



American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

**PROJECT TITLE: Mindful Moment App**

A Software Engineering Project Submitted

By

Semester: Spring_23-24		Section: A	Group Number: 07	
SN	Student Name	Student ID	Contribution (CO3+CO4)	Individual Marks
1	MD. ASHFAQ AHMMED LEJON	21-44942-2	20%	
2	MD. REZUAN HUSSAIN	21-45389-3	15%	
3	SUMAIYA SARKAR SHIMLA	22-46172-1	25%	
4	TANVIR SHAHRIAR	22-47160-1	15%	
5	S. M AHSAN HABIB	22-48386-3	25%	

The project will be Evaluated for the following Course Outcomes

<b>CO3:</b> <i>Select</i> appropriate software engineering models, project management roles and their associated skills for the complex software engineering project and evaluate the sustainability of developed software, taking into consideration the societal and environmental aspects	Total Marks	
	Appropriate Process Model Selection and Argumentation with Evidence	[5 Marks]
	Evidence of Argumentation regarding Process Model Selection	[5Marks]
	Evaluate the sustainability of the developed software in terms of both society and the environment (Impact identification)	[5Marks]
<b>CO4:</b> <i>Develop</i> project management plan to manage software engineering projects following the principles of engineering management and economic decision process	Submission, Defense, Completeness, Spelling, grammar and Organization of the Project report	[5Marks]
	Total Marks	
	Develop the project plan, its components of the proposed software products using WBS and testcases	[5Marks]
	Identify all the activities/tasks related to project management and categorize them within Project estimation, and schedule of the tasks using appropriate resources	[5Marks]
	Identify all the potential risks in the specific project and prioritizing/categorizing those, and also mitigation plan to overcome the risk factors.	[5Marks]

### Description of Student's Contribution in the Project work

<p>Student Name: MD. ASHFAQ AHMMED LEJON,      Student ID: 21-44942-2</p> <p>Contribution in Percentage (%): 20%</p> <p>Contribution in Project:</p> <ol style="list-style-type: none"> <li>1. Solution to the problem, Process Model</li> <li>2. Activity Diagram</li> <li>3. Project Test Planning, WBS, Risk Management, EVA</li> </ol> <p style="text-align: right;">_____ Lejon Signature of the Student</p>
<p>Student Name: MD. REZUAN HUSSAIN,      Student ID: 21-45389-3</p> <p>Contribution in Percentage (%): 15%</p> <p>Contribution in Project:</p> <ol style="list-style-type: none"> <li>1. Solution to the problem</li> <li>2. Use Case Diagram</li> <li>3. Process Model</li> <li>4. Prototype Design, Project test planning, WBS, Risk management</li> </ol> <p style="text-align: right;">_____ Rezuan Signature of the Student</p>
<p>Student Name: TANVIR SHAHRIAR,      Student ID: 22-47160-1</p> <p>Contribution in Percentage (%): 15%</p> <p>Contribution in Project:</p> <ol style="list-style-type: none"> <li>1. Solution to the problem</li> <li>2. Use Case Diagram</li> <li>3. Process Model</li> <li>4. Prototype Design, Project test planning, WBS, Risk management</li> </ol> <p style="text-align: right;">_____ Tanvir Signature of the Student</p>
<p>Student Name: SUMAIYA SARKAR SHIMLA,      Student ID: 22-46172-1</p> <p>Contribution in Percentage (%): 25%</p> <p>Contribution in Project:</p> <ol style="list-style-type: none"> <li>1. Background of the problem, Process Model &amp; Roles</li> <li>2. Functional and Non-functional requirement</li> <li>3. Class Diagram &amp; Sequence Diagram</li> <li>4. Prototype Design, Project Test Planning, WBS, EVA ,Cost Model, Timeline chart ,Risk management</li> </ol> <p style="text-align: right;">_____ Shimla Signature of the Student</p>
<p>Student Name: S. M AHSAN HABIB,      Student ID: 22-48386-3</p> <p>Contribution in Percentage (%): 25%</p> <p>Contribution in Project:</p> <ol style="list-style-type: none"> <li>1. Solution to the problem, Process Model &amp; Roles</li> <li>2. Functional and Non-functional requirement</li> <li>3. Class Diagram &amp; Sequence Diagram</li> <li>4. Prototype Design, Project Test Planning, WBS, EVA ,Cost Model, Timeline chart, Risk Management</li> </ol> <p style="text-align: right;">_____ Habib Signature of the Student</p>

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# 1. PROJECT PROPOSAL

## 1.1 Background to the Problem

Balancing work and life is essential for overall well-being and achieving a healthy work-life balance. Working excessively long hours without sufficient rest or balance can have several disadvantages for both individuals and society. Due to overworking nowadays people are suffering from physical and mental illness. Also, it affects their personal life too. In our proposed system,

- 1) It will help users to make a proper routine basis on their daily life,
- 2) It will set up alarm according to users' choice,
- 3) It will offer a variety of guided meditation sessions for different purposes,
- 4) It will suggest songs according to user's music taste,
- 5) It will give mindfulness reminders,
- 6) It will send mindful quotes or affirmations,
- 7) It will offer counselling facilities,
- 8) It will also provide progress tracking.

There are some causes behind this problem we have identified. They are,

- 1) Financial pressure
- 2) Fear of job loss
- 3) Poor planning
- 4) Lack of workload distribution
- 5) Fear of career stagnation
- 6) Unrealistic expectations

Work life balance is important. It impacts both personal well-being and professional effectiveness. Due to overworking, people face several issues. Long period of overwork can cause in various health problems, including stress-related disorders, cardiovascular issues, weakened immune system, and sleep disturbances. Over pressure and demand can take a toll on mental health. Overworking is associated with stress, anxiety and depression. Fatigue and mental exhaustion from over-working increases the likelihood of making mistakes. It also damages people's personal life too. Because he/she doesn't give enough time to his/her family and friends. Work without breaks may hinder the ability to think creatively and generate new ideas. It is harmful for our country's development. So, we need to worry about this. By addressing these issues, the mindful moments app has the potential to make a lasting impact on the well-being and safety of people of the country.

## 1.2 Solution to the Problem

The Mindful Moment Software aims to help users overcome stress, financial worries, and career challenges by offering tools for relaxation, planning, counselling and community support. The solutions we are going to provide are,

**Mindfulness and Stress Reduction Techniques:** Integrate mindfulness exercises, meditation session or stress-relief activities to help users manage stress and anxiety.

**Health and Wellness Tracking:** Include features for tracking physical health, exercise and sleep patterns, as these contribute significantly to overall well-being.

**Community Support:** Create a supportive community within the software where users can share experiences, tips and encouragement.

1. Make budget properly to make financial pressure lower
2. Must be confident and skilled to reduce fear of job loss
3. Have to manage time properly and rearrange all plans to make idea effective
4. Minimize workload to keep mind calm
5. Acquire skills to build a good career
6. Reduce unrealistic plans, be more realistic
7. Provide counselling facilities

The basic functionalities of our proposed solution are improved mental health, stress reduction, healthcare cost reduction, enhanced sleep quality, educational awareness, increased productivity and community support. Our project will use the best use of technology like Artificial Intelligence to handle critical situations. Mobile applications will make the process easier. This entire system will make a very meaningful impact on real life. For example, it will reduce the rate of depressed people. The system's proper use will ensure users mental health improvement, ultimately contributing to a more balanced and youthful lifestyle.

The target group of users and their benefits:

**Busy professionals:** Individuals who are doing jobs in the corporate world will be our main target. They can set up an alarm during their working hours so that they can have time for relaxation.

**Students:** Students dealing with academic pressure, exam stress, extracurricular activities and the challenges of balancing personal life. They can make a proper routine and can make a schedule for their pastime by using this app.

**Parents:** Parents will use this app for their children's mental health improvement.

**People with anxiety and depression:** people who are suffering from anxiety and depression, this app will be helpful for them. They can make an appointment with a psychiatrist.

**Insomnia and sleep disorder:** Those who are struggling with sleep issues who are seeking guided meditations and relaxation techniques to improve the quality of their sleep, this app will also help them.

**Experienced Meditators:** Seasoned practitioners who want a convenient app to support their ongoing mindfulness practice and explore new techniques.

**Integration of Evidence-Based Practices:** By including mindfulness techniques that have been verified by science and recorded in peer-reviewed research, the project can advance scientific understanding. This guarantees that the methods offered by the Mindful Moment app are based on well-researched studies that demonstrate their efficacy.

**Research Collaboration:** Working with psychologists, neuroscientists, and mindfulness practitioners can result in controlled experiments or clinical trials that evaluate the app's effects on users. The project aims to produce scientific data and insights regarding the effectiveness of mindfulness interventions facilitated by digital platforms by means of performing thorough research.

**Validation of Mindfulness therapies:** The study may help establish mindfulness therapies as useful methods for enhancing mental well-being. The Mindful Moment app can lend credibility to the area of mindfulness-based interventions by conforming to established principles and practices that are supported by scientific data.

**Continuous Iteration based on Research Findings:** A dynamic and developing platform may result from the project's dedication to continuous development guided by scientific discoveries. Constant iteration based on study findings guarantees that the app stays current with user needs and the most recent developments in mindfulness research.

Mindful moments app will reduce depression rate in people. This app offers a variety of relaxation techniques, including guided meditations and breathing exercises which will be helpful for people's health. It will offer a soothing sound and music according to users taste so people can enjoy their pastime. This proposed app will help people to make a proper routine. The cost of implementation of this app is less. People who are suffering from insomnia, this app will be useful for them. Moreover, it is beneficial for people.

**Financial Pressure:** Integrate budgeting tools, financial planning resources, and educational content for informed decision-making.

**Fear of Job Loss:** Provide career development tools, job market insights, and skill-building resources for increased professional resilience.

**Poor Planning:** Include task and project management features, along with time management tools, to aid effective planning and organization.

**Lack of Workload Distribution:** Implement team collaboration features for workload distribution and personal workload management tools.

**Fear of Career Stagnation:** Integrate professional development resources, skill enhancement modules, and continuous learning opportunities.

**Unrealistic Expectations:** Offer goal-setting features, self-assessment tools, and a feedback mechanism to promote realistic expectations.

There are various applications and platforms that address aspects of mindfulness, stress reduction, financial wellness, and personal development. Here are some examples:

<b>Apps</b>	<b>Focus</b>	<b>Tasks</b>
<b>Headspace</b>	Mindfulness and meditation	provides guided meditation sessions, mindfulness exercises, and sleep aids to reduce stress and improve overall well-being.
<b>Calm</b>	Meditation and relaxation	offers guided meditations, breathing exercises, and sleep stories to promote relaxation and mindfulness.
<b>Toggl</b>	Time tracking and productivity	enables users to track time spent on tasks, projects, and activities to improve time management and productivity.
<b>Happify</b>	Emotional well-being and resilience	utilizes science-based activities and games to promote positive thinking, reduce stress, and build emotional resilience.

We distinguish our Mindful Moment Software by providing a singular, integrated solution that addresses various challenges, encompassing stress reduction, financial wellness, career development, and personal planning, all within one cohesive platform.

## 1. SOFTWARE DEVELOPMENT LIFE CYCLE

### 1.1 Process Model

#### Analysis:

The Mindful Moment Software, addressing dynamic financial, career, and personal challenges, requires flexibility and adaptability in development.

#### Best Suitable Method: Agile Software Management (SCRUM)

Scrum is an agile framework for managing software development projects. It emphasizes iterative progress, collaboration, and flexibility, allowing teams to adapt to changing requirements and deliver value incrementally. With its focus on regular feedback and continuous improvement, Scrum enables teams to optimize productivity and produce high-quality results efficiently. There are advantages to user this model:

- i. **Flexibility:** Scrum is like a flexible tool that can change easily to fit what our project needs. This is super important because our project has a lot of different things to deal with.
- ii. **Iterative Development:** Instead of doing everything at once, we can break our work into small parts following an iterative development approach,. This enables us to deliver value to users early and frequently, allowing for continuous feedback and refinement of the product.
- iii. **Focus on User Needs:** With Scrum, we can make sure that the final product is what people actually want. Scrum focuses on delivering value to users by involving stakeholders and users in the development process, ensuring the final product meets their needs. Prioritizing user needs is crucial for our project, which aims to enhance well-being and productivity through features like mindfulness exercises, financial planning tools, and career development resources.

- iv. **Cross-Functional Collaboration:** Scrum promotes collaboration among cross-functional teams, including developers, designers, stakeholders, and users. This collaborative approach fosters creativity, innovation, and shared ownership of the project's success. For our project, collaboration is crucial for integrating various features seamlessly, ensuring a cohesive user experience, and addressing the diverse needs of your target audience.
- v. **Continuous Improvement:** With Scrum, teams regularly review their processes in retrospectives, identifying ways to enhance practices. This focus on learning helps teams adapt to challenges and deliver top-quality products. For your project, it means incorporating user feedback to enhance features and usability effectively.

Scrum is perfect for our project because it promotes adaptability and collaboration. Its iterative approach enables continuous improvement, ensuring our app evolves to meet user needs. By involving stakeholders throughout development, Scrum ensures the final product aligns with user expectations. This fosters a collaborative environment where teams can integrate feedback and make necessary adjustments. Ultimately, Scrum empowers our team to create a comprehensive solution that effectively addresses challenges related to well-being and productivity.

	SCRUM	Waterfall Model	Incremental Development
Flexibility and Adaptability	Offers high flexibility, allowing for changes throughout the development process to meet evolving user needs and market dynamics.	Follows a rigid sequential approach, making it challenging to accommodate changes once the project is underway.	Combines elements of both sequential and iterative approaches, allowing for flexibility in accommodating changes. It divides the project into increments, with each increment adding new functionality.
Iterative Development	Emphasizes iterative and incremental development, enabling early and frequent delivery of value to users through incremental releases. This allows for continuous feedback and refinement of the product.	Lacks opportunities for iteration and incremental development, potentially delaying the delivery of value and hindering responsiveness to feedback.	Follows an iterative approach where the project is divided into stages, with each stage adding new features or functionality. However, it may not deliver value as frequently as Scrum.
Customer Engagement	Involves stakeholders and users throughout the development process, ensuring the final product meets their needs and expectations. User feedback is solicited and incorporated	Typically involves limited user input only during the initial requirements gathering phase.	Allows for user involvement at various stages of development, with opportunities for feedback and adjustments during each increment.



	incrementally.		
Risk Management	Enables early identification and mitigation of risks through regular reviews and retrospectives, ensuring proactive risk management. Risks are addressed incrementally throughout the development process.	Has limited flexibility for addressing risks once the project is underway, potentially increasing project risk.	Addresses risks incrementally with each stage of development, allowing for early identification and mitigation
Time-to-Market	Facilitates faster time-to-market by delivering value incrementally in each sprint, allowing for timely updates and enhancements. Incremental delivery ensures that features are delivered continuously.	May have a longer time-to-market due to its sequential nature, potentially delaying the delivery of value to users.	Offers a shorter time-to-market compared to Waterfall, as functionality is delivered in increments. However, it may not provide as rapid delivery as Scrum.

Overall, Scrum's flexibility, iterative and incremental approach, emphasis on user involvement, proactive risk management, and faster time-to-market capabilities make it the best choice for your project compared to Waterfall and Incremental models.

## 1.2 Project Role Identification and Responsibilities

Scrum Master, Scrum Team (Business Analysts, Developer, Tester) and Product Owner (Customer) all play crucial roles in the development of this "Mindful Moments Application".

### 1. Scrum Master

A Scrum Master is responsible for ensuring that the Scrum team is operating effectively as much as possible with Scrum values. That means he/she keeps the team on track. He/she plans and leads meetings, and tries to work out any obstacles the team might face. Scrum Masters not only guide teams but also contribute to implementing Scrum across organizations. Because they are both a leader and a back-end supporter.

Scrum implementation process can be different from organization to organization and team to team. However, a Scrum Master might have some responsibilities:

- Conduct daily Scrum meetings (also called “daily standups”).
- Focus on creating valuable Increments that fulfill the Definition
- Stay informed about team members' status through one-on-one meetings or alternative communication channels.
- Manage obstacles that arise for the team after communicating with stakeholders who are outsider

of the team.

## 2. Product owner

A product owner makes sure the Scrum team is working towards the main goals of the product. They know what the business wants for the product, like what customers want and what's happening in the market. Product owners often talk to product managers and other important people outside the team to make sure everyone is on the same page about what needs to be done.

Product owners might have some responsibilities like:

- Manage the product backlog by following priority of customers
- Set the product vision for the team
- Talk to people outside the team and tell the team what they want.
- Make sure the team is focused on fulfill product needs through communication

## 3. Scrum team

A scrum team is a group of people who actually do the work in a Scrum sprint. They could be computer experts, designers, writers, data experts, or any other job that helps reach sprint goals.

The team doesn't just wait to be told what to do; they usually work together to figure out what needs to be done and how to do it.

Not everyone in the development team does the same job. For example, if you're working on a website, you might have someone who makes it look good, someone who writes the words, and someone who knows how to make it work smoothly. What the team does depends on what they're trying to achieve.

But generally, a scrum team might:

Assist in figuring out what tasks are necessary

- Share their knowledge to make things better
- Look at data to figure out how to do things well
- Test things to make sure they work right.

## 3. Software Requirements Analysis

### Functional Requirements

#### 1. User Registration:

1.1 The software shall provide a signup interface allowing users to enter required information, including:

- Full name
- Email address
- Desired username
- Password
- Occupation

1.2 The system shall validate the entered information to ensure it meets the specified criteria

1.3 Upon successful validation, the system shall create a new user account and store the provided details in the database.

## **2. Email Verification:**

- 2.1 After successful account creation, the system shall send a verification email to the provided email address.
- 2.2 The email shall contain a unique verification link or code.
- 2.3 Users shall be required to click the verification link or enter the code to activate their account.
- 2.4 Unverified accounts shall be marked as pending and have limited access until verification.

## **3. Unique Username:**

- 3.1 The system shall enforce uniqueness for usernames.
- 3.2 If a chosen username is already in use, the system shall prompt the user to choose a different one.

## **4. Password Security:**

- 4.1 The system shall enforce password security measures, such as a minimum length, the inclusion of alphanumeric characters, and special characters.
- 4.2 Passwords shall be securely hashed and stored in the database.

## **5. User Profile:**

- 5.1 Upon successful signup and verification, the system shall create a user profile with the provided information.
- 5.2 Users shall be able to update their profile information after signup

**Priority Level:** High

**Precondition:** Users must provide valid and unique information during the signup process.

## **6. Software Login:**

- 6.1 The software shall allow users to login with their given username and password
- 6.2 The login credentials (username and password) will be verified with database records.
- 6.3 If the login is successful the home page of the user account (Student, Employee, psychologist) will be displayed.
- 6.4 If the username and/or password has been inserted wrong, the random verification code will

be generated and sent to the user's email address by the system to retry login.

6.5 If the number of login attempt exceed its limit (3 times), the system shall block the user account login for one hour

6.6 If the user forgets his/her password, he/she can click the forget password button. It will help him/her to change or recover his/her password

**Priority level:** Medium

**Precondition:** user have valid user id and password

## 7. View Account:

The system will return users' details.

**Priority level:** Low

## 8. Software Logout:

8.1 The software shall allow users to log out with their given email and username.

8.2 If the logout is successful, all the data of the user will be deleted from system database.

**Priority level:** High/low (need based)

**Precondition:** user must have a valid mail address and must put username correctly.

## 9. Password Reset:

9.1 The system will ask users to put his/her email and it will check his/her email validation.

9.2 If the email is valid, the system will ask the user if he/she wants his/her previous password, or he/she wants to change his/her password.

9.3 If the user selects to change password, the system asks for a new password from the user, and it will change the previous password with the new one.

**Priority level:** High/low (need based)

**Precondition:** user must have a valid mail address

## 10. Student / Employee:

10.1 The system will display the user's name.

10.2 It will brief motivational message or quotes as a welcome message.

10.3 It will suggest music, meditation guides, motivational quotes, jokes, etc. to refresh his/her mind.

10.4 It will also assist him/her in rearranging their study schedule and breaks, contributing to an

enhanced educational experience.

10.5 And another essential feature is that he/she can consult with a psychologist through this app. For that, this application will provide, and option named:

Consultation Options:

- Appoint psychologist according to their choice.
- Schedule sessions with a psychologist.
- Emergency helpline for immediate support.

10.6 Also, there is another option named Account Security.

**Account Security:**

- Display last login information
- Option to change password.

**Priority Level:** High

**Precondition:** user must have a valid mail address and must put username correctly.

## **11. Psychologist consultation:**

11.1 The system will display the psychologist's name.

11.2 It will give a brief description of psychologist qualifications.

- A bachelor's degree in psychology or related field.
- A master's degree in psychology or doctoral degree (Ph.D. or Psy.D.) is required for independent practice.
- Psychologist must be licensed to practice independently.

11.3 It will show psychologist consulting time and visiting place.

11.4 And another essential feature is that he/she can consult with a psychologist through this app.

For that, this application provides, and option named:

Consultation Options:

- Schedule sessions with a psychologist.
- Can see their patient.
- Emergency helpline for immediate support.

11.5 Also, there is another option named Account Security.

**Account Security:**

- Display last login information
- Option to change password.

## **Non-functional Requirements:**

### **General Non-functional Requirements:**

- 1. Performance:** -
  - Any user contact should result in a response time from the system of two seconds or less.
  - The dashboard and login page load times shouldn't be longer than five seconds.
- 2. Scalability:**
  - At least 10,000 concurrent users should be supported by the program.
  - It ought to grow smoothly in the future to accommodate a larger user base.
  - System reloading is possible.
- 3. Reliability:**
  - The application must have a minimum 99.5% uptime.
  - Mechanisms for data backup and recovery need to be strong and dependable.
  - Users are required to report any issues they encounter.
- 4. Security:**
  - Both the transmission and storage of user data require encryption.
  - The system should follow industry best practices and go through frequent security audits.
- 5. Compatibility:**
  - The application ought to work with the most recent iterations of the main online browsers and mobile operating systems (iOS, Android).
  - Design that adapts to different screen sizes and resolutions.
- 6. Accessibility:**
  - To guarantee usability for people with impairments, the software must adhere to accessibility standards.
  - Assistance with screen readers and other assistive devices.
  - The user can quickly locate any data source from it.

### **Interface-Specific Non-functional Requirements:**

Student and Employee Interfaces:

- 1. User Experience:**
  - An intuitive and user-friendly interface design is essential.
  - Minimal reaction time for dashboard actions.
- 2. Data Synchronization:**
  - Modifications to user profiles, schedules, and preferences ought to be instantly reflected on all devices.
- 3. Offline Mode:**
  - Users should be able to access previously seen information in offline mode, which should have basic functionality.
- 4. Notifications:**
  - Push alerts have to arrive in no more than five seconds.
  - Users ought to be able to alter their notification selections.

**Psychologist Interface:****1. Real-time Communication:**

- Virtual consultation features should provide a seamless and real-time communication experience.
- The system should support high-quality audio and video for virtual sessions.

**2. Data Privacy:**

- Patient data should adhere to the highest level of privacy and comply with healthcare data protection regulations.
- Secure transmission of sensitive patient information during virtual sessions.

**3. Appointment Management:**

- The scheduling system should prevent double bookings and conflicts.
- Immediate notification of appointment requests.

**4. Technical Support:**

- A dedicated support system for psychologists, ensuring quick resolution of technical issues.
- System updates should not disrupt ongoing virtual sessions.

**Cross-cutting Non-functional Requirements:****1. User Training:**

- Provide comprehensive user guides or tutorials for all user categories to ensure a smooth onboarding process.

**2. Documentation:**

- Maintain detailed documentation for developers and administrators.

**3. Performance Monitoring:**

- Implement tools for monitoring system performance and identifying and resolving potential bottlenecks.

**4. Updates and Maintenance:**

- Regular updates and maintenance activities should not disrupt the user experience.
- Notify users in advance of any scheduled maintenance.

**5. Password Recovery:**

- The password recovery process should be secure, and users should receive password reset emails within 5 minutes.

These non-functional requirements cover a range of aspects to ensure the overall success, security, and usability of your Mindful Moment App.

#### 4. Use Case Diagram

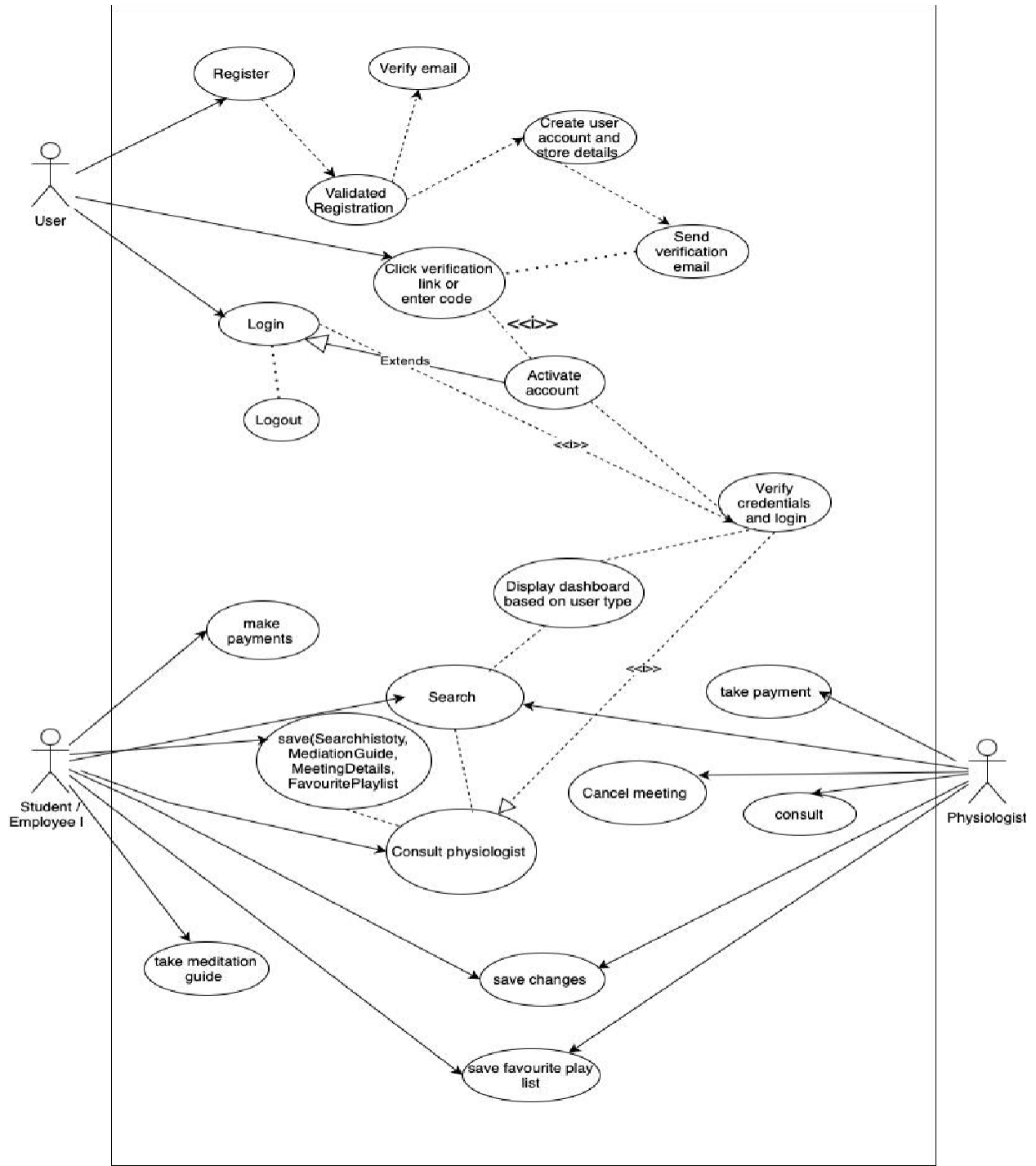


Figure: Use Case Diagram of Mindful Moment App



## 5. Class Diagram

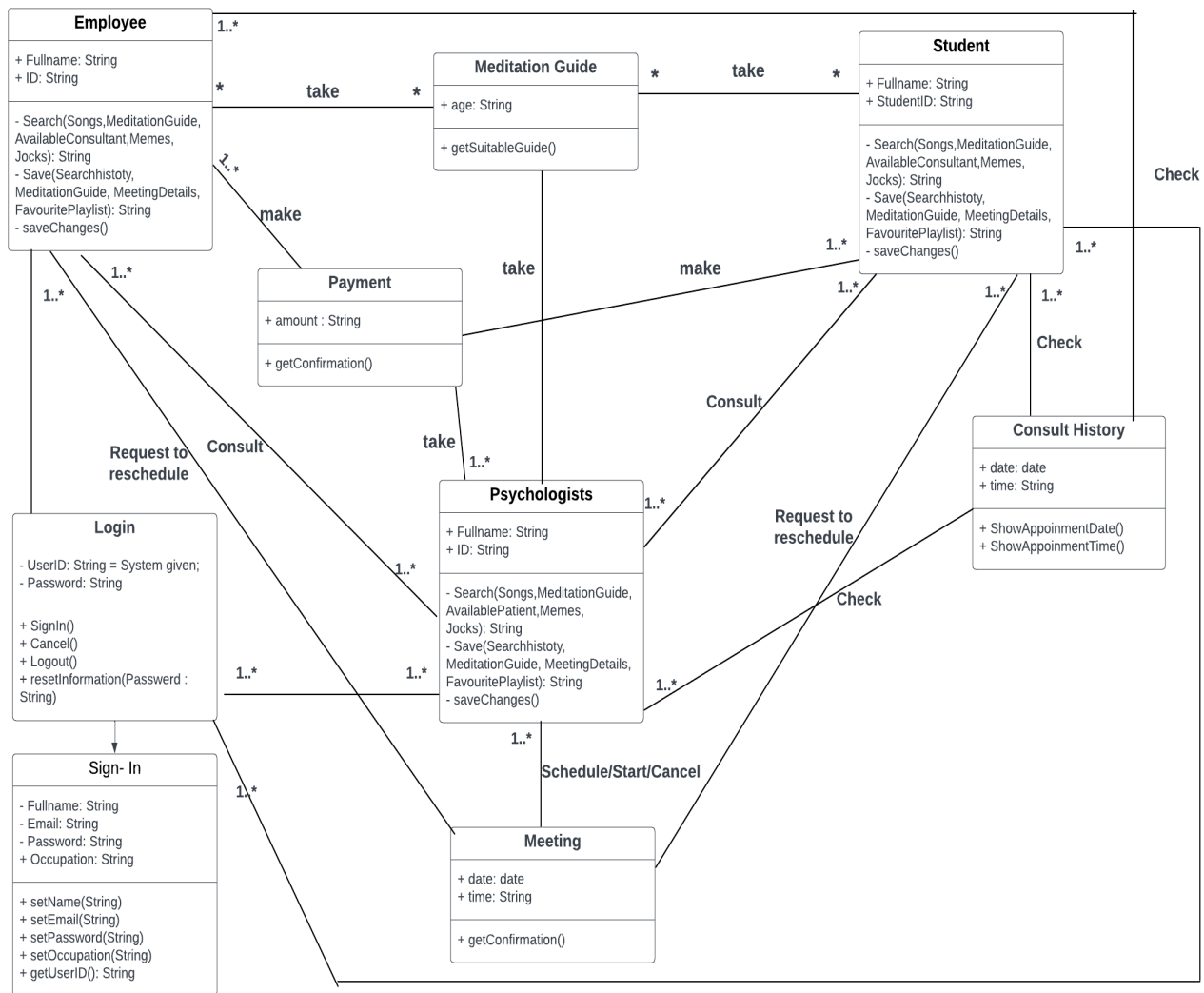


Figure: Class Diagram of Mindful Moment App.

## 6. Sequence Diagram:

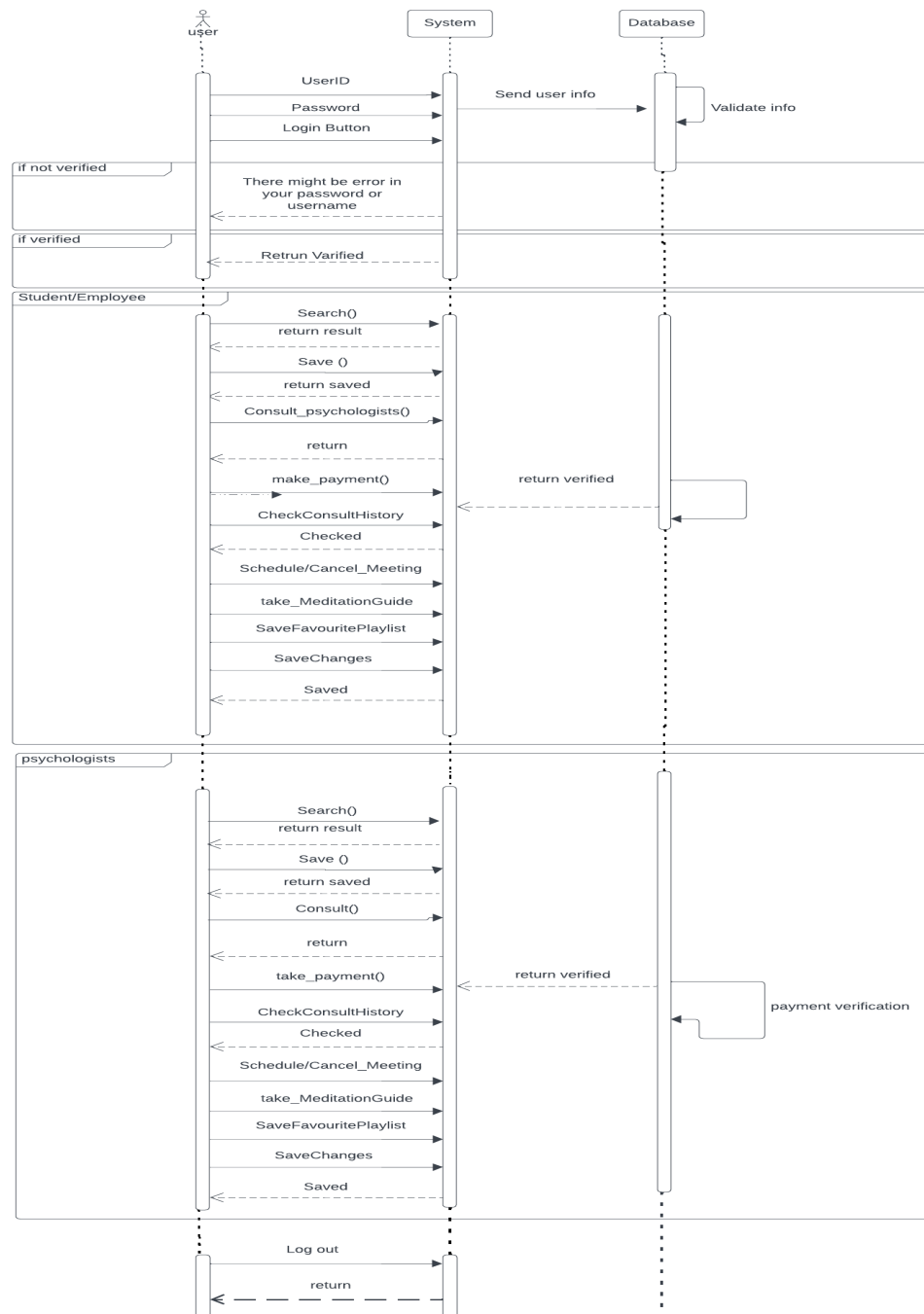


Figure: Sequence Diagram

## 7. Activity Diagram

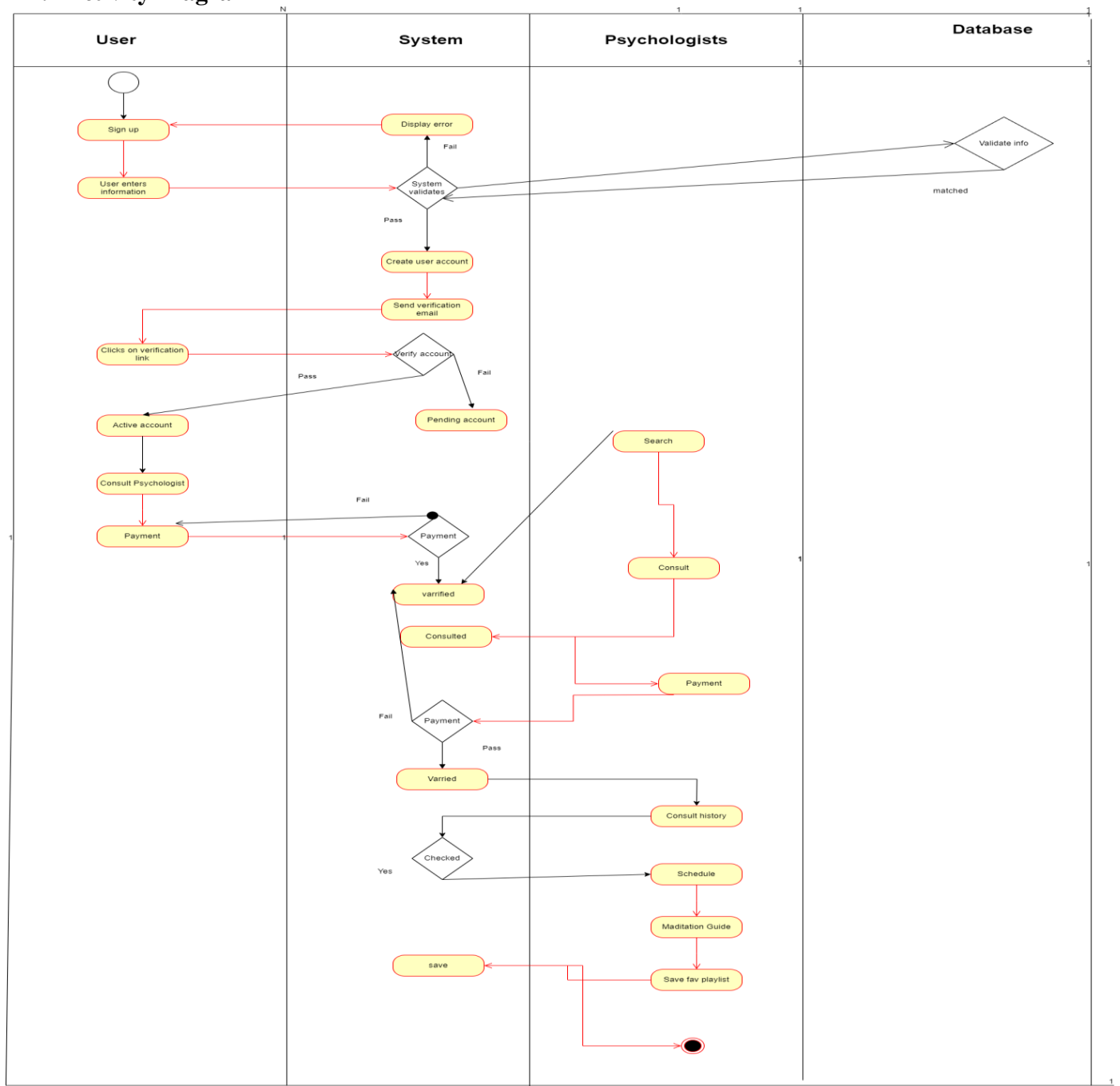
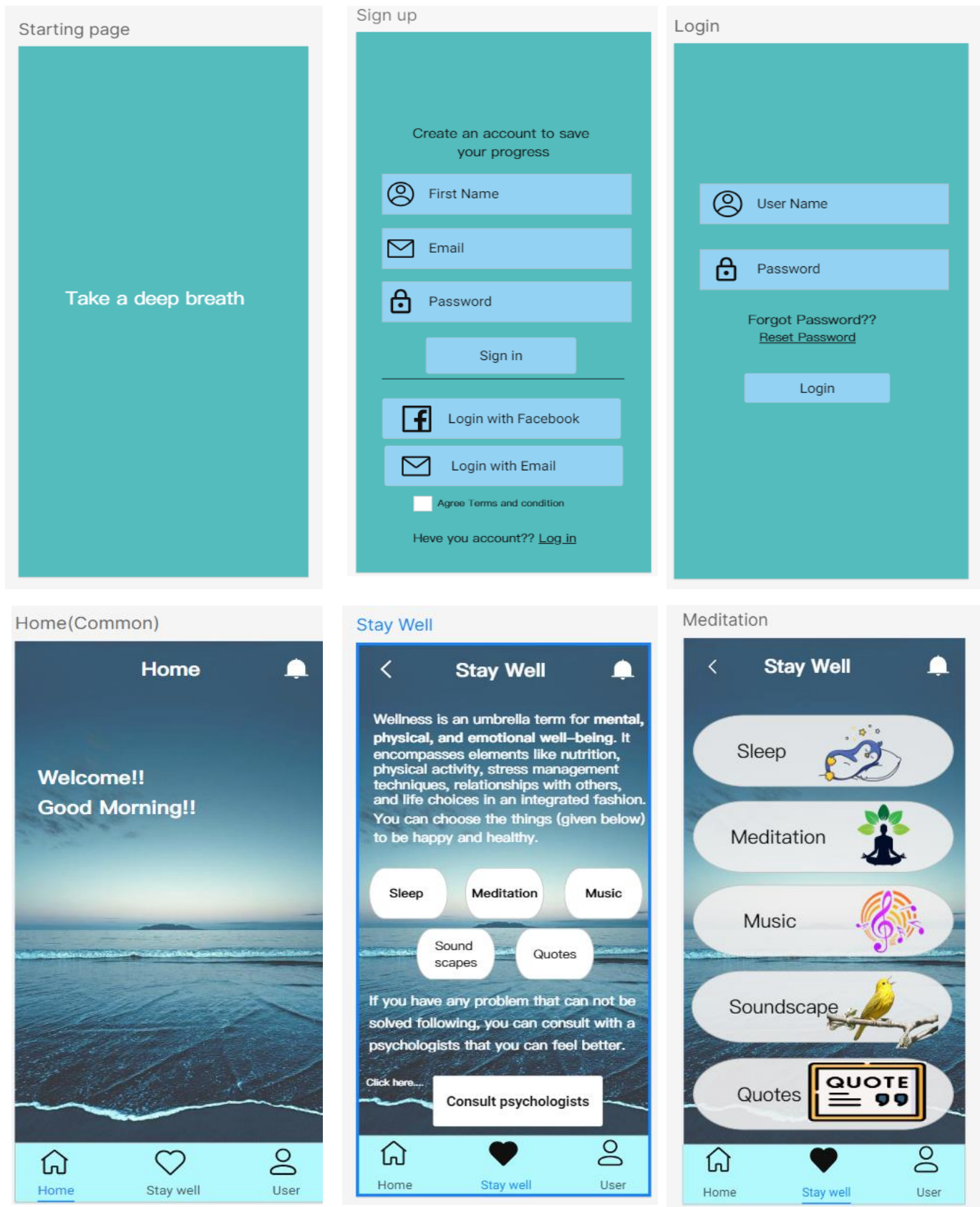


Figure: Activity Diagram

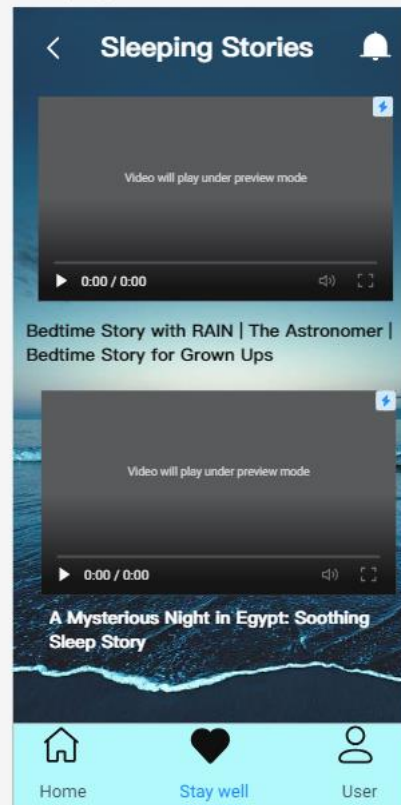
## 8. PROTOTYPE DESIGN



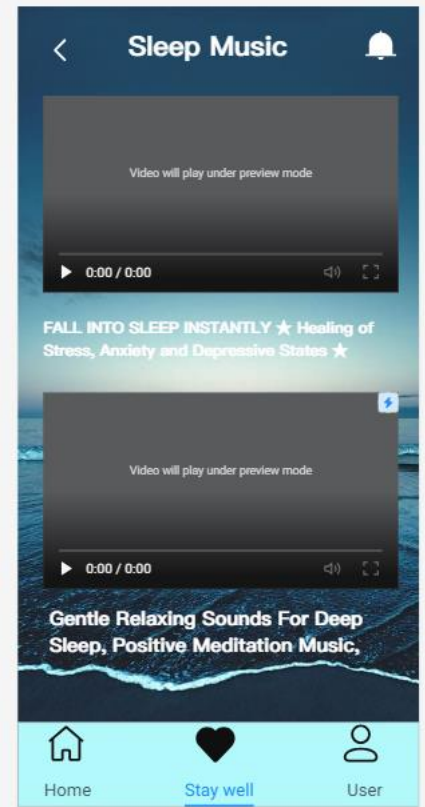
## Stay Well(Sleep)



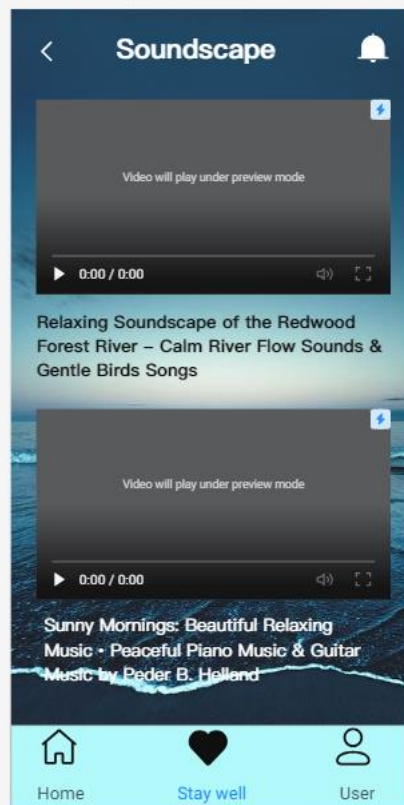
## Sleeping Stories



## Sleep Music



## Soundscape



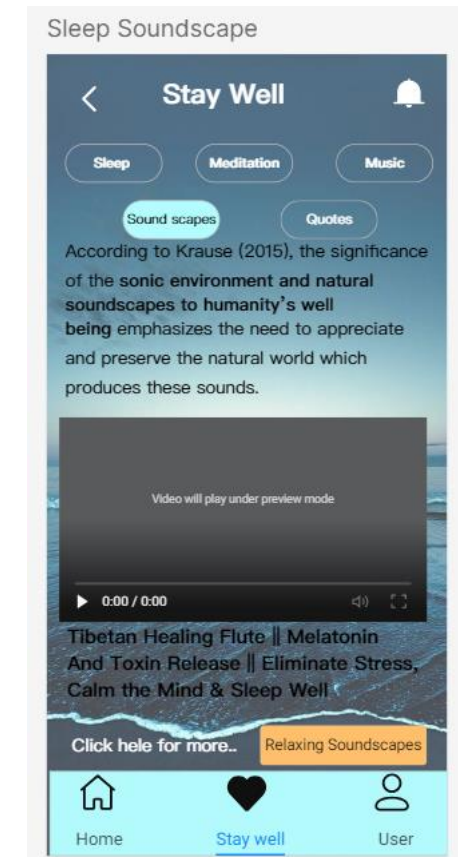
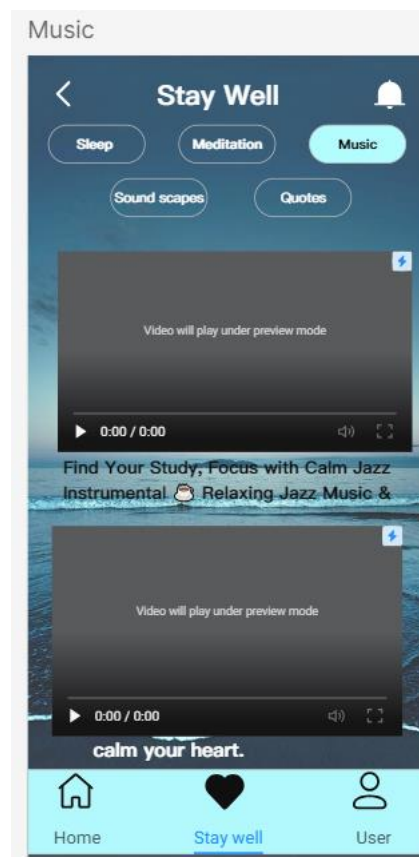
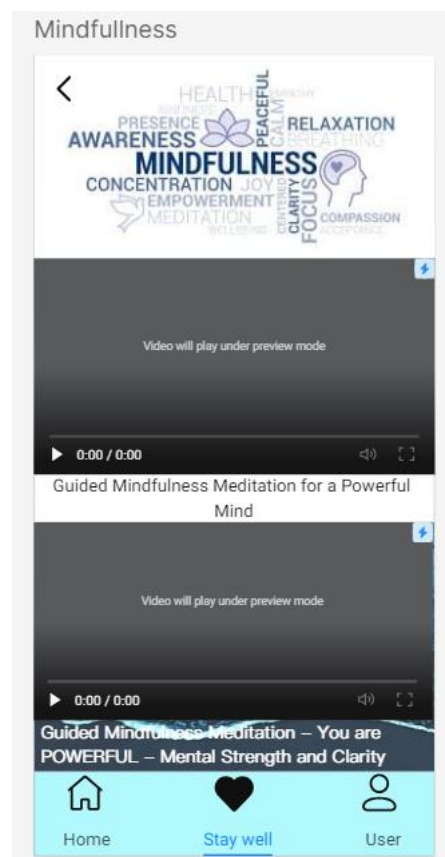
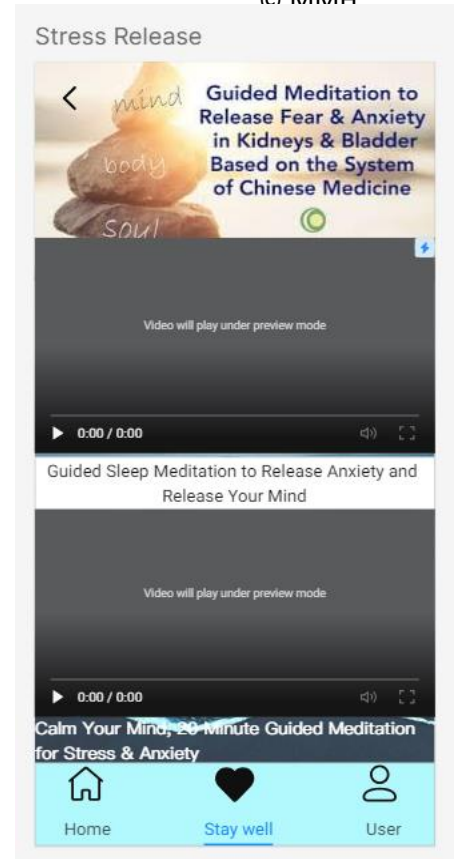
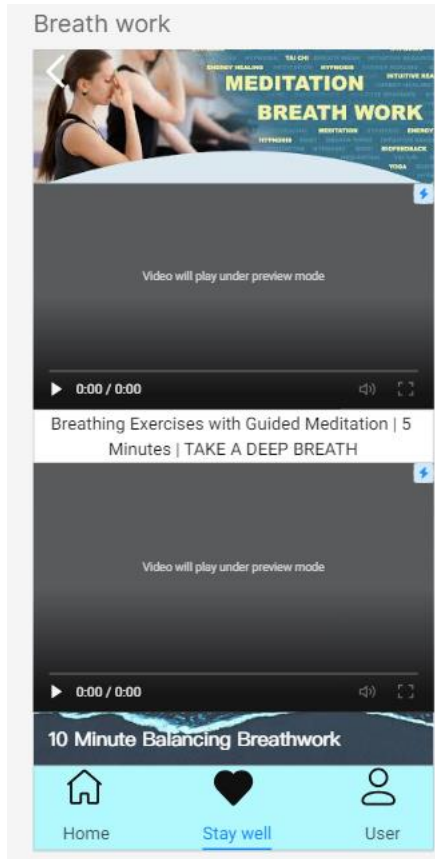
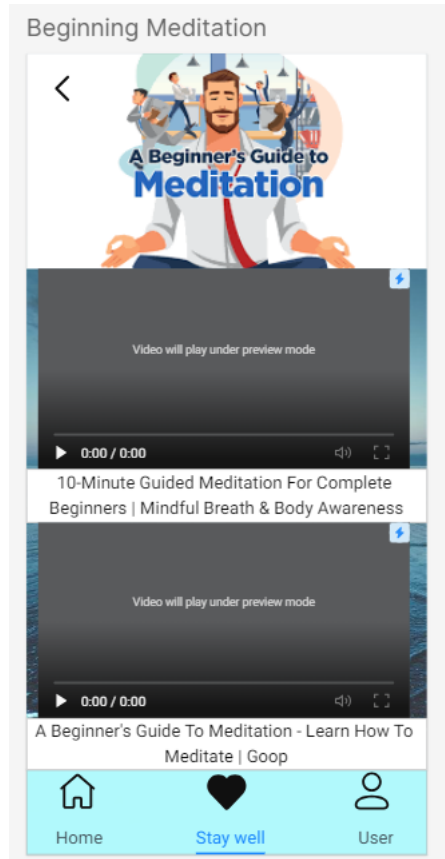
## Sleep Guide

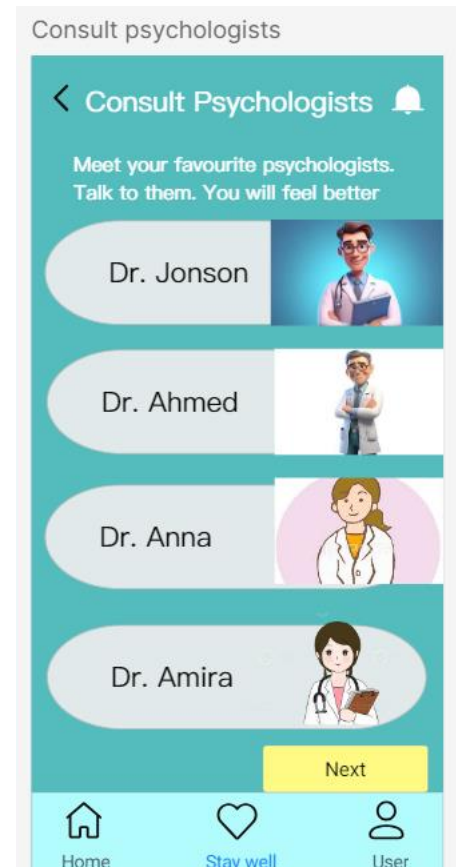
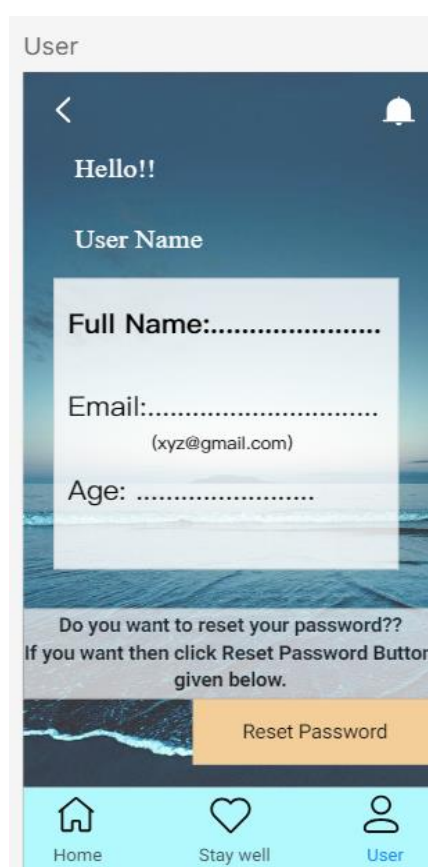
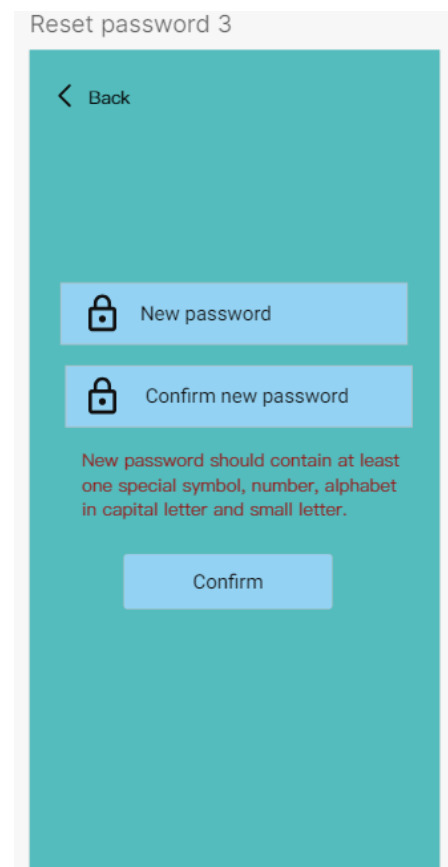
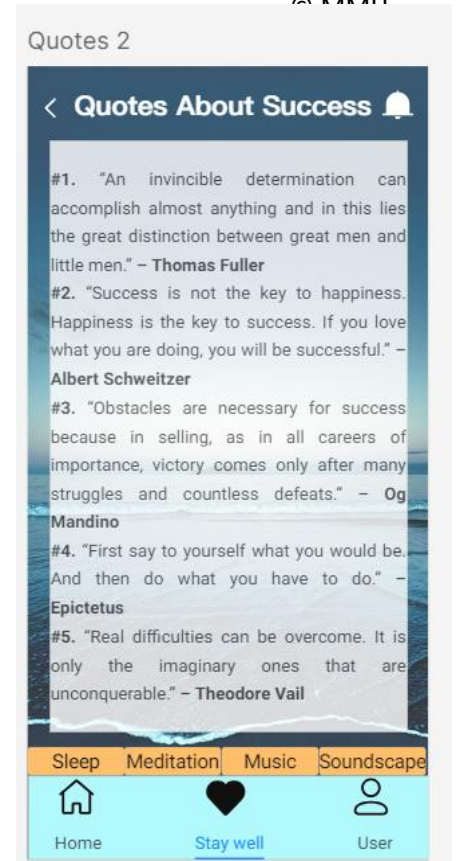
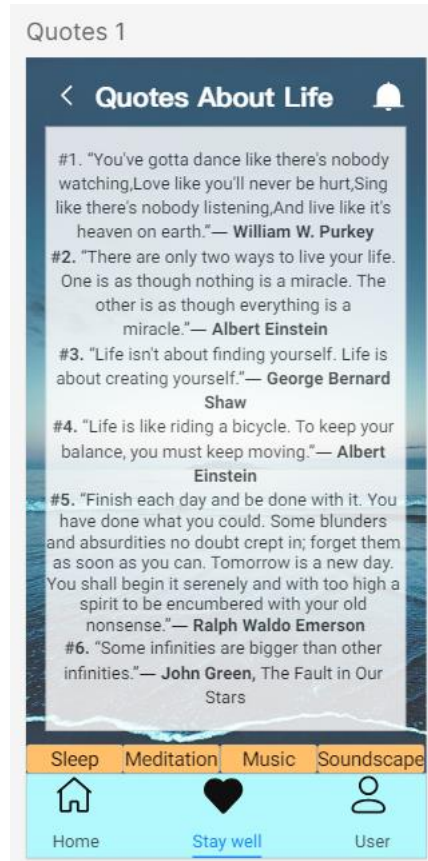
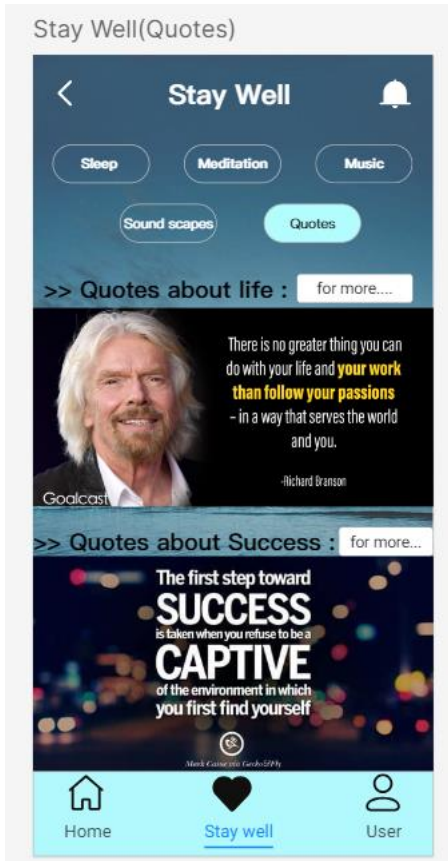


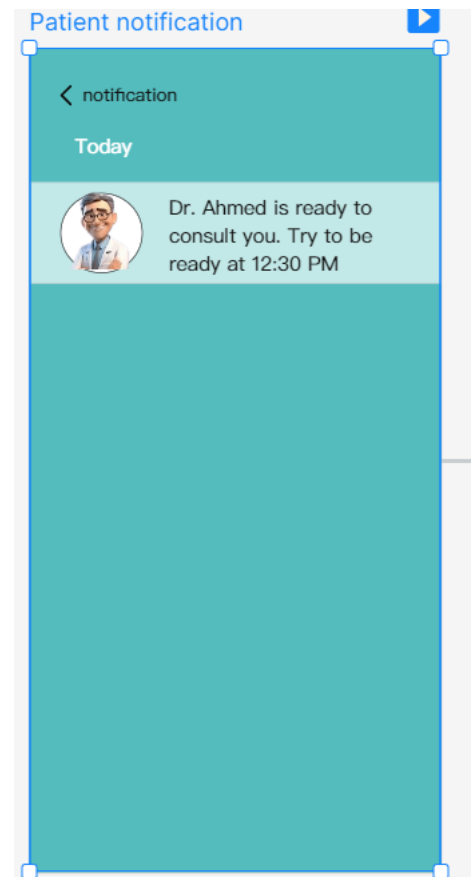
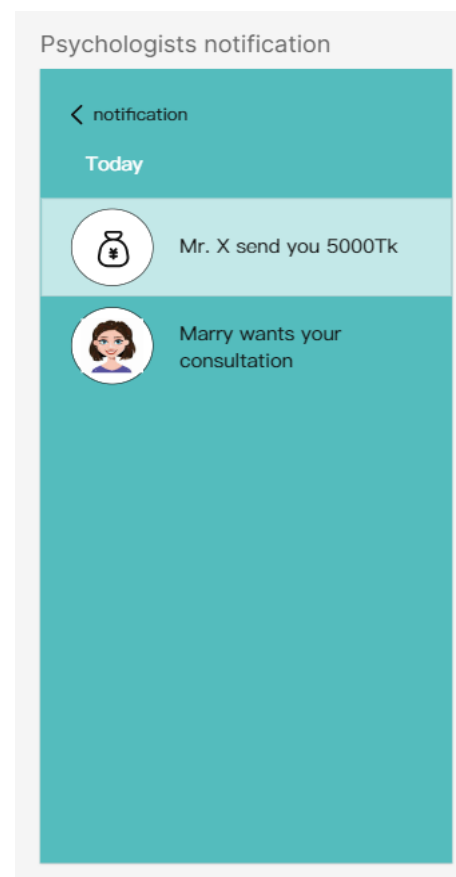
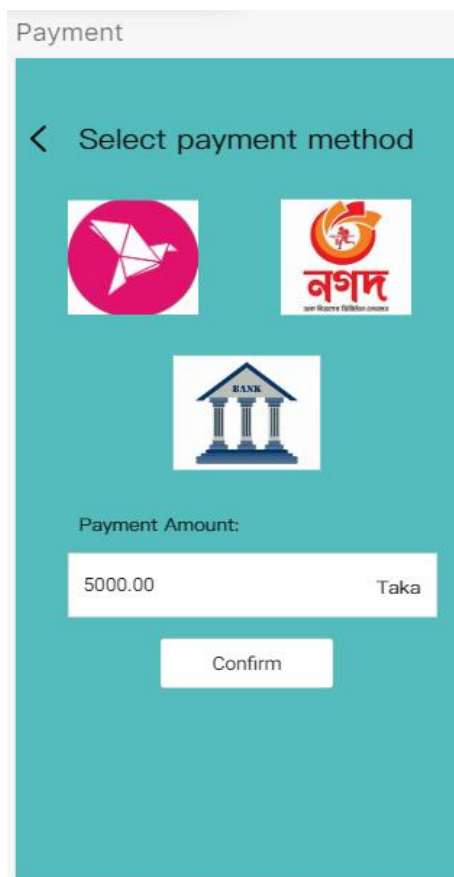
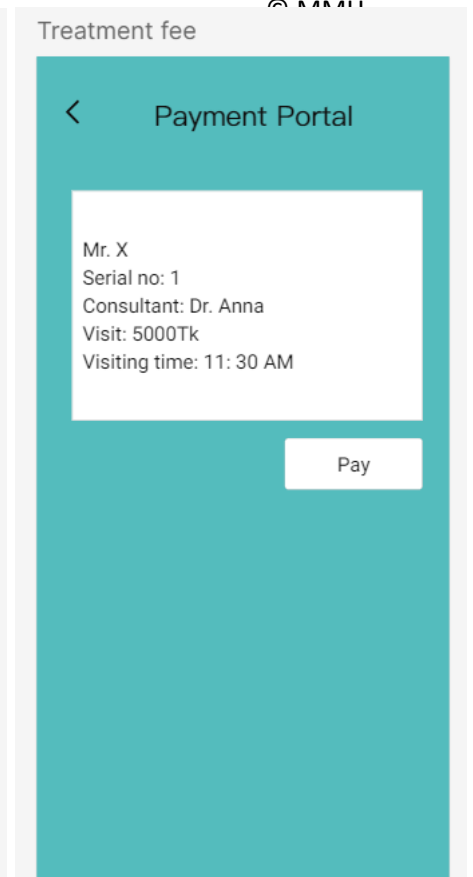
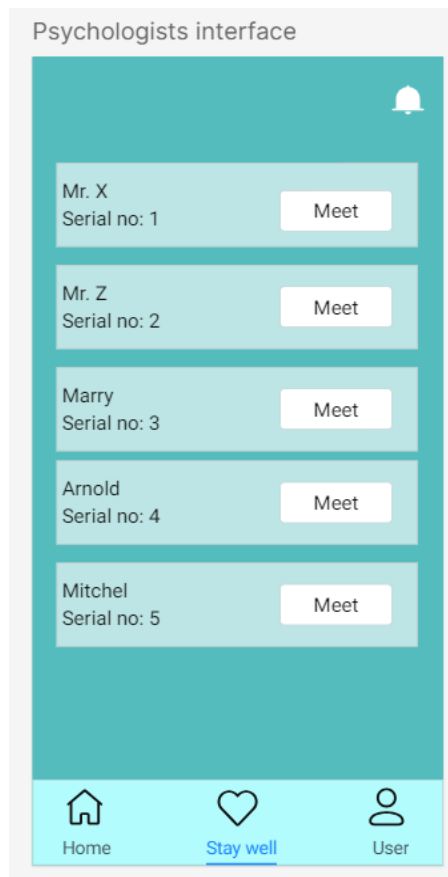
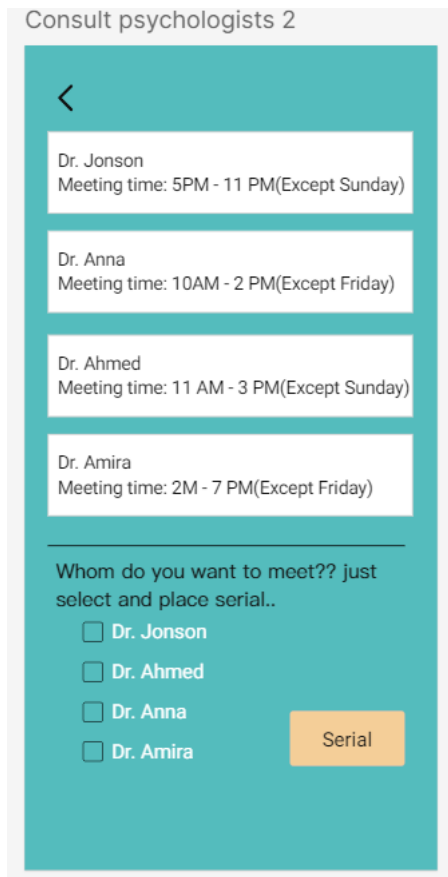
## Stay Well(Meditation)













## 9. Project Test Planning

### Test Case:

Testing is the process of exercising a program with the specific intent of finding errors prior to delivery to the user end. Software testability is simply how easily a program can be tested.

### Types of Tests Required:

#### Unit Testing:

- **Reason:** To verify the functionality of individual software components like meditation sessions, breathing exercises and reminders.

#### Integration Testing:

- **Reason:** Ensuring seamless interactions between different features and modules within the app.

#### System Testing:

- **Reason:** Validating the entire app's compliance with specified requirements and its behavior under various conditions.

#### Acceptance Testing:

- **Reason:** Confirming whether the app meets user expectations and fulfills stakeholders' requirements.

#### Regression Testing:

- **Reason:** Ensuring recent updates or changes haven't adversely affected existing functionalities.

#### Validation Testing:

- **Reason:** Checking whether the app effectively promotes mindfulness and meets users' needs.

#### White-box Testing:

- **Reason:** Assessing the internal structures and workings of the app, focusing on code paths, logic, and structure.

#### Black-box Testing:

- **Reason:** Evaluating the app's functionality without considering its internal code, focusing on input-output behavior.

### 2. Roles for Testing:

- **Product Manager (Andy):** Oversees the overall testing process, ensuring alignment with user needs and product vision.
- **Software Developer (John, Bill):** Conducts unit testing to verify the correctness of individual app components.
- **Quality Assurance Specialist (Corry):** Responsible for integration testing, system testing, acceptance testing, and regression testing to ensure app quality and reliability.
- **End Users:** Participate in acceptance testing to provide feedback on the app's usability and effectiveness in promoting mindfulness.

For our projects, the Required test cases are given,

## Test case (1): User Registration

Project Name: Mindful moments app		Test Designed by: Tanvir Shahriar & Md Rezuan Hussain		
Test Case ID: FR01		Test Designed date: 07 April, 2024		
Test Priority: High		Test Executed by:		
Module Name: User registration		Test Executed date:		
Test Title: Sign up procedure with email ID				
Description: Verify the sign up application				
Precondition (If any): User must have a unique email ID and a valid password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Select SIGNUP 3. Select Registration here 4. Enter Full Name 5. Select Signup with email 6. Enter email ID 7. Slide to get email code 8. Enter the code 9. Enter password 10. Enter Username 11. Enter Occupation 12. Click Signup	Full Name: Tanvir shahriar Email Address: <a href="mailto:tanvir@gmail.com">tanvir@gmail.com</a> Email Verification Code: 063319 Password: Tanvir23 User name: Tanvir Occupation: student	User will be automatically signed up to his newly created account		
Post Condition: User successfully complete registration				

## Test case (2.1): Email Verification(Registration time)

Project Name: Mindful moments app		Test Designed by: S. M Ahsan Habib		
Test Case ID: FR02.1		Test Designed date: 10 April, 2024		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Email verification (registration time)		Test Execution date:		
Test Title: Email verification, while a person creating a new account to login				
Description: Test whether the process is working or not				
Precondition (If any): User must have a valid mail address which was used to register to the application				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Go to the sign in option after entering the application 2. Fill up all the data 3. Click sign in button 4. Check email 5. Confirm	After click confirm button an user can complete his/her registration or not	Verification Successful		
Post Condition: User successfully register after email verification				

## Test case (2.2): Email Verification(Password Reset time)

Project Name: Mindful moments app		Test Designed by: S. M Ahsan Habib		
Test Case ID: FR02.2		Test Designed date: 10 April, 2024		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Email verification(Password reset time)		Test Execution date:		
Test Title: Email verification, while a person wants to reset his/her password				
Description: Test whether the process is working or not				
Precondition (If any): User must have a valid mail address which was used to register to the application				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to the login page 2. Click forgot password 3. Give new password 4. Confirm new password 5. Reset	After click reset button a person can have a new password	Password changed		
Post Condition: User successfully login with the new password				

## Test case (3): Unique user name

Project Name: Mindful moments app		Test Designed by: S. M Ahsan Habib		
Test Case ID: FR03		Test Designed date: 10 April, 2024		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Unique user name		Test Execution date:		
Test Title:				
Description: Check the application provides the unique user name or not				
Precondition (If any): User must have a valid mail address				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to the login page 2. Click forgot password 3. Give new password 4. Confirm new password 5. Reset	After click reset button a person can have a new password	Password changed		
Post Condition: User successfully get a unique user name to login				

## Test case (4): User Profile

Project Name: Mindful moments app		Test Designed by: MD. Ashfaq Ahmmed Lejon		
Test Case ID: FR04		Test Designed date: 10 April, 2024		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: User Profile		Test Execution date:		
Test Title: Verify the User Profile is working or not				
Description: Check if the application provides a unique user profile after registration.				
Precondition (If any): User must have a valid mail address				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Go to the registration page. 2. Fill up all the information properly 3. Verify if the user profile name is unique. 5. If not unique, display an error message prompting the user to choose a different name. 6. Repeat steps 2-5 with different user profile names until a unique one is accepted. 7. Complete the registration process.	After click reset button a person can have a new user profile.	User's registration is accepted and the user can login.		
Post Condition: User successfully registers with a unique user profile name.				

## Test case (5): Login

Project Name: Mindful moments app		Test Designed by: SUMAIYA SARKAR SHIMLA		
Test Case ID: FR05		Test Designed date:3/4/2024		
Test Priority (Low, Medium, High): Medium		Test Executed by:		
Module Name: Login Session		Test Execution date:		
Test Title: Verify Login				
Description: To verify if the user can properly login in the system or not				
Precondition (If any): User must have valid user id and password				
Test Steps	Test Data	Expected Results	Actual Results	Status
1.Open the Website. 2. User Input Valid user id and password. 3. Click Login	User ID: 20315 Password:123	User should login into the system after the user id and password matches with the database.		
Post Condition: User has successfully login to the system.				

## Test case (6): View Account

Project Name: Mindful moments app	Test Designed by: MD. Ashfaq Ahmmed Lejon
Test Case ID: FR06	Test Designed date: 10 April, 2024
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: View Account	Test Execution date:
Test Title: Verify View Account Functionality	

Description: Check if the application allows users to view their account details.				
Precondition (If any): User must be logged in with valid credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status
<ol style="list-style-type: none"> <li>1. Log in to the application using valid credentials.</li> <li>2. Navigate to the "Account" or "Profile" section.</li> <li>3. Locate and click on the "View Account" option.</li> <li>4. Verify that the user's account details are displayed, including but not limited to: <ul style="list-style-type: none"> <li>- User profile name</li> <li>- Email address</li> <li>- Profile picture (if applicable)</li> <li>- Account creation date</li> <li>- Additional relevant account information</li> </ul> </li> <li>5. Ensure that the displayed information is accurate and up-to-date.</li> <li>6. Check for the presence of an "Edit Account" option for users to modify their details (if applicable).</li> <li>7. Verify that users can navigate back to the main application interface or dashboard after viewing their account.</li> <li>8. Test any links or buttons related to account navigation for proper functionality.</li> </ol>	<p>After click reset button a person can have a new View Account</p>	<p>User account details are displayed accurately, including options to edit account information.</p>		
Post Condition: Users can successfully view their account details and make necessary changes if required.				



## Test case (7): Log out

Project Name: Mindful moments app		Test Designed by: MD. Ashfaq Ahmmed Lejon		
Test Case ID: FR07		Test Designed date: 10 April, 2024		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Logout		Test Execution date:		
Test Title: Verify Software Logout Functionality				
Description: Check if the software allows users to log out from their accounts.				
Precondition (If any): User must be logged in with valid credentials.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Log in to the software using valid credentials. 2. Locate and click on the "Logout" button or link. 3. Confirm the logout action when prompted. 4. Verify that the user is logged out of the software. 5. Attempt to access any restricted pages or features after logout. 6. Ensure that the user is redirected to the login page or denied access to restricted areas. 7. Verify that the user session is terminated, and no sensitive information is retained on the software interface.	User name: Xyz@10	User is successfully logged out from the software and redirected to the login page.		
Post Condition: Users are securely logged out from their accounts, ensuring data privacy and security.				

## Test case (8): Forgot Password

Project Name : Mindful moments app		Test Designed by: SUMAIYA SARKAR SHIMLA		
Test Case ID: FR08		Test Designed date:3/4/2024		
Test Priority (Low, Medium, High): Medium.		Test Executed by:		
Module Name: Forget Password Session		Test Execution date:		
Test Title: OTP validation Test				
Description: To verify if the user can properly get OTP with valid Email.				
Precondition (If any): User must have valid Email				
Test Steps	Test Data	Expected Results	Actual Result	Status
1. Open the Website. 2. User Click forget password 3. User inputs valid Email. 4. User clicks get OTP.	UserID: Xyz@10 Email:shimla123@gmail.com	User should get valid OTP in his Email.		
Post Condition: User successfully gets the OTP.				

## Test case (9): Reset Password

Project Name: Mindful moments app		Test Designed by: SUMAIYA SARKAR SHIMLA		
Test Case ID: FR09		Test Designed date:3/4/2024		
Test Priority (Low, Medium, High): High/Low(need based)		Test Executed by:		
Module Name: Forget Password Session		Test Execution date:		
Test Title: Password Reset Test				
Description: To verify if the user can properly Change the password with Email and OTP				
Precondition (If any): User must have valid Email.				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. Open the Website. 2. User Click forget password 3. User inputs valid Email. 4. User clicks get OTP and gets OTP 5. User Inputs the OTP and clicks confirm. 6. User Inputs new password and confirm Password to update the password.	NID: 20315 Email:shimla123@gmail . com OTP: 2453	User should be able to change his password.		
Post Condition: User successfully changes the password.				

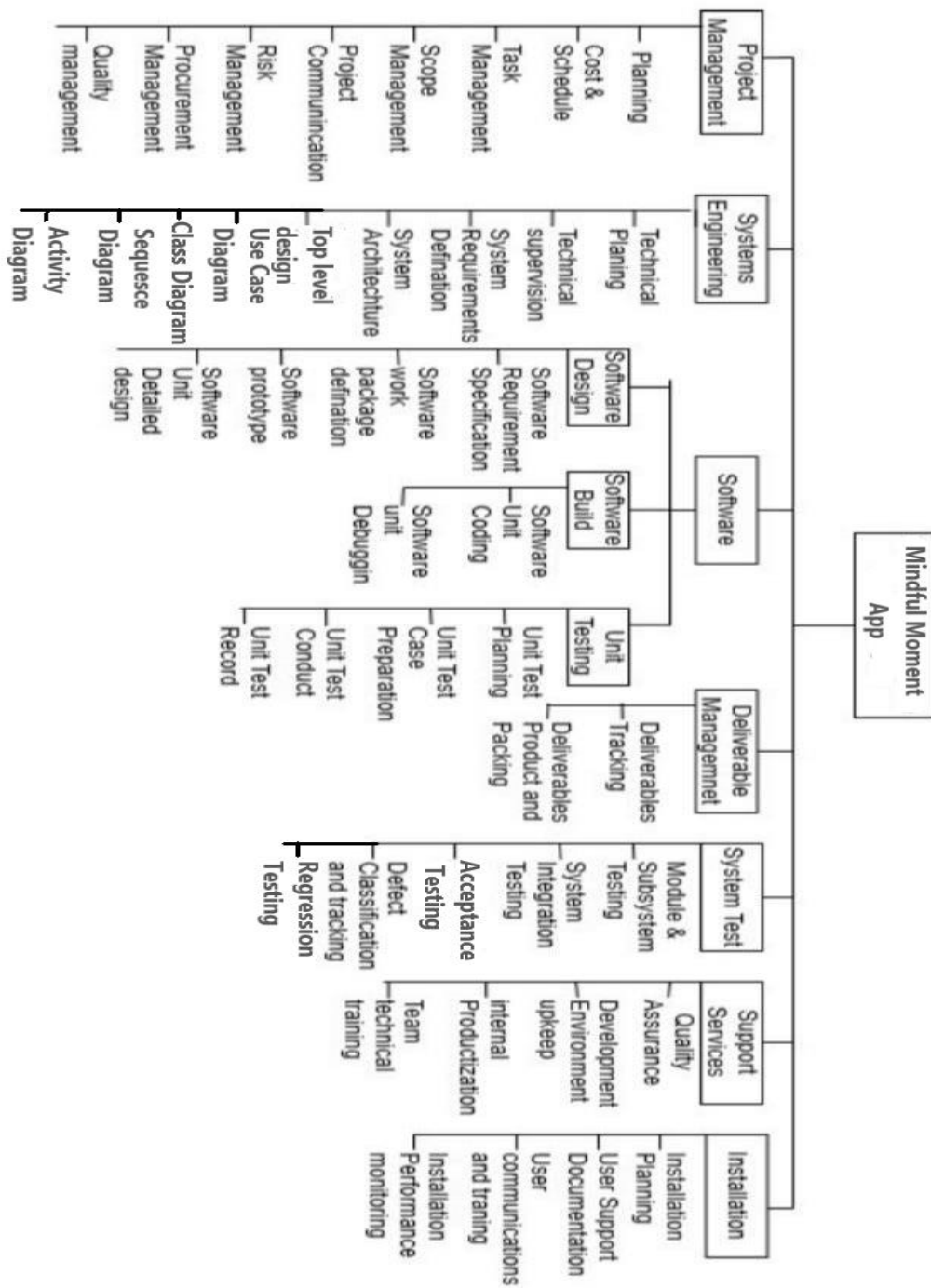
## Test case (10): Student / Employee Dashboard

Project Name: Mindful moments app		Test Designed by: SUMAIYA SARKAR SHIMLA		
Test Case ID: FR10		Test Designed date:3/4/2024		
Test Priority (Low, Medium, High): High		Test Executed by:		
Module Name: Student/Employee find relaxation and consultation hours		Test Execution date:		
Test Title: Student/ Employee relaxation and consultation hour				
Description: To find the system can give us proper relaxation ways and suggest psychologist				
Precondition (If any): User must have a valid mail address and must put user name correctly				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. User login to the system. 2. In the dashboard, user start searching for relaxation ways. 3. User provide a specific way. 4. User search for psychologist and appoint them.	Relaxation ways: Sleep(sleeping stories, sleep music, Soundscape, Sleeping guide), meditation guides(Beginning meditation, Breath work, stress and anxiety release meditation, mindfulness meditation), music, soundscapes, motivational quotes. Consultation options: appoint psychologist	The system should suggest valid map based on the input.		
Post Condition: User successfully find the relaxation ways and psychologist consultation				

## Test case (11): psychologists Dashboard

Project Name: Mindful moments app		Test Designed by: SUMAIYA SARKAR SHIMLA		
Test Case ID: FR11		Test Designed date:3/4/2024		
Test Priority (Low, Medium, High): Medium.		Test Executed by:		
Module Name: Psychologist consultation		Test Execution date:		
Test Title: Psychologist consultation Test				
Description: To assign valid psychologist for consultation.				
Precondition (If any): User Should Select a psychologist name and click on serial				
Test Steps	Test Data	Expected Results	Actual Results	Status
1. User log in to the system 2. User select psychologist name from the menu bar.  3. User selects the specific expert and assigns them by click on serial.	Psychologist name:Dr.Anna Serial:3	The system should be able to find the psychologist name and to get the psychologist serial number.		
Post Condition: The user successfully Assigned psychologist for consultation				

## 10. Work Breakdown Structure



## 11. Constructive Cost Model

<b>Software Project Type</b>	<b>Coefficient &lt;Effort Factor&gt;</b>	<b>P</b>	<b>T</b>
Organic	2.4	1.05	0.38
Semi-detached	3.0	1.12	0.35
Embedded	3.6	1.20	0.32

An organic project type suits small projects (like ours) due to its flexibility, allowing adaptation to changes without excessive overhead. It enables quick iterations, fosters creativity, and mitigates risks, making it ideal for efficiently delivering small-scale initiatives.

Coefficient <Effort factor> = 2.4

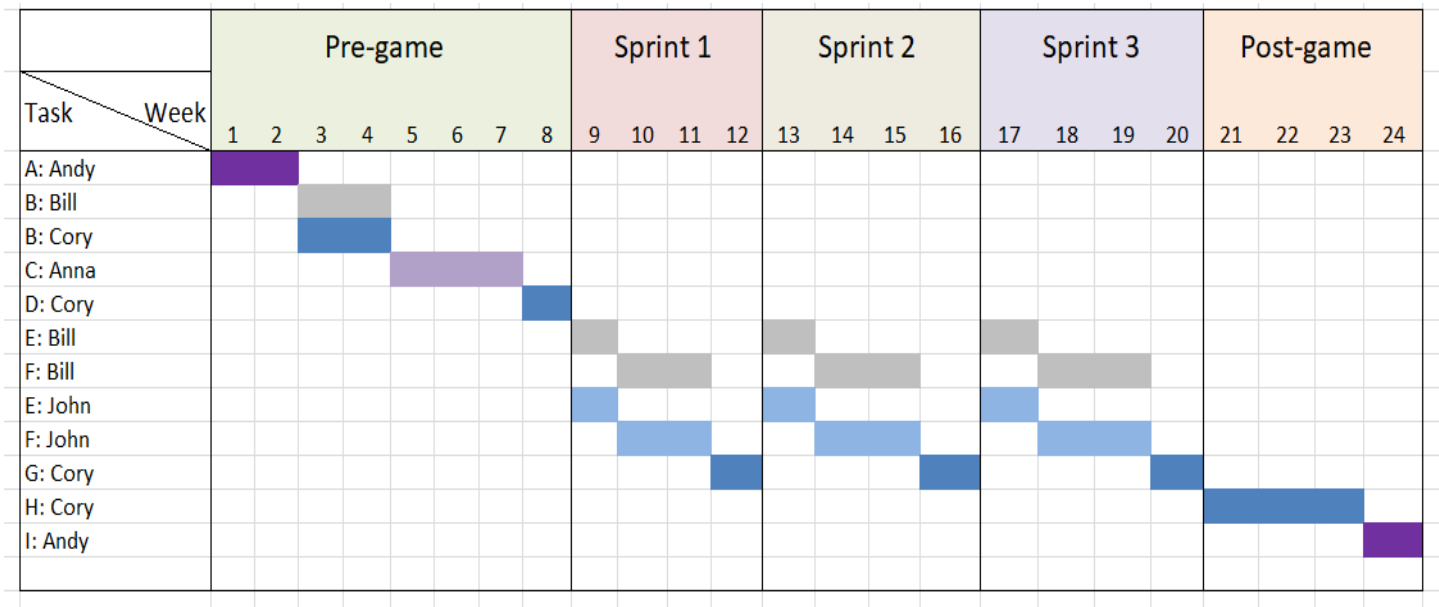
P = 1.05

T = 0.38

SLOC = 6000

- $\text{Effort} = \text{PM} = 2.4 * \left( \frac{6000}{1000} \right)^{1.05}$   
= 15.74
- $\text{Development time} = \text{DM} = 2.50 * (15.74)^{0.38}$   
= 7.126
- $\text{Required number of people} = \text{ST} = \frac{15.74}{7.126}$   
= 2.21

## 12. Timeline chart



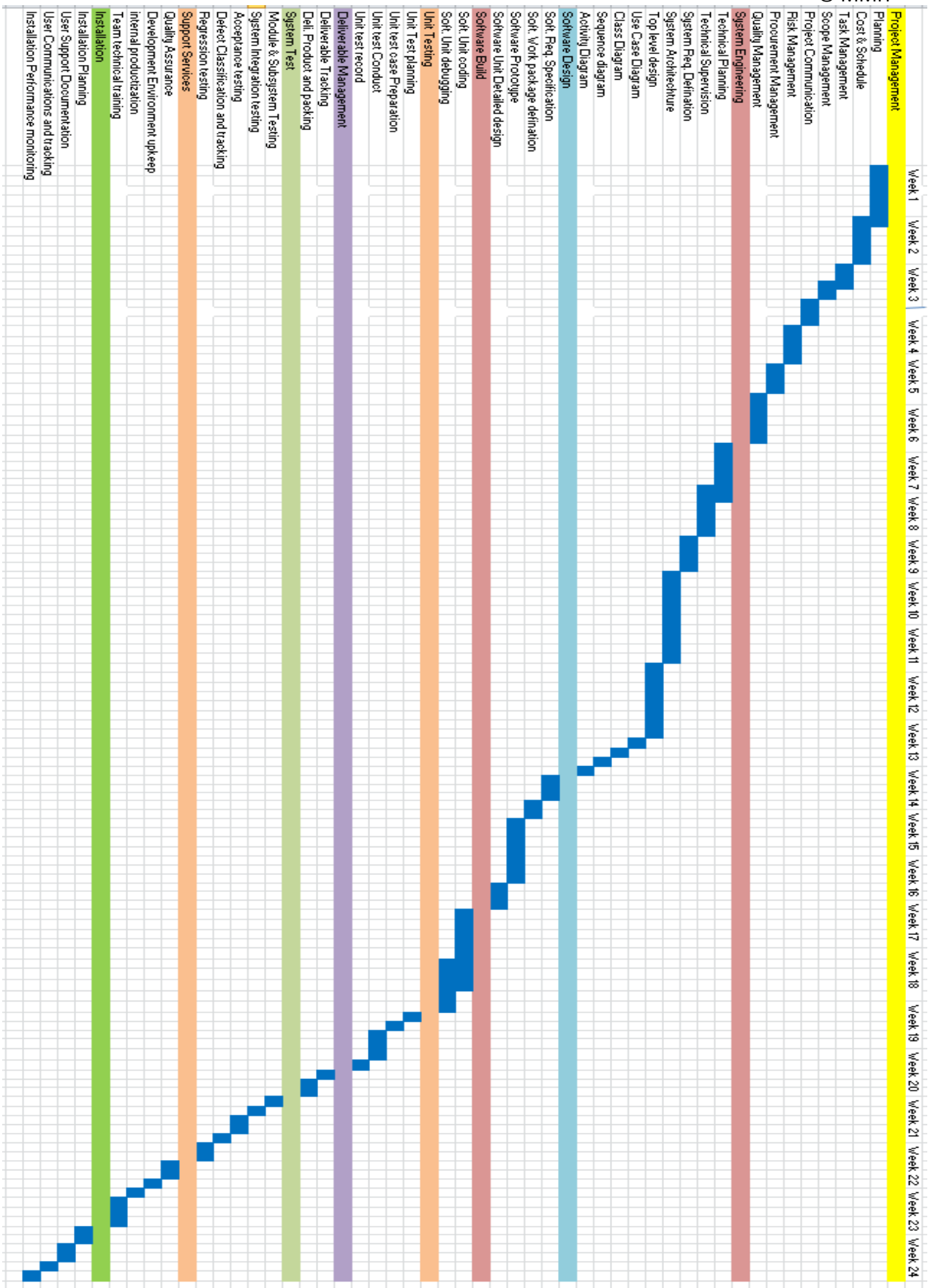
### Tasks:

A: Product Backlog list creation, Effort Estimation
B: Planning
C: Architectural Design
D: Spring planning
E: Sprint backlog creation and specification of module 1 and 2
F: Coding for module 1 and 2
G: Testing for module 1 and 2
H: System testing and Integration testing
I: Final Release

Color code:

Andy	
Bill	
Cory	
Anna	
John	





### 13. Earned Value Analysis

Task	Planned Effort	Actual Effort
1	6	6.5
2	5	7
3	5	4.5
4	4	6
5	5	5.5
6	7	9
7	7	8
8	10	13
9	8	10
10	7	
11	9	
12	6	
Given Total Task = 42		
Effort Estimated = 346 Person Day		

- Total working days =  $DM * 22 = 7.126 * 22 \text{ Days}$   
 $= 156.772 \text{ Days}$   
 $\sim 157 \text{ Days}$
- Days Person-days =  $PM * 22 = 15.74 * 22$   
 $= 346.28 \text{ Person Day}$   
 $\sim 346 \text{ Person Day}$
- Budget At Completion, **BAC** = 346
- Budget Cost of Work Performed,  
**BCWP** =  $6+5+5+4+5+7+7+10+8$   
 $= 57$
- Budget Cost of Work Scheduled,  
**BCWS** =  $6+5+5+4+5+7+7+10+8+7+9+6$   
 $= 79$
- Actual Cost of Work Performed,  
**ACWP** =  $6.5+7+4.5+6+5.5+9+8+13+10$   
 $= 69.5$

Scheduled Performance Index,  $SPI = BCWP/BCWS = 57/79 = 0.72$

Schedule Variance,  $SV = BCWP - BCWS = 57 - 79 = -22 \text{ Days}$

Cost Performance Index,  $CPI = BCWP/ACWP = 57/69.5 = 0.82$

Cost Variance,  $CV = BCWP - ACWP = 57 - 69.5 = -12.5 \sim 13$

% scheduled for completion =  $BCWS/BAC = 79/346 = 22.83 \%$

% complete =  $BCWP/BAC = 57/346 = 16.47 \%$

## 14. Risk Management

Risk	Catagory	Probability	Impact	Risk (Mitigation, Monitoring, Management)
Size estimate may be significantly low	PS	60%	2	<p><b>Mitigation:</b> Regularly review and update project estimates based on ongoing development and feedback.</p> <p><b>Monitoring:</b> Track project progress against estimated timelines and adjust estimates as necessary.</p> <p><b>Management:</b> Ensure open communication channels for team members to raise concerns about estimates and provide support for accurate estimation.</p>
Larger number of users than planned	PS	70%	3	<p><b>Mitigation:</b> Design the system to be scalable and able to accommodate a larger user base.</p> <p><b>Monitoring:</b> Monitor user growth trends and system performance to anticipate scalability issues.</p> <p><b>Management:</b> Have contingency plans in place to rapidly scale resources if unexpected user growth occurs.</p>
Legal risk may arise from legal and regulatory authorities	BU	20%	2	<p><b>Mitigation:</b> Conduct thorough legal research and compliance checks during the planning phase.</p> <p><b>Monitoring:</b> Stay updated on changes in relevant laws and regulations that may affect the project.</p> <p><b>Management:</b> Allocate resources for legal consultation and ensure compliance measures are implemented and followed.</p>
End-users resist system	BU	40%	3	<p><b>Mitigation:</b> Involve end-users in the development process through user testing and feedback sessions.</p> <p><b>Monitoring:</b> Track user satisfaction and feedback throughout development and post-launch.</p> <p><b>Management:</b> Address user concerns promptly and iteratively improve the system based on feedback.</p>
Market risk due to competition	BU	60%	1	<p><b>Mitigation:</b> Conduct thorough market research to understand competitors and differentiate the product.</p> <p><b>Monitoring:</b> Keep track of market trends and competitor actions.</p> <p><b>Management:</b> Stay agile and be prepared to adjust the product strategy based on market</p>

				dynamics.
Funding will be lost	CU	40%	1	<p><b>Mitigation:</b> Diversify funding sources and maintain good relationships with investors.</p> <p><b>Monitoring:</b> Keep a close eye on financial metrics and funding sources.</p> <p><b>Management:</b> Have contingency plans in place in case funding is lost, such as seeking alternative funding or scaling back operations.</p>
Customer will change requirement	PS	80%	2	<p><b>Mitigation:</b> Foster clear communication channels with customers and document requirements thoroughly.</p> <p><b>Monitoring:</b> Regularly engage with customers to understand their evolving needs.</p> <p><b>Management:</b> Have a flexible development process that can accommodate changing requirements without significantly impacting timelines or budgets.</p>
Technology will not meet expectations	TE	30%	1	<p><b>Mitigation:</b> Conduct thorough technology assessments and proofs of concept before committing to a specific technology stack.</p> <p><b>Monitoring:</b> Continuously evaluate technology performance and user feedback.</p> <p><b>Management:</b> Have backup plans in place in case the chosen technology does not meet expectations, such as alternative technologies or development approaches.</p>
Project purpose and need is not well defined	BU	30%	1	<p><b>Mitigation:</b> Invest time in clearly defining project objectives and requirements before starting development.</p> <p><b>Monitoring:</b> Regularly review project objectives and requirements to ensure alignment with stakeholder expectations.</p> <p><b>Management:</b> Have mechanisms in place to gather and incorporate feedback from stakeholders to refine project purpose and needs as necessary.</p>
Management and financial authority structure are not yet well defined	BU	60%	2	<p><b>Mitigation:</b> Establish clear governance structures and decision-making processes early in the project.</p> <p><b>Monitoring:</b> Regularly review and adjust governance structures based on project needs and feedback.</p> <p><b>Management:</b> Ensure all team members understand their roles and responsibilities in the decision-making process and provide support for effective communication and collaboration.</p>
Overall project schedule delay	PS	60%	2	<p><b>Mitigation:</b> Implement robust project management practices, including setting realistic timelines, identifying and mitigating</p>

				<p>risks, and regularly monitoring progress.</p> <p><b>Monitoring:</b> Track project milestones and deliverables closely to identify potential delays early.</p> <p><b>Management:</b> Take proactive measures to address issues causing delays, such as reallocating resources or adjusting project priorities.</p>
Staff inexperienced	ST	60%	2	<p><b>Mitigation:</b> Provide training and mentorship programs for inexperienced staff members.</p> <p><b>Monitoring:</b> Monitor staff performance and identify areas where additional support or training may be needed.</p> <p><b>Management:</b> Assign experienced mentors to inexperienced staff members and provide ongoing support and feedback to help them develop their skills.</p>
Staff turnover will be high	TE	40%	2	<p><b>Mitigation:</b> Implement strategies to improve employee retention, such as offering competitive compensation and benefits, providing opportunities for career development, and fostering a positive work environment.</p> <p><b>Monitoring:</b> Keep track of employee satisfaction and turnover rates.</p> <p><b>Management:</b> Conduct exit interviews to understand reasons for turnover and take proactive measures to address any underlying issues.</p>
Load control	TE	40%	2	<p><b>Mitigation:</b> Implement load balancing mechanisms to distribute workload evenly across servers.</p> <p><b>Monitoring:</b> Utilize performance monitoring tools to track system load and identify potential bottlenecks.</p> <p><b>Management:</b> Allocate resources for scaling infrastructure based on load requirements.</p>
Cyber control breach	PS	20%	2	<p><b>Mitigation:</b> Enhance network security measures such as firewalls, intrusion detection systems, and regular security audits.</p> <p><b>Monitoring:</b> Implement real-time threat detection systems to promptly identify and respond to potential breaches.</p> <p><b>Management:</b> Allocate resources for cybersecurity training and awareness programs for all project stakeholders.</p>
Loss of digital data	CU	20%	1	<p><b>Mitigation:</b> Implement regular backups of critical data to secure and remote locations.</p>

				<p><b>Monitoring:</b> Establish automated monitoring systems to detect anomalies in data storage and access patterns.</p> <p><b>Management:</b> Develop and enforce data management policies, including access controls and encryption protocols.</p>
Reliable AI models	TE	30%	2	<p><b>Mitigation:</b> Employ robust validation and testing procedures to ensure the accuracy and reliability of AI models.</p> <p><b>Monitoring:</b> Continuously monitor model performance and recalibrate as needed based on real-world feedback.</p> <p><b>Management:</b> Allocate resources for ongoing research and development to improve AI model reliability and resilience.</p>
Weather and environment variability	DE	60%	3	<p><b>Mitigation:</b> Develop contingency plans and alternative strategies to adapt to changing weather and environmental conditions.</p> <p><b>Monitoring:</b> Utilize weather forecasting and environmental monitoring systems to anticipate and mitigate potential impacts.</p> <p><b>Management:</b> Establish partnerships or collaborations with relevant stakeholders (e.g., meteorological agencies) to access real-time data and insights for better decision-making.</p>