL.
- **Deployment**: Firebase provides sync data transfer between clients and using this application by Google, we will be creating and authenticating the web project deploying the application.

Testing

Based on the mock-up designs, usability tests will be carried out with potential users through questionnaires and the feedback collected will be used to determine future editions and progress. The software will also be assessed based on different criteria including but not limited to technical correctness, customer expectations and feedback, performance, and requirements. Additionally, requirements testing will be conducted based on usability, reliability, ease of use, etc. Through these assessments, the system would be tried for and tested at multiple levels against different standards.
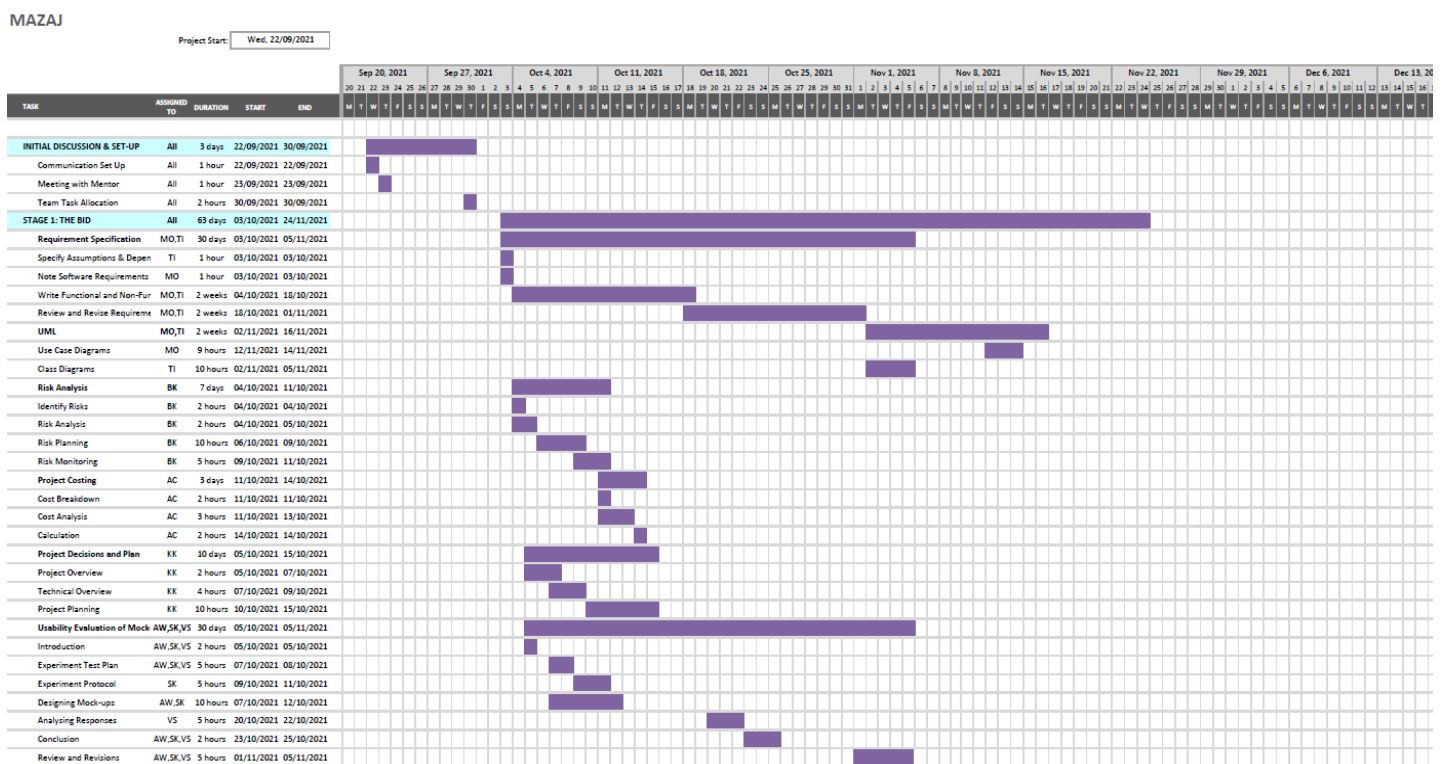
4.3. Team Roles and Contributions

Name	Role	Contribution
Shreya Kala	Organizational Manager, Developer	Usability report- plan and study, questionnaires, report compiling, Front-end development
Bhavika Kaliya	Technical Manager, Developer	Risk analysis, report compiling, Back-end development
Kulsoom Khan	Project Planner, Developer	Project planning, Front-end development, and Database management
Alister Charles	Developer	Project costing, Back-end development
Azzaam Waheed Nasir	Developer	Usability Plan and Protocol, Report Analysis, Front-end development
Mohammed Omar Khan	Reporter, Developer	Functional Requirements, Use Case Tables, Back-end Developer
Varun Senthil Kumar	Main/Lead Designer, Developer	Mockup Development and Designing
Taha Iqbal Khan	Liaison, Developer	UML Diagram & Requirements, Front-end developer

4.4. Project Plan

This project will be primarily taking a plan-driven or plan-based development approach to software engineering, while Agile development methods would be used in the second stage where our development process is broken down into sprints, and during the incremental delivery strategy where the software delivered to users would be tested and tried through customer feedback and evaluations.

In the first phase of development, the tasks are broken down into parts based on the report specifications and initial requirements. From the second phase onwards, each stage has been divided into sprints with a top-level design. The plans were also developed keeping in mind other coursework, examinations, and holidays. The following pictures depict the usage of Gantt charts for this purpose of planning.
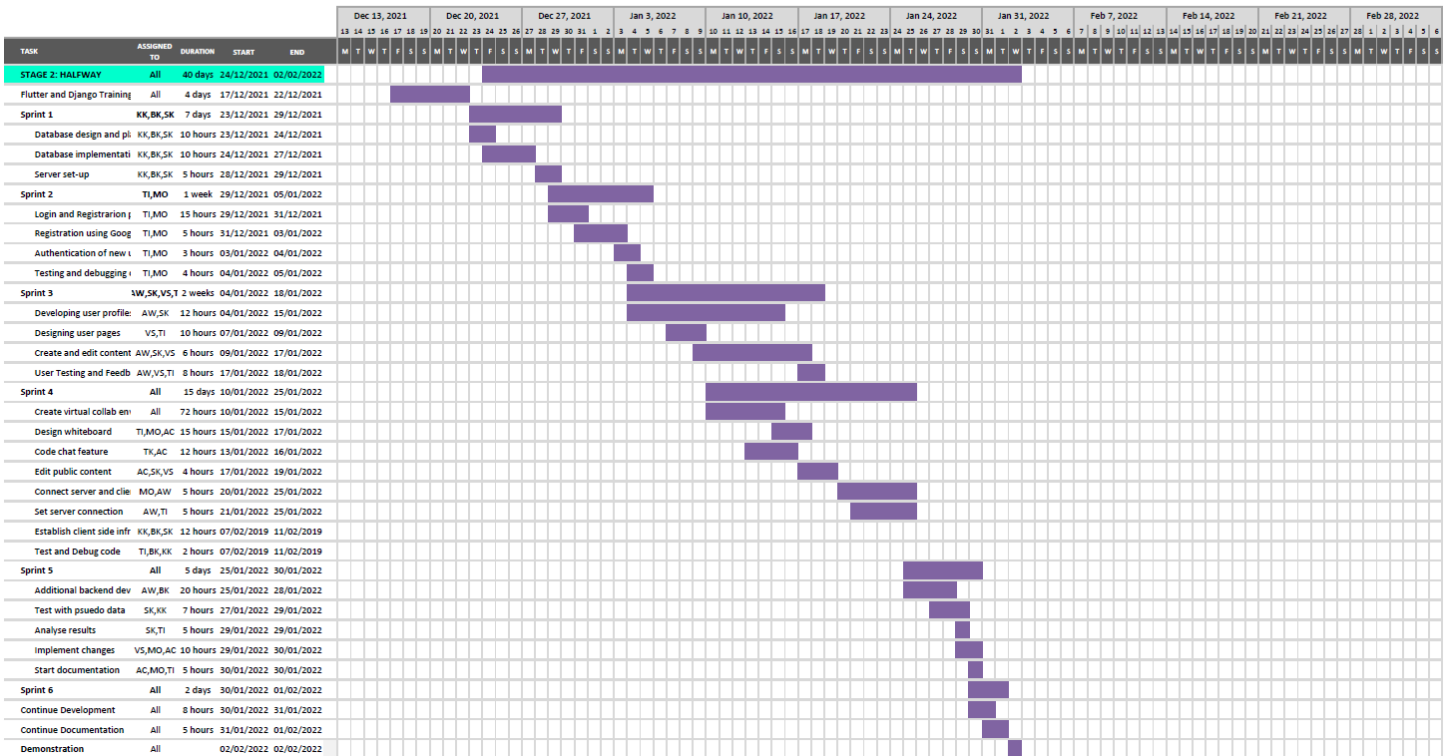
4.4.1. Stage 1: The Bid
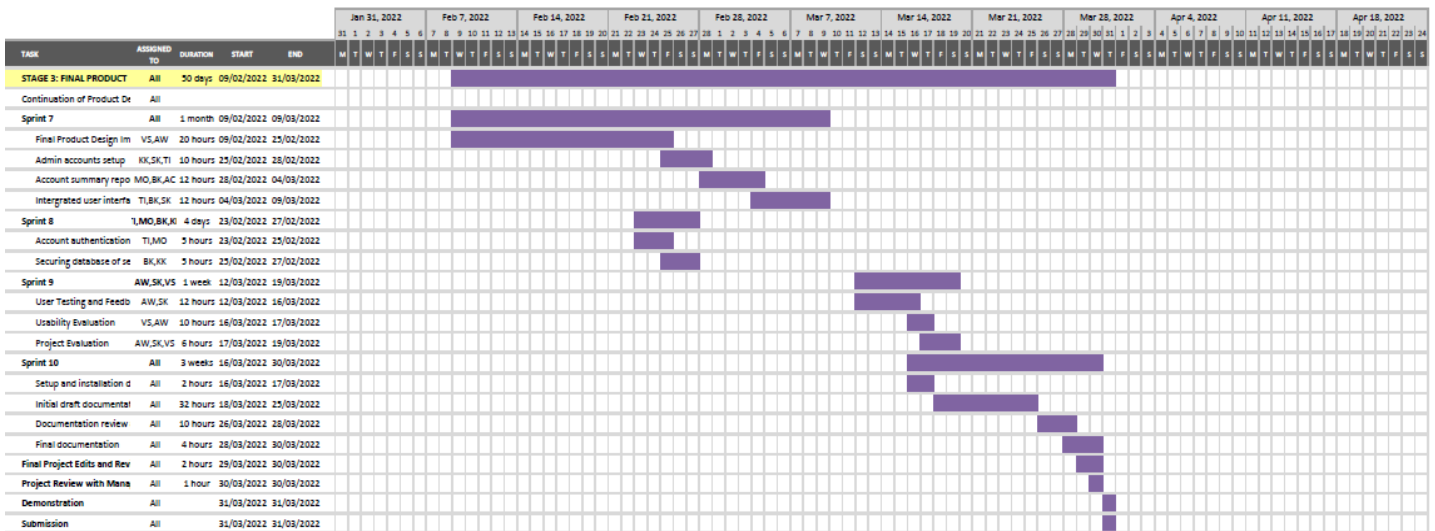
4.4.2. Stage 2: Halfway

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Project Start: Fri, 24/12/2021

TASK	ASSIGNED TO	DURATION	START	END
STAGE 2: HALFWAY	All	40 days	24/12/2021	02/02/2022
Flutter and Django Training	All	4 days	17/12/2021	22/12/2021
Sprint 1	KK,BK,SK	7 days	23/12/2021	29/12/2021
Database design and pl:	KK,BK,SK	10 hours	23/12/2021	24/12/2021
Database implementati	KK,BK,SK	10 hours	24/12/2021	27/12/2021
Server set-up	KK,BK,SK	5 hours	28/12/2021	29/12/2021
Sprint 2	TI,MO	1 week	29/12/2021	05/01/2022
Login and Registrarion p	TI,MO	15 hours	29/12/2021	31/12/2021
Registration using Goog	TI,MO	5 hours	31/12/2021	03/01/2022
Authentication of new u	TI,MO	3 hours	03/01/2022	04/01/2022
Testing and debugging	SK,TI,MO	4 hours	04/01/2022	05/01/2022
Sprint 3	AW,SK,VS,T	2 weeks	04/01/2022	18/01/2022
Developing user profile:	AW,SK	12 hours	04/01/2022	15/01/2022
Designing user pages	VS,TI	10 hours	07/01/2022	09/01/2022
Create and edit content	AW,SK,VS	6 hours	09/01/2022	17/01/2022
User Testing and Feedb	AW,VS,TI	8 hours	17/01/2022	18/01/2022
Sprint 4	All	15 days	10/01/2022	25/01/2022
Create virtual collab env	All	72 hours	10/01/2022	15/01/2022
Design whiteboard	TI,MO,AC	15 hours	15/01/2022	17/01/2022
Code chat feature	TK,AC	12 hours	13/01/2022	16/01/2022
Edit public content	AC,SK,VS	4 hours	17/01/2022	19/01/2022
Connect server and clie	MO,AW	5 hours	20/01/2022	25/01/2022
Set server connection	AW,TI	5 hours	21/01/2022	25/01/2022
Establish client side infr	KK,BK,SK	12 hours	07/02/2019	11/02/2019
Test and Debug code	TI,BK,KK	2 hours	07/02/2019	11/02/2019
Sprint 5	All	5 days	25/01/2022	30/01/2022
Additional backend dev	AW,BK	20 hours	25/01/2022	28/01/2022
Test with psuedo data	SK,KK	7 hours	27/01/2022	29/01/2022
Analyse results	SK,TI	5 hours	29/01/2022	29/01/2022
Implement changes	VS,MO,AC	10 hours	29/01/2022	30/01/2022
Start documentation	AC,MO,TI	5 hours	30/01/2022	30/01/2022
Sprint 6	All	2 days	30/01/2022	01/02/2022
Continue Development	All	8 hours	30/01/2022	31/01/2022
Continue Documentation	All	5 hours	31/01/2022	01/02/2022
Demonstration	All		02/02/2022	02/02/2022

4.4.3. Stage 3: Final Product

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Project Start: Wed, 09/02/2022

TASK	ASSIGNED TO	DURATION	START	END
STAGE 3: FINAL PRODUCT	All	50 days	09/02/2022	31/03/2022
Continuation of Product De	All			
Sprint 7	All	1 month	09/02/2022	09/03/2022
Final Product Design Im	VS,AW	20 hours	09/02/2022	25/02/2022
Admin accounts setup	KK,SK,TI	10 hours	25/02/2022	28/02/2022
Account summary repo	MO,BK,AC	12 hours	28/02/2022	04/03/2022
Intergrated user interfa	TI,BK,SK	12 hours	04/03/2022	09/03/2022
Sprint 8	TI,MO,BK,K	4 days	23/02/2022	27/02/2022
Account authentication	TI,MO	5 hours	23/02/2022	25/02/2022
Securing database of se	BK,KK	5 hours	25/02/2022	27/02/2022
Sprint 9	AW,SK,VS	1 week	12/03/2022	19/03/2022
User Testing and Feedb	AW,SK	12 hours	12/03/2022	16/03/2022
Usability Evaluation	VS,AW	10 hours	16/03/2022	17/03/2022
Project Evaluation	AW,SK,VS	6 hours	17/03/2022	19/03/2022
Sprint 10	All	3 weeks	16/03/2022	30/03/2022
Setup and installation d	All	2 hours	16/03/2022	17/03/2022
Initial draft documental	All	32 hours	18/03/2022	25/03/2022
Documentation review	All	10 hours	26/03/2022	28/03/2022
Final documentation	All	4 hours	28/03/2022	30/03/2022
Final Project Edits and Rev	All	2 hours	29/03/2022	30/03/2022
Project Review with Mana	All	1 hour	30/03/2022	30/03/2022
Demonstration	All		31/03/2022	31/03/2022
Submission	All		31/03/2022	31/03/2022

5. PROJECT COSTING

5.1. Introduction

5.1.1. Purpose
This section of the bid document outlines the expenditure for the project. It aims to explain the individual costs involved, along with the calculation. The total cost of the project is mentioned at the end of this section.
This document is intended to be read by:
Dr. Abrar Ullah (Client)
Dr. Hani Ragab (group manager/proxy customer)
Mazaj (developers)

5.1.2. Scope
The scope of this project is to develop a social media platform
The platform should allow users to interact and collaborate with each other. This includes features like mixing and matching media content shared by other users with your own media content.
The system will include backend (database and security) and front-end (UI) functionality. The cost-planning of the project considers the overall development of the system, i.e., backend and front-end.
The spectrum of the type of users includes Artists, Students, Content Creators, and Brand Marketers. The platform should be a safe space for these users to display their creativity and this is ensured through the moderation of the content posted.
The product should be accessible on mobile platforms as well as home computing systems such as laptops and desktop PCs (personal computers).

5.1.3. Overview
This document shows the expenditure breakdown, the various resources part of the cost, tables that calculate the expense, and the various sources used for reference.

5.2. Costing Breakdown Chart
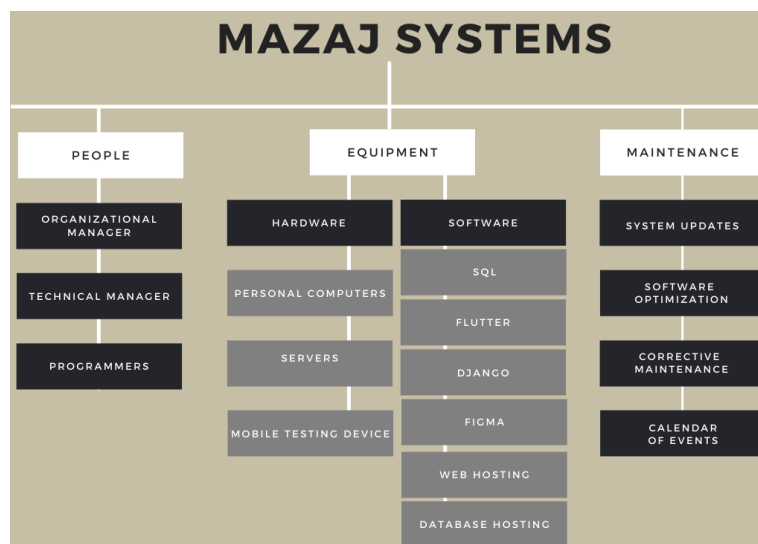
5.3.   Costing Analysis

The following section provides information on the various team roles and gives a description of other cost factors.

1. People

1.1 <u>Organizational Manager</u>
Ensures all planned tasks are allocated sensibly and follows up with team members to maintain project development pace.
1.2 <u>Technical Manager</u>
Overlooks application development. The technical manager oversees other programmers and will be responsible for reviewing all written code.
1.3 <u>Programmer</u>
The programmers are responsible for collaborating and writing code. They may be assigned certain tasks in the future like maintaining and improving systems.

2. Equipment

2.1 <u>Hardware</u>

2.1.1 Personal Computers
Used for coding the software. Each programmer will be in possession of one laptop which they will use throughout the duration of the project.
2.1.2 Servers
Third-party servers will be rented for hosting the application.
2.1.3 Mobile Testing Device
Used to test out the web and mobile application once software is ready for testing.

2.2. <u>Software</u>
2.2.1 SQL
Programming language used to create and manage databases for the system.
2.2.2 Flutter
Front-end programming language used for development of the graphical user interface of the web and mobile application.
2.2.3 Django DB
Back-end programming language used for development of the server-side architecture of the system.
2.2.4 Figma
Graphic editor used to design a mock-up of the application.
2.2.5 Web hosting
Web hosting service provider that will host the website.
2.2.6 Database hosting
Cloud service that will hold all user information.

3. Maintenance
3.1 <u>System updates</u>
Developers must frequently update the system with new features to ensure system is up to date with client's dynamic requirements.

3.2 <u>Software Optimization</u>

Developers will optimize the code even after the product is launched to enhance user experience and ensure code is easy to update and debug.

3.3 <u>Corrective Maintenance</u>

Developers must fix any technical issues in the code.

5.4. Calculations

All calculations are made with respect to the timeframe of the project and the daily workload assigned to all staff.

People Costs

The number of hours per person is fixed i.e., 150 hours of work.

The organizational manager and technical manager costs are considerably higher than those of the programmers in order to compensate for the additional responsibilities assigned to them.

Role	No. of hours	No. of Staff	Cost per hour	Wage per person	Total Cost
Organizational Manager	150	1	167 AED	25,050 AED	25,050
Technical Manager	150	1	167 AED	25,050 AED	25,050
Programmers	150	6	110 AED	16,500 AED	99,000
				Subtotal	149,100

Hardware Costs

The rented PCs will be used for the entirety of the project, i.e., 6 months. 8 PCs will be in use, one per staff member. The costs given below are the average rental costs in Dubai. The Mobile testing device will be a budget smartphone and will be used only for the initial testing phase.

Equipment	Units per month	No. of Months	Cost per Unit per month	Type	Total Cost
PCs	8	6	300 AED	Monthly Rental	14,400
Servers	1	1	300 AED	Monthly Rental	300
Mobile Testing Device	1	1	500 AED	One-time purchase	500
				Subtotal	15,200

Software Costs and Maintenance

The programming languages that we will use for the software development part of the project are free of cost. Figma will be used only for designing the mock-ups in the first month of development. Coding work will be divided among the staff. Web and Data Hosting will be used in the first month of product launch.

Equipment	Units per month	No. of Months	Cost per Unit	Type	Total Cost
SQL	4	4	Free	N/A	0
Flutter	4	4	Free	N/A	0
Django DB	4	4	Free	N/A	0
Figma	1	1	Free	N/A	0
Web hosting	1	1	33 AED	Monthly Rental	33
Database hosting	1	1	10 AED	Monthly Rental	10
Domain	1	12	36 AED	Yearly Rental	36
				Subtotal	79
Maintenance					
System Updates	1	6	Free*	N/A	0
Software Optimization	1	6	Free*	N/A	0
Corrective Maintenance	1	6	Free*	N/A	0
				Total Cost of System (People + Hardware + Software costs)	164,379 AED

Costing References
The following links were used for researching the costs that we have mentioned.

1. Management Occupations : Occupational Outlook Handbook : : U.S. Bureau of Labor Statistics (bls.gov)
2. Computer Programmer Salary in United Arab Emirates | PayScale
3. Laptop Rentals | 2020 Mac or PC Laptops - 100% Best Prices (rentipads.com)
4. Web Hosting | Lightning Fast Hosting & One Click Setup - GoDaddy AE
5. 13 Best "Free Database Hosting" (2021): MySQL & Cloud Services (hostingadvice.com)
6. How Much Does A Website Cost in Australia? | WebAlive

7. USABILITY EVALUATION AND MOCK-UPS

6.1. Introduction

6.1.1. About The Platform

Mazaj is a collaborative media platform for users of different ages and diverse backgrounds to collaborate, work and share ideas. It is also a content mash-up platform, users can mash-up original content of other users to create their own version of it. Registered users can access the application and upon registration, their details will be stored securely in our database. The users can follow libraries of categories they prefer and see those posts on their home page. Posts shared by users would be displayed on their profiles. Users can chat while they collaborate for an interactive experience.

This is the usability study to evaluate the mock-ups of the interfaces of our collaborative application to ensure our application is user-friendly and likable by all categories of users. Our application will consist of 6 different screens and the screenshots of the designs of each of these interfaces and an alternate design for one of the pages (home page) have been considered for evaluation by the users.

There will be both mobile and web-based applications which could be used, and we have made sure to consider designs such that the application would be rendered seamlessly on all platforms and the icons and buttons are self-explanatory. The application would support the major web browsers such as Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari to name a few and could work on major platforms such as- Android, iOS, and Microsoft devices.

6.1.2. Aims and Objective

The aim of our usability study is to test how usable the designs of each interface in our application are. The usability study is being conducted to implement only the design that the users prefer and has the potential to draw in our target consumers. Our objective is to design a user-friendly application with comprehensive, accessible, and easy-to-use interfaces.

We produced the designs to a small number of participants to evaluate our designs and rate the usability of each of them. The data collected is anonymized and protected and the participants participated with their consent and were free to withdraw at any point of time of the study. The participants were made to fill out an initial questionnaire asking for basic information about them and their background. They were also asked to fill out an exit questionnaire to conclude the study by giving opinions on both the designs and rating them. The report highlights the summary of the information of the participants, data collected, and suggestions given and how we have modified our application's design accordingly.

6.1.3. Overview

This part of the report is split into 5 parts- Experimental Test Plan, Experimental Protocol, Responses, Result Analysis, and Conclusion.

Experimental Test Plan

This section describes the usability study, the participants, study setup, the data collected and their types and more about the questionnaires used.

Experimental Protocol

This section gives a detailed view into the process that would be carried out during the study to assess the designs and provide valuable insights and suggestions and mentions the order of events in the survey.

Responses

This section contains the summary of the demographics, initial questions that they have answered before evaluating the designs, and the gist of the opinions of the participants on the designs and the website.

Result Analysis

This section contains the analysis of the data collected from the participants, summarizing the data to understand their opinions.

Conclusion

This section concludes this section of the report and highlights the suggestions we have considered, design changes we will be implementing and would summarize the findings of the study.

6.2.   Experiment Test Plan

Goal

The usability study's goal is to assess the attractiveness and usability of the mock-up designs for the interfaces of our application. The hope is that the results will provide insight into what can be improved, changed, or built upon in implementing a more captivating and user-friendly design. Such an outcome will be achieved by having the group of participants have varying levels of computer literacy.

Aims:

● Have participants test out prototype mock-ups of the front-end website pages.

● Utilize user-based feedback to collect qualitative and quantitative data.

● Ascertain issues with the website's design.

Participants

The participants of the study are all students from the same academic organization – Heriot-Watt University, Dubai. Six participants have been selected to be aged 18 or over and have varying levels of computer literacy and use skills to allow for ideal feedback on the usability of the web application's design.

Subjects will be picked from different years and courses to satisfy the requirement of them having varying levels of computer literacy and use skills. To individuals who give consent to participate, a questionnaire shall be provided to determine their level before being handed the designs. Each participant will then be provided with a questionnaire containing mock-up designs for each web page and will be prompted to answer questions related to that current design. A final questionnaire will be provided that will ask more general questions of the overall design and functionality of the website to the participants.

The subjects are expected to and are responsible for providing honest feedback when assessing the usability, functionality, and aesthetic of the website design.

Study Setup

The participants will be briefed about the application before they start to assess the designs. They are free to withdraw at any point of time and could ask the facilitators any questions during the study. Participants could participate from a location and time convenient for them. All opinions and suggestions could be given through the three different forms given to them which would be considered to improve the designs.

Task Scenarios

Question	Related Requirements
1	F-UR-1.1- Register using email F-UR-1.2- Register using Goggle or Facebook F-UR-1.3- Register for different types of accounts
2	F-UR-1.4- Log In F-UR-1.5- Log Out F-UR-4.1- Login as administrators
3	F-UR-3.1- Upload content F-UR-3.3- Access home page
4	F-UR-3.4- Access content libraries
5	F-UR-3.2- Create virtual collaborative environment F-UR-3.10- Create mashups of other posts
6	F-UR-2.1- Add additional user information F-UR-2.2- View Posts F-UR-2.3- Delete Posts
7	F-UR-1.8- Retrieve forgotten password

The aim of the project is to test the designs for our application Mazaj. Task scenarios are the subjects filling up the analyzing mock-ups questionnaire along with the initial and exit questionnaires to fulfill our aim of designing a user-friendly application. The scenario will be considered 'complete' when the subject indicates that the task requirements have been met, or when the subject has received enough help to consider the completion unsuccessful. The investigator should also attempt to take note of the subject's path for completing a task; recurring deviations from the simplest path (success-critical or not) could indicate flawed design. Critical errors would not to be resolved immediately as they could result in incorrect outcomes.

Subjective, qualitative data is collected in the form of feedback in the main questionnaire and the exit questionnaires along with questions related to other metrics to be collected.

Task scenarios will be assigned one of the following three values to observe the user's performance in the scenarios: -

- 0- Subject was unsuccessful in completing the task, 1-Subject could complete the task only with assistance, 2-Subject could successfully complete the task without any assistance.

Metrics

Metrics have been selected to collect from the participants to aid us in understanding their views on the designs and to quantitatively assess the responses.

- The participants can rate the various aspects of the application which would be subjective, quantitative Likert data.
- The time taken for analyzing the mock-ups will also be considered to analyze if any of the designs are not indicative enough.

- The success rate of completion of the tasks would be considered which, if is below a threshold, would mean a problem exists with that design and would need to be reconsidered.

Questions

Before analyzing the mock-ups, the participants will give us their opinions on what they believe is the most important feature for social media applications, as well as any features they would like the collaborative platforms to have.

While analyzing the mock-ups, we will be collecting a variety of qualitative data from the participants. For each design, we will gather their impressions on the designs and whether it is understandable. Furthermore, we would be gathering their opinions on any fields that were included that are not necessary, and any additional details or fields they believe should be included within the design of the mock-ups.

After the participants have gone through the mock-ups, they will be asked their overall impressions of the website using a final exit questionnaire. Additionally, some final qualitative data is collected where we gather what the participants liked and disliked most, and for any recommendations/suggestions on what can be changed and/or added for the entire website.

Questionnaires and Surveys

Three questionnaires have been given to the participants- one before the study, after the consent form is filled, one for analyzing the designs and one after the study for the participants to let out their views on the designs and answer a few questions that would help us decide on a design for our application.

The initial questionnaire will gather general information about the subject, their experience with websites and social media to determine their level of computer literacy and use skills, and suggestions for collaborative platforms.

The questionnaire for analyzing the mock-ups will prompt the subject to provide their opinions on the current page mock-up design, i.e., what they like, dislike and what could be changed.

The exit questionnaire will collect the subject's opinions on the overall website design, their favorite and most disliked aspects of the design, and their ease of navigation.

6.3. Experimental Protocol

Notes for facilitator
Kindly send an email to each of the participants and include both the aim and introduction that has been provided below to help them understand what to do to allow for the best possible and most desirable answers.

Aim: The aim of this session is to present you with the mock-up designs for the website that we are working on; a collaborative media and content mash-up platform. The app is in the early development stage and your input shall be used to determine the best and most efficient design for it.

Introduction: Several designs for different aspects of the website have been provided; login, home, profile, collaboration environment, library, and registration pages. As you progress through the questionnaire, you must provide your input on how you like each design of the pages and what you do not. Doing so will allow us to choose between the designs or even produce a new one that includes aspects of both mock-ups.

Before continuing to the questionnaires, kindly fill in the consent form that has been provided below. Please mention the ID provided in all the forms. Once this is filled, your input within the questionnaires will be considered for our data analysis.
(Consent Form Link)

The initial questionnaire is for gathering more information about yourself and understanding your usage of the technology at hand. This type of data will allow us to better understand why the answers that you will have provided in the mock-up and exit questionnaires are the way they are. Understanding our demographic is crucial and thus this form will aid in achieving that.
(First questionnaire link)

Now, we will provide the questionnaire containing all the mock-up designs for the website. Each page has its own set of questions. You will go through all designs sequentially and are required to answer truthfully after taking some time to assess the current page's design.
(Mock-up analyzing link)

Finally, we will now provide the exit questionnaire. This form contains general questions about your opinions on the overall application. We kindly request that you answer the questions truthfully and provide us with as much insight as possible. Be sure to take your time to answer each question to come to a solid conclusion as to which one you prefer.
(Second questionnaire link)

We thank you for your participation and greatly appreciate your time and effort.

6.4.   Responses and Findings

6.4.1. Participants Demographics and Background

The tables contain the number of responses received against each option.

<u>Tables summarizing the basic information of the subjects</u>

As participants should be from the university, they all come under the age category 18-24

Gender	Number
Female	5
Male	2

Age	Number
19	5
20	2

Occupation	Number
Student	7

<u>Tables summarizing their background</u>

How would you mainly classify yourself?	Number
Student	5
Artist (hobby or professional)	1
Only Content Consumer	1

How would you rate your experience with computers?	Number
Poor	0
Fair	0
Good	0
Very Good	3
Excellent	4

Question/Frequency	Daily	Weekly	Monthly	Seasonal	Yearly	Never
How often do you surf the internet?	7	0	0	0	0	0
How often do you use social media?	7	0	0	0	0	0
How often do you use online collaborative platforms?	2	3	1	1	0	0

Participants were asked what they feel the most important aspect in a social media application is.
Responses were-
User-friendly design, connecting and interacting with other users,
sharing posts, getting inspired by other creators.

Participants were asked the features they would like collaborative platforms to have.
Responses were-
"Real-time collaboration", "Good chatting options",
"Ability to collaborate real-time on the same piece of work", "Drawing to express"

6.4.2. Usability Results

Participants were given a questionnaire to analyze the mockups and give their opinion on each of them. Please refer to the mockup screenshots attached in the Appendix. Some of the responses have been quoted for credibility. All the tasks were completed successfully without any assistance (code- 2). The average time taken to fill the questionnaire is 9 minutes but most took 5 minutes.

1. Registration Page

   The screenshot of the mockup of the registration page for new users to register to the platform, create an account by filling out necessary details has been attached.

   All participants could understand the purpose of this page properly without any doubt. They were questioned about the field being asked for account creation. Most felt all fields are necessary to be asked while one felt the state need not be asked and one felt the type of users need not be asked.

   Everyone expressed that no more user details might be required but there was a suggestion to add a confirm password field to make sure the user can confirm if the password written is right.

   > *"The type of user field when creating an account could be avoided"*
   >
   > *"This seems enough without being too invasive"*
   > *"Maybe a re-enter password unless the users have the option to see the password when they enter it in"*

2. Login Page

   The screenshot of the mockup of the login pages have been attached; one for users with an existing account and another for administrators, to login to access the application. The participants were asked if the page was clear to understand, if they could understand the purpose of it. they were also asked if the register option for users without an existing account was easy to locate and indicative enough. All of them responded affirmatively for both questions.

3. Home Page

   The screenshot of the mockup of the home page along with that of the search bar have been attached.
   The overall impressions on the page layout seemed positive. It was described as simple, clear, neat, but too plain and minimalistic.
   When asked to guess the use of the icons in the navigation bar, the home page, search, upload post, and profile icons were guessed rightly by all but all except one failed to rightly interpret the logo for collaboration environment while two of them could not guess the icons for the content libraries.
   All of them rightly interpreted the purpose of the search bar screenshot and understood that searches could be of users, libraries, and tags.

   > *"Looks a bit plain, but very neat"*
   > *"Clean, too minimalist"*
   > *"The layout is simple and clear."*
   >
   > *"Numbered from the left of the screen: 1: Home Button, 2: Search Button (for content), 3: Post new content, 4: Access Video content, 5: Access Library of downloaded content?, 6: user profile page"*

4. <u>Library Page</u>

Screenshot of the content libraries page which would display posts of a specific category have been added. All participants could clearly understand the purpose of the page. They were asked to express their opinion on the layout of the screen to which there were mixed opinions.

The simple grid style was appreciated but some felt it was basic and could be made more colourful.

"Could be better, seems basic"
"Layout is nice, could be more colourful"
"Simple and Clean."
"Good grid style"

5. <u>Collaboration and Mashup Environment</u>

The mockup of the collaboration and mashup environment has been included for evaluation. Users can the chat with other users to collaborate on any work and can mashup pictures or videos by editing them using the provided tools.

The subjects were asked to describe the screen, and everyone rightly understood its purpose- collaboration with a whiteboard to draw and ability to add images and edit. While a generalized term- content was used, there was no mention of videos when discussing the editing feature. They were then asked to let us know what each icon/button is for, and they have all rightly answered- upload media, tools for editing and leave collaboration room and its associated chat.

Lastly, for this screen, they were asked to discuss and rate the chatting interface. It was described as neat and clear by majority but there were suggestions by others to add a visual separation (like different colours for each user) between messages. Three of them have also given numerical ratings (50%, 60%, 70%) which average to a 60%.

"Looks like a screen where the users can collaborate on content with other users."
"Adding more images and editing features like brightness"

"Whiteboard to write on, has a button to add images/videos, option to edit, option to leave room and chatting feature."
"Add media, edit, leave meet"

"It's nice, but maybe use alternate colors to show different users"
"it's clear and good"

6. <u>Profile Page</u>

Screenshot of the mockup design of the profile page for a user has been added. The participants were requested to express their impressions on the layout of the page. Most of them replied that the layout is nice, clear, provides summarized information and easy to understand. The settings bar was understood rightly, and it was said to be neatly put with adequate options.

"Layout is very clear and easy to understand."
"Provides all necessary summarized information"

"Menu with options to log out, view activity, delete account etc."
"It's good - includes most main functions"

7. <u>Forgot Password Page</u>

The mockup design of the forgot password page was added the purpose of which everyone could easily understand.

6.5. Result Analysis
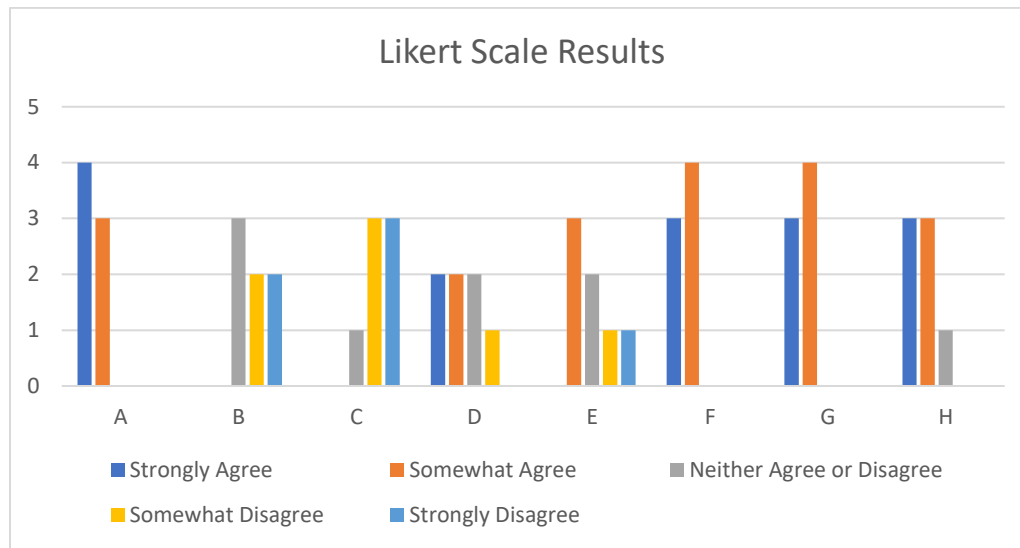
Questions/Options	Strongly Agree	Somewhat Agree	Neither Agree or Disagree	Somewhat Disagree	Strongly Disagree
A - Easy to use	4	3	0	0	0
B - Design is overwhelming	0	0	3	2	2
C - Inconsistency in the system	0	0	1	3	3
D - Like to use the app frequently	2	2	2	1	0
E - App is visually appealing	0	3	2	1	1
F - Easy to navigate	3	4	0	0	0
G - Various functions well integrated	3	4	0	0	0
H - Most people would learn to use the system quickly	3	3	1	0	0

As can be seen by the table and graph, the overall results from the exit questionnaire were positive in many aspects. Participants found the application to be simple to use, easy to navigate and agreed that various functions were well integrated. From this, we can deduce that the overall functionality and layout of the website is in a good place.

One glaring issue was ruled by majority however, and that was the aesthetic and design of the website. Many of the participants were on the side that disliked the design. It is unappealing to majority and thus must be altered to be more pleasing to eye.

<u>Favourite Aspect</u>
Subjects reported the whiteboard collaborative feature, Ease of access to various pages and the spacing and layout of the icons to be their favourite features. Even though the design was down marked, it was appreciated by one as *"The design is very minimalistic and satisfying"*.

<u>Disliked Aspect</u>
As inferred earlier, subjects reported the clean white design and colour theme as something they don't prefer. The similarity between all pages was also discouraged.

The overall opinion on the application and its design was commented as being simple, easy to use but again, the basic colour theme was pointed out. Suggestions were given to improve the colour theme and font style and add accent colours.

6.6. Conclusion

The usability test has highlighted a major improvement that needs to be made to the aesthetic design of our website. Although the results clearly indicated a high rating for the layout and functionality of the website, both the results from the qualitative and quantitative data proved that participants were not pleased with how the website looked. Since majority disliked the design, it can be concluded that this may push away several potential users simply because of how unappealing the overall aesthetic is for the website.

Due to the overall positive responses to the remaining aspects of the website, the layout and functionality will more or less remain the same. However, we are indefinitely considering doing a massive design overhaul to make the website more captivating. We would be considering better-indicative icons for the ones subjects had a difficulty understanding.

Participants provided several suggestions in the questionnaires for what they believe would be helpful in making the design more alluring. Majority of which were various color palette recommendations. Therefore, several different color palettes will be considered and tested to ensure the best design possible. All suggestions given will be considered during the development of the application.

7. APPENDIX

7.1. Changelog

Table with document history and changes made before submission.

S No.	Date	Document Version	Author(s)	Changes
1.	3/10/2021	Document Created	Kulsoom	N/A
2.	27/10/2021		Omar, Taha, Bhavika, Kulsoom, Shreya, Varun	Initial requirements, risks, project decisions, usability report introduction, questionnaires, registration page mockups added
3.	3/11/2021		Shreya, Omar, Azzaam	Table of contents, more functional requirements, usability test plan and test protocol added
4.	4/11/2021		Bhavika, Alister, Azzaam, Shreya, Varun	More on project costing and mockups added with minor edits in the other sections.
5.	5/11/2021		Shreya, Azzaam	Usability introduction added with edits and formatting done in protocol and test plan. Appendix with sample questionnaires added.
6.	7/11/2021		Kulsoom	Project decisions with team contributions added.
7.	11/11/2021		Omar, Bhavika, Kulsoom, Azzaam	Non-functional requirements added requirements formatted. More on risk analysis added and document reviewed.
8.	13/11/2021		Omar, Bhavika, Kulsoom, Alister, Shreya, Azzaam	Requirements reviewed, stage-1 Gantt chart added, risk analysis and more on project costing added. Usability report edited
9.	21/11/2021		Shreya, Varun	Report introduction and usability test plan modified, protocol edited, more mockups added.
10.	22/11/2021		Varun, Shreya, Taha	Mockups modified; UML diagrams added
11.	25/11/2021	Final Version	Alister, Azzaam, Kulsoom, Omar, Shreya, Taha	All sections completed and formatted.

7.2. Mock-Ups

7.2.1. Registration Page

7.2.2. Login Page

7.2.3. Homepage with search

Mazaj

Pete

Jack

Post

Art

Post

Cancel

Search for users, libraries, tags and more!

Suggested searches

#party

food

@mrbeast

7.2.4. Library Page

Art

| Post | Post | Post |
| Post | Post | Post |

7.2.5. Collaboration and mashup environment with chatting interface

@miit_mehta, @laxhn_shah, @abdul_bod, you

@miit_mehta :   Hey guys!

@laxhn_shxh :   Hi!

@miit_mehta :   Do you wanna do a collaboration

@abdul_bod :   Sure, why not?

@abdul_bod :   What do you have in mind?

Whiteboard for collab features

Editing options

Leave Room

Type a message here

7.2.6. Profile with settings overlay

Account Settings

Activity

Change Password

FAQ

Privacy Policy

Terms and Conditions

Log Out

723	865	142
Followers	Following	Posts

pete23

Pete J
Hey, I am an artist!

Your Post   Your Post   Your Post

Delete Account

About
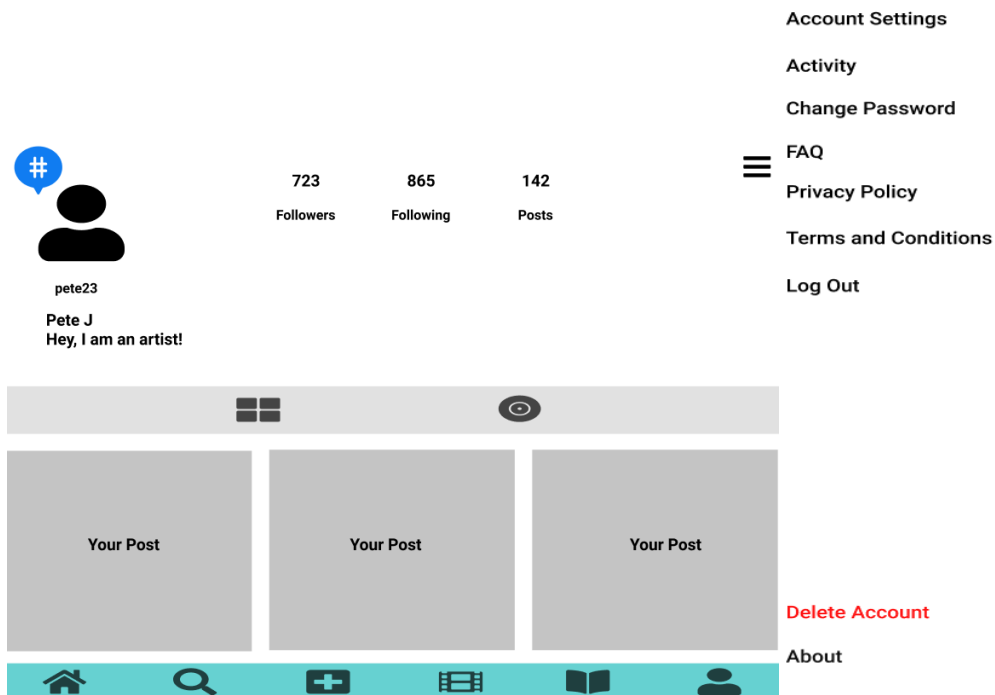
7.2.7. Forgot Password

Cancel

Forgot your password? We got you!
Enter your email below and follow the steps

Enter your email here

Send password recovery link

A recovery link to reset your password has been sent to your email.

Follow the steps given to reset your password successfully.

DONE

7.3.   Questionnaires

7.3.1. Consent Form **(Microsoft Forms Link:** Consent Form**)**

Consent Form

Collaborative Mashup Platform- Mazaj
Heriot-Watt University

Consent to Act as a Subject in an Experimental Study

Principal Investigators: Venkata Shreya Kala, Azzaam Waheed Nasir, Varun Senthil Kumar, Alister
Charles, Bhavika Kaliya, Kulsoom Khan, Mohammed Omar Khan, Taha Iqbal Khan

Description: The purpose of this study is to test understand how usable and user-friendly our application is. Mazaj is a collaborative mashup platform that users could use to collaborate on audio and visual projects and mash up those to create their own versions. We also aim to test how usable the two designs of our application are. For this study, we will require to know your name, age, gender and your opinions on computers, websites, and our mock-up designs. No other personal details will be required or recorded.

There are minimal risks for you to participate in this study. All personal information will be in a secure filing cabinet or in password-protected computer directories (kept in accordance with the provisions of the GDPR Data Protection Act). Your participation will not affect how well you do in your courses (if you are a student) or affect your relationship with the university in any way.

You are free to decline to participate in this study. Should you decide to participate, you are free to end your participation at any time. Such a decision by you will not adversely affect or alter your status with the university in any way.
You are also free to withdraw 3 days after the study (sk2003@hw.ac.uk or an2006@hw.ac.uk).
If you withdraw, your data will be removed and destroyed.

Voluntary consent: I certify that I have read the preceding and that I understand its contents. Any questions I have pertaining to the research have been and will be answered by the team. My signature (selection below in question 3) below means that I have freely agreed to participate in this study, and that I agree to the publication of the results for scientific purposes and to the distribution of the recordings and transcripts of the sessions for research purposes so long as my identity is not revealed.

_____

Investigator's Certification: I certify that I have explained to the individual the nature, purpose and potential benefits and risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature.

Inv. Initials
SK, AN, VK, AC, BK, KK, OK, TK

* Required

1. ID*

2. Date of signing the form*

3. Consent*

◉ Yes, I give consent to participate in the study.

7.3.2. Initial Questionnaire **(Microsoft Forms Link: Initial Questionnaire)**

Initial Questionnaire

Please fill in this questionnaire before evaluating the mock-ups. This form is for us to know more about you (the participant). If you have any questions, please contact us at sk2003@hw.ac.uk
or an2006@hw.ac.uk. You can opt out of the study at any point of time.

* Required

1.ID *

2.Age *

3.Gender *

4.Occupation *

5.How would you mainly classify yourself? *

○ Artist (hobby or professional)

○ Student

○ Content Creator (hobby or professional)

○ Brand Marketer (businesses or influencers)

○ Only Content Consumer

6.Please rate appropriately *

	Poor	Fair	Good	Very good	Excellent
How would you rate your experience with computers?	◯	◯	◯	◯	◯

7.Please select the appropriate option *

	Daily	Weekly	Monthly	Seasonal	Yearly	Never
How often do you surf the internet?	◯	◯	◯	◯	◯	◯
How often do you use social media?	◯	◯	◯	◯	◯	◯
How often do you use online collaborative platforms?	◯	◯	◯	◯	◯	◯

8.What is the most important aspect in a social media platform for you? (If you do not use social media, please write 'None') *

9.Any feature you would like a collaborative platform to have?

7.3.3. Analyzing the Mock-ups **(Microsoft Forms Link:** Analyzing Mock-ups**)**

Analyzing Mock-Ups

Please evaluate the mock-ups and answer the questions under each section. This form is for us to know your opinion on the mock-ups. If you have any questions, please contact us at sk2003@hw.ac.uk or an2006@hw.ac.uk. You can opt out of the study at any point of time. Thank you so much for your valuable time and effort!

Please give your elaborate feedback and suggestions in relevant the text boxes for each section.

Registration Pages

This is the registration page for new users to register to the platform, create an account by filling out necessary details.

1. ID

2. Is the purpose of the page clearly understandable?

3. Are there any fields that are unnecessary? If yes, please mention those.

4. Are there any other details of the users we should be taking?

Login Page

These are the login pages; one for users with an existing account and another for administrators, to login to access the application.

Standard Login   **Admin Login**
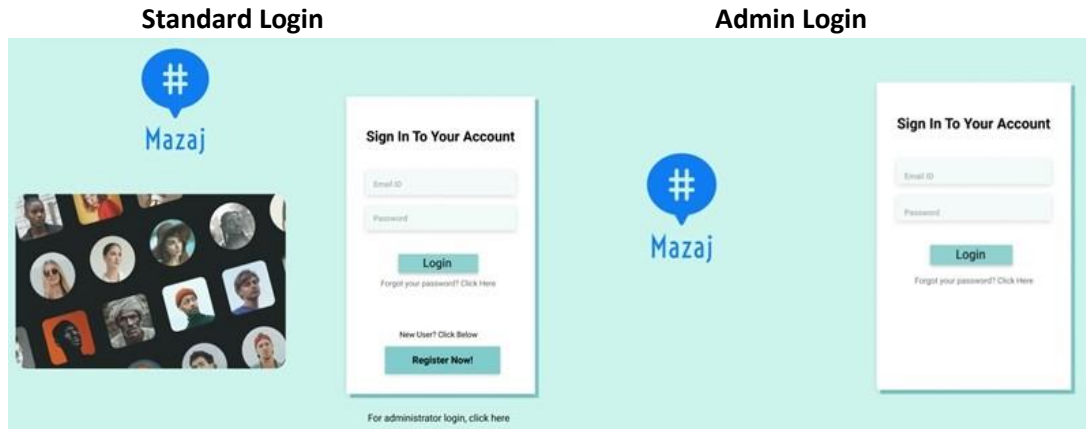
5. Is the purpose of the page clearly understandable?

6. Is the option to register if the user does not have an account already indicative enough?

Home page with search overlay
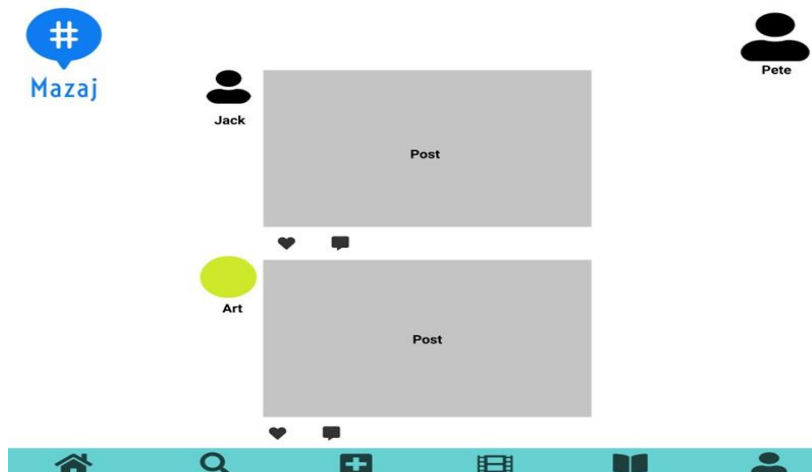
7. What are your impressions on the layout of the screen?

8. Please explain what the icons on the bottom of the screen are indicating

9. Please explain what you infer from this screen.

Cancel

Search for users, libraries, tags and more!

Suggested searches

#party

food

@mrbeast

Library Page

This page is example of a library page, displaying posts associated with the given category.

Art

| Post | Post | Post |
| Post | Post | Post |
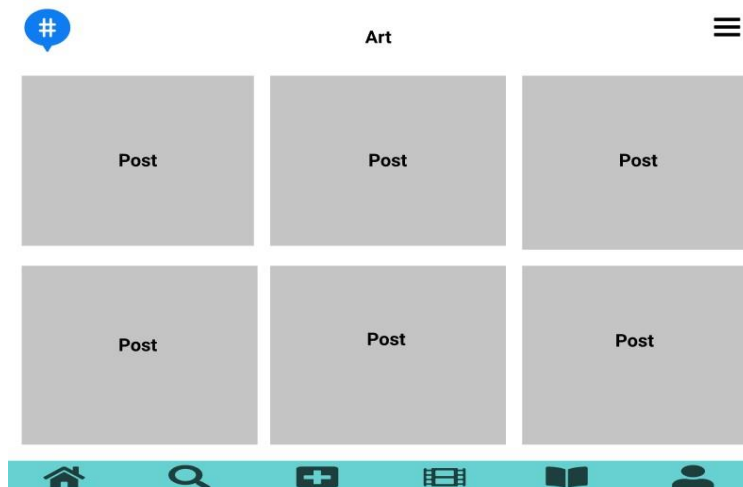
10. Is the purpose of the page clearly understandable?

11. What are your impressions on the layout of the screen?

Collaboration and Mashup Environment
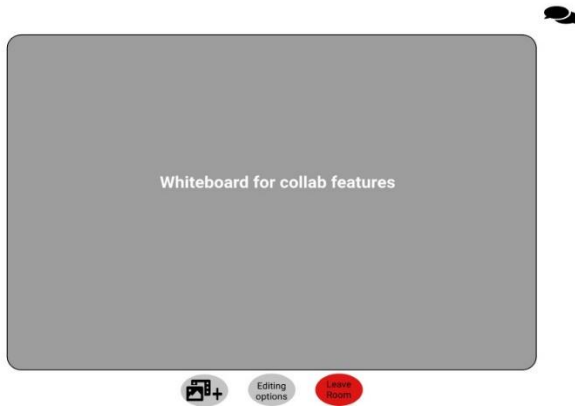
12. How would you describe the main features of the screen?

13. Please explain what the icons are indicating.

14. How would you rate the chatting interface?

723 865 142
Followers Following Posts

pete23
Pete J
Hey, I am an artist!

Your Post   Your Post   Your Post
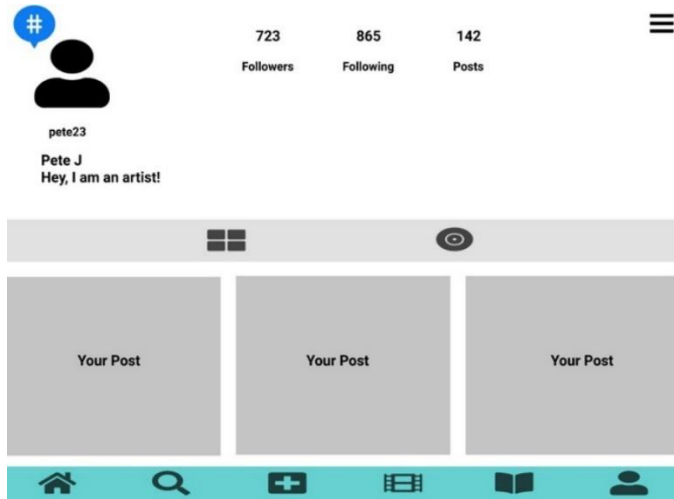
15. What are your impressions on the layout of the page?

16. How would you describe this screen?

Account Settings

Activity

FAQ

Privacy Policy

Terms and Conditions

Log Out

Delete Account

About
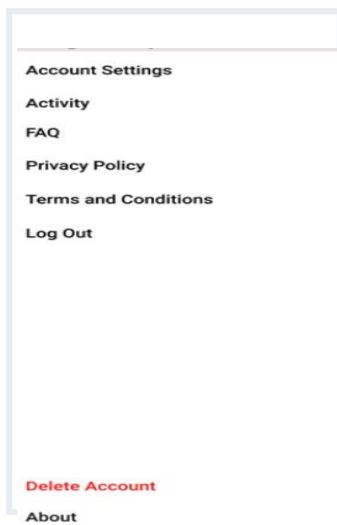
Forgot Password

Forgot password page with the corresponding message

Main page   **Dialog Box**

17. Is the purpose of the page clearly understandable?

Exit Questionnaire (Microsoft Forms Link: Exit Questionnaire)

Exit Questionnaire

Please fill in this questionnaire after evaluating the mock-ups. This form is for us to know your opinion on the mock-ups. If you have any questions, please contact us at sk2003@hw.ac.uk or an2006@hw.ac.uk.You can opt out of the study at any point of time. Thank you so much for your valuable time and effort!

* Required

1.ID *

2.Please rate to which extent you agree with the following statements *

	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
The application is easy to use.	○	○	○	○	○
I found the application design overwhelming	○	○	○	○	○
I thought there is too much inconsistency in the system.	○	○	○	○	○
I would use the application frequently.	○	○	○	○	○
The application is visually appealing.	○	○	○	○	○
I found the application easy to navigate (clear flow).	○	○	○	○	○
I found the various functions in this system was well integrated.	○	○	○	○	○

I would imagine that most people would learn to use this system very quickly.

○   ○   ○   ○   ○

3.What is your favorite aspect of the application (if any)? *

4.What is your most disliked aspect of the application (if any)? *

5.What is your overall opinion on the design of the application?

6.Any suggestions or recommendation?