SereniChat - Your Safe Haven for Mental Wellness

Software Requirement Engineering

Sec: **B**

Project submitted

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1. PROBLEM DOMAIN

1.1 Background to the Problem

Overview:

Mental health challenges have become a pervasive issue globally, affecting individuals irrespective of age, gender, or socio-economic status. According to the World Health Organization (WHO), mental disorders contribute significantly to the global burden of disease and disability. Despite increased awareness, stigma, limited access to mental health resources, and the inability to seek timely help persist as major obstacles.

Root Cause of the Problem:

The root cause lies in a myriad of factors:

1. **Stigma and Misconceptions:** Historically, mental health issues have been stigmatized, leading to misconceptions and reluctance to seek help. This stigma prevents many individuals from acknowledging their struggles or reaching out for support.

2. **Limited Access to Mental Health Services:** Geographical constraints, financial limitations, and a shortage of mental health professionals contribute to the inadequate accessibility of mental health services. Rural areas and underserved communities often face a scarcity of mental health resources.

3. **Underestimation of Mental Health Importance:** Society has historically downplayed mental health compared to physical health, leading to neglect and underestimation of its significance. As a result, people may not prioritize seeking help or supporting those who do.

Importance of Addressing the Problem:

The significance of addressing mental health issues cannot be overstated:

- **Public Health Crisis:** The increasing prevalence of mental health disorders represents a substantial public health crisis. Untreated mental health issues can lead to severe consequences, including impaired functioning, social isolation, and in extreme cases, self-harm or suicide.

- **Impact on Individuals and Society:** Mental health challenges not only affect individuals directly but also impact their families, workplaces, and communities. By addressing mental health, we enhance overall societal well-being and productivity.

- **Opportunity for Intervention:** Creating accessible and stigma-free avenues for mental health support presents an opportunity for timely intervention, enabling individuals to seek help, receive guidance, and manage their mental health effectively.

1.2 Solution to the Problem

Proposed Solutions:

SereniChat aims to address the prevalent challenges in accessing mental health support by offering an innovative platform that integrates AI-driven chatbot assistance and connects users with certified counselors. The proposed solutions include:

1. **AI-Powered Chatbot Support:** The application will offer a free AI-driven chatbot that provides immediate support, offers coping strategies, and directs users to relevant resources based on their queries. This feature ensures immediate accessibility to mental health guidance irrespective of time constraints or geographical limitations.

2. **Access to Certified Counselors:** SereniChat will provide a paid subscription-based service, facilitating real-time interactions with certified mental health professionals. Users can schedule online sessions, engage in personalized counseling, and receive tailored guidance, ensuring a deeper level of support for those in need.

App Description and Purpose:

SereniChat is a comprehensive web application designed to offer immediate mental health support and professional counseling. The primary objectives and goals of the app include:

- Providing a stigma-free and easily accessible platform for mental health support.

- Empowering users to manage mental health concerns effectively.

- Facilitating seamless connections between users and certified counselors for personalized guidance and therapy sessions.

Feasibility and Business Objectives:

The proposed solution aligns with the business objective of creating a scalable and sustainable platform. Leveraging AI for initial support ensures immediate accessibility at minimal cost, while the paid subscription model for counselor sessions ensures a viable revenue stream to sustain the platform's operations and growth.

Existing Studies and Software Solutions:

Research in the mental health domain highlights the significance of technology-based interventions. Existing software solutions like Talkspace and BetterHelp offer online therapy services. However, SereniChat aims to differentiate itself by combining AI chatbot support with direct access to certified counselors on a single platform, catering to both immediate assistance and comprehensive counseling needs.

2. SOLUTION DESCRIPTION

2.1 System Features

SereniChat System Functional Requirements and Quality Attributes:

1. **User Authentication and Profile Management:**
   - Functional Requirements:
     - User registration and login with email/password or social media accounts.
     - Profile creation/editing with options to add personal information and mental health preferences.
   - Quality Attributes:
     - Security: Robust encryption methods for safeguarding user data.
     - Usability: Intuitive interface for profile management.

2. **AI-Powered Chatbot Assistance:**
   - Functional Requirements:
     - Real-time AI chatbot providing immediate responses and coping strategies.
     - Natural Language Processing (NLP) for understanding user queries.
   - Quality Attributes:
     - Responsiveness: Minimal latency in chatbot interactions.
     - Accuracy: High precision in understanding and addressing user concerns.

3. **Counselor Directory and Scheduling:**
   - Functional Requirements:
     - Searchable directory of certified counselors with profiles and expertise.
     - Booking and scheduling system for appointments and online sessions.
   - Quality Attributes:
     - Accessibility: Easy navigation and filtering options for counselor selection.
     - Reliability: Secure and dependable scheduling system.

4. **Real-time Video/Audio Sessions:**
   - Functional Requirements:
     - Video/audio call functionality for users and counselors during sessions.
     - Chatbox for session notes and resource sharing.
   - Quality Attributes:
     - Connectivity: Stable and high-quality video/audio streaming.
     - Privacy: Secure and encrypted communication channels.

5. **Payment and Subscription Management:**
   - Functional Requirements:
     - Subscription plans for accessing counselor sessions with multiple payment options.
     - Automated billing and invoice generation.
   - Quality Attributes:
     - Transaction Security: Secure payment gateway integration.
     - User-Friendly: Clear subscription plans and easy payment processes.

6. **Feedback and Rating System:**

- Functional Requirements:
  - User feedback submission after counseling sessions.
  - Counselor ratings and reviews for community guidance.
- Quality Attributes:
  - Accountability: Encourage counselor accountability and service improvement.
  - Community Engagement: Empower users to make informed decisions.
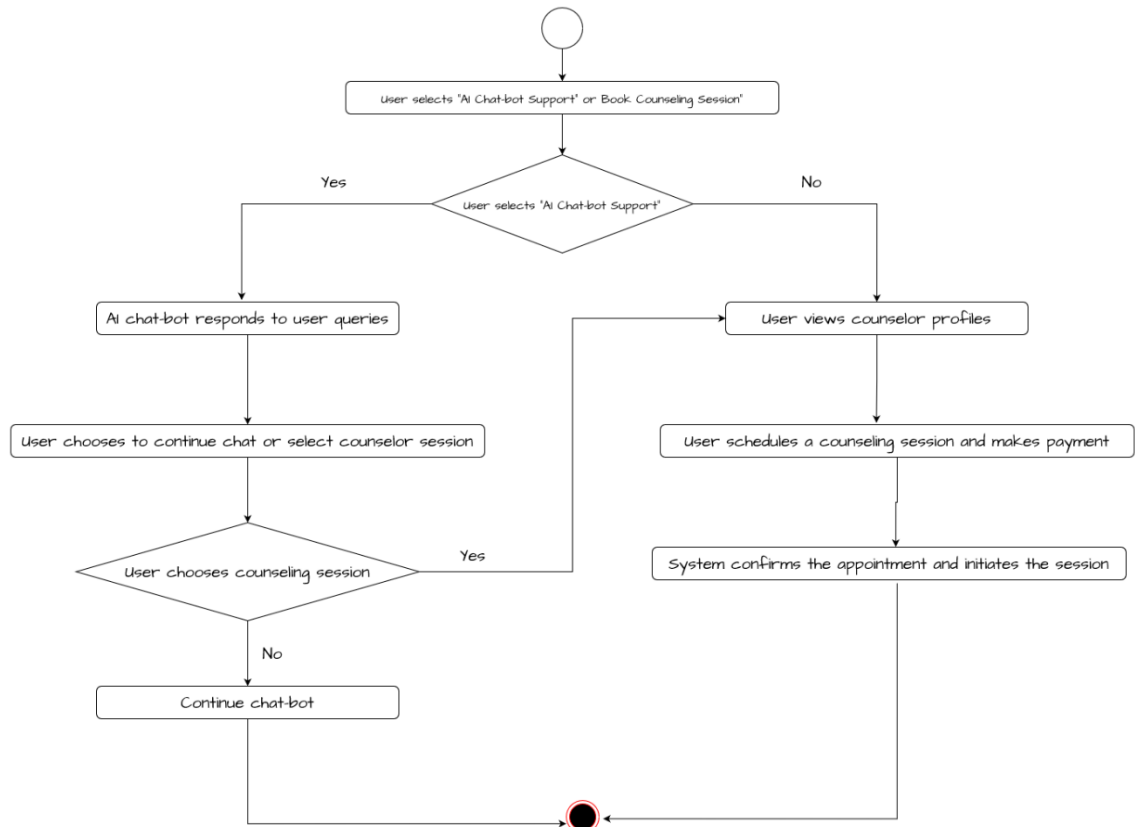
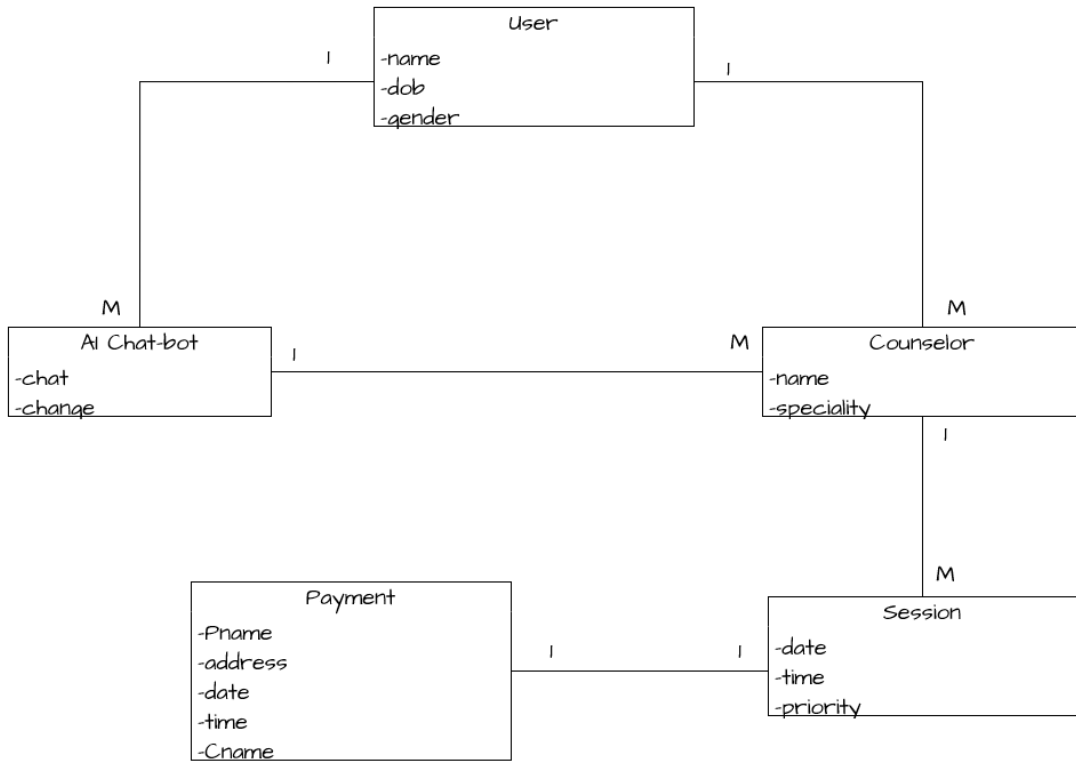## 2.2 UML Diagrams

Figure: Activity diagram

User
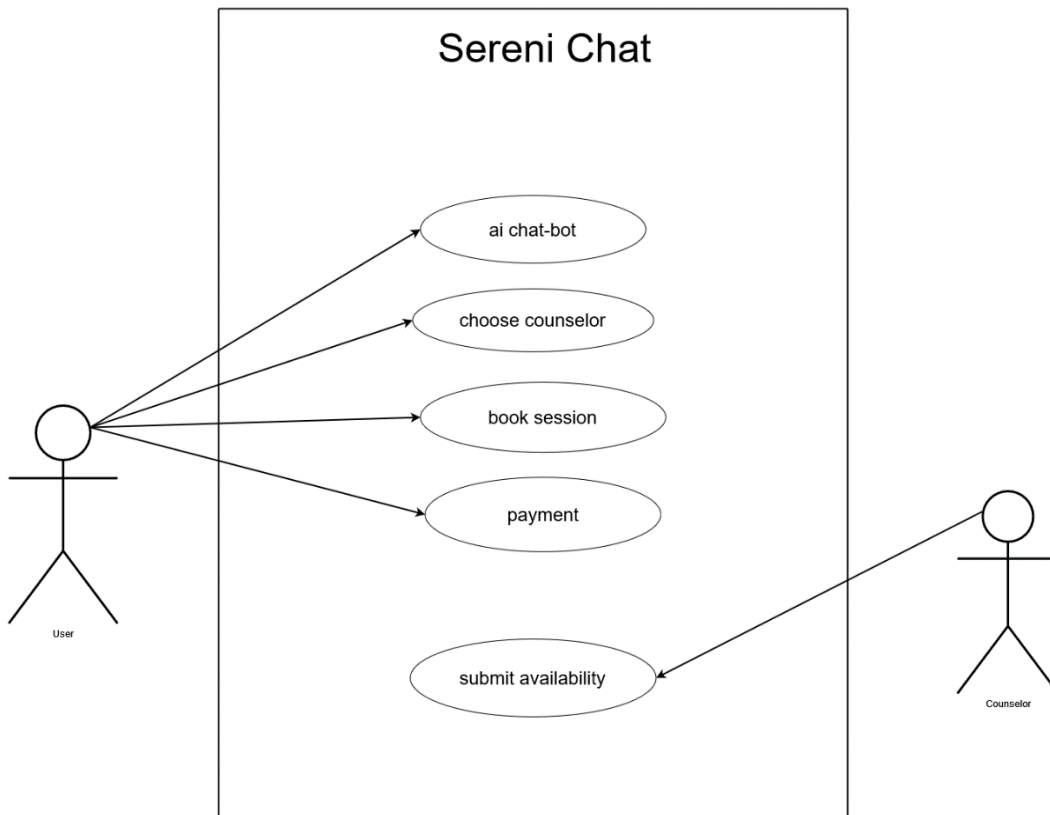-name
-dob
-gender

AI Chat-bot
-chat
-change

Counselor
-name
-speciality

Payment
-Pname
-address
-date
-time
-Cname

Session
-date
-time
-priority

Figure: Class diagram

Sereni Chat

- ai chat-bot
- choose counselor
- book session
- payment
- submit availability

User

Counselor

Figure: Use Case Diagram

3. Social Impact

Benefits to Society through SereniChat:
1. **Increased Accessibility to Mental Health Support:**
   - **Geographical Reach:** SereniChat transcends geographical barriers, offering support to individuals in remote or underserved areas lacking access to mental health resources.
   - **Immediate Assistance:** The free AI chatbot provides immediate support, offering coping strategies and resources 24/7, enabling timely intervention for individuals in distress.
2. **Reducing Stigma and Promoting Mental Health Awareness:**
   - **Stigma Reduction:** By offering an anonymous platform, SereniChat helps mitigate the stigma surrounding mental health issues, encouraging more individuals to seek help without fear of judgment.
   - **Educational Resources:** The platform disseminates mental health information and coping mechanisms, contributing to increased awareness and understanding of mental health concerns.
3. **Empowering User Engagement and Well-being:**
   - **Community Support:** SereniChat fosters a community-driven environment, allowing users to connect, share experiences, and support each other, thus reducing feelings of isolation.
   - **User Empowerment:** By providing access to certified counselors, the app empowers individuals to actively manage their mental health, fostering a sense of control over their well-being.
4. **Facilitating Timely Professional Intervention:**
   - **Prompt Counseling Services:** Paid subscription-based access to certified counselors ensures individuals receive personalized guidance and therapy sessions, addressing mental health concerns effectively.
   - **Preventive Approach:** Early intervention and counseling sessions may prevent the escalation of mental health issues, reducing the overall burden on healthcare systems.
5. **Enhancing Overall Societal Well-being:**
   - **Improved Productivity:** A mentally healthy population is more productive and engaged, positively impacting workplaces, education, and overall societal contributions.
   - **Reduced Healthcare Costs:** By addressing mental health issues proactively, SereniChat may contribute to reducing long-term healthcare costs associated with untreated mental illnesses.

SereniChat aims to contribute significantly to societal well-being by breaking down barriers to mental health support, promoting awareness, fostering community engagement, and empowering individuals to prioritize and manage their mental health effectively. Through these initiatives, the app aims to create a positive and lasting impact on society's mental health landscape.

4. Development Plan with Project Schedule

Planning:
- Define the project scope, objectives, and requirements.
- Create a project plan outlining tasks, timelines, and resource allocation.
- Identify potential risks and develop a risk mitigation strategy.

Feasibility Study:
- Assess the technical, operational, and economic feasibility of the project.
- Evaluate whether the proposed solution aligns with organizational goals and resources.

System Design:
- Define the system architecture, including hardware and software components.
- Create detailed technical specifications and system documentation.
- Design the user interface and system interfaces.

Implementation (Coding):
- Write and test the code based on the design specifications.
- Conduct unit testing to ensure individual components function as intended.
- Collaborate with other team members to integrate code and resolve issues.

Testing:
- Conduct various testing activities, including system testing, integration testing, and user acceptance testing.
- Identify and fix defects and issues discovered during testing.
- Ensure that the software meets the specified requirements and is ready for deployment.

Deployment:
- Release the software for production use.
- Develop deployment plans and coordinate with relevant stakeholders.
- Monitor the software during initial use and address any post-deployment issues.

Maintenance and Support:
- Provide ongoing support and maintenance to address issues and make necessary updates.
- Respond to user feedback and incorporate improvements.
- Plan for future updates and enhancements.

Documentation:
- Maintain comprehensive documentation throughout the SDLC.
- Document code, design decisions, and changes made during development.
- Create user manuals and other relevant documentation for end-users.

Review and Evaluation:
- Conduct a post-implementation review to assess the success of the project.
- Gather feedback from stakeholders and team members for continuous improvement.
- Identify lessons learned and areas for enhancement in future projects.

Main Project:

List of Tasks:

Setting Deadline:

Add epic /
☑ SC-28

System Design

In Progress ⌄   ⚡ Actions ⌄

Start date   None

Due date   None

Description
Add a description...

Details   ⌃

Assignee   SS Shohorab H Shawon
                         Assign to me

Labels   None

Parent NEW   None

Sprint   SC Sprint 2 +1

S   Add a comment...

Pro tip: press M to comment

Add epic /
☑ SC-29

Implementation

In Progress ⌄   ⚡ Actions ⌄

Start date   None

Due date   None

Description
Add a description...

Details   ⌃

Assignee   R rishatryan007
                        Assign to me

Labels   None

Parent NEW   None

Sprint   SC Sprint 2 +1

S   Add a comment...

Pro tip: press M to comment

Add epic /
☑ SC-30

Testing Phase

In Progress ⌄   ⚡ Actions ⌄

Start date   None

Due date   None

Description
Add a description...

Details   ⌃

Assignee   SI Shaian Islam
                        Assign to me

Labels   None

Parent NEW   None

Sprint   SC Sprint 2 +1

S   Add a comment...

Pro tip: press M to comment

Add epic /
☑ SC-31

Deployment Phase

In Progress ⌄   ⚡ Actions ⌄

Start date   None

Due date   None

Description
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Details   ⌃

Assignee   S sakibrdsakib1

Labels   None

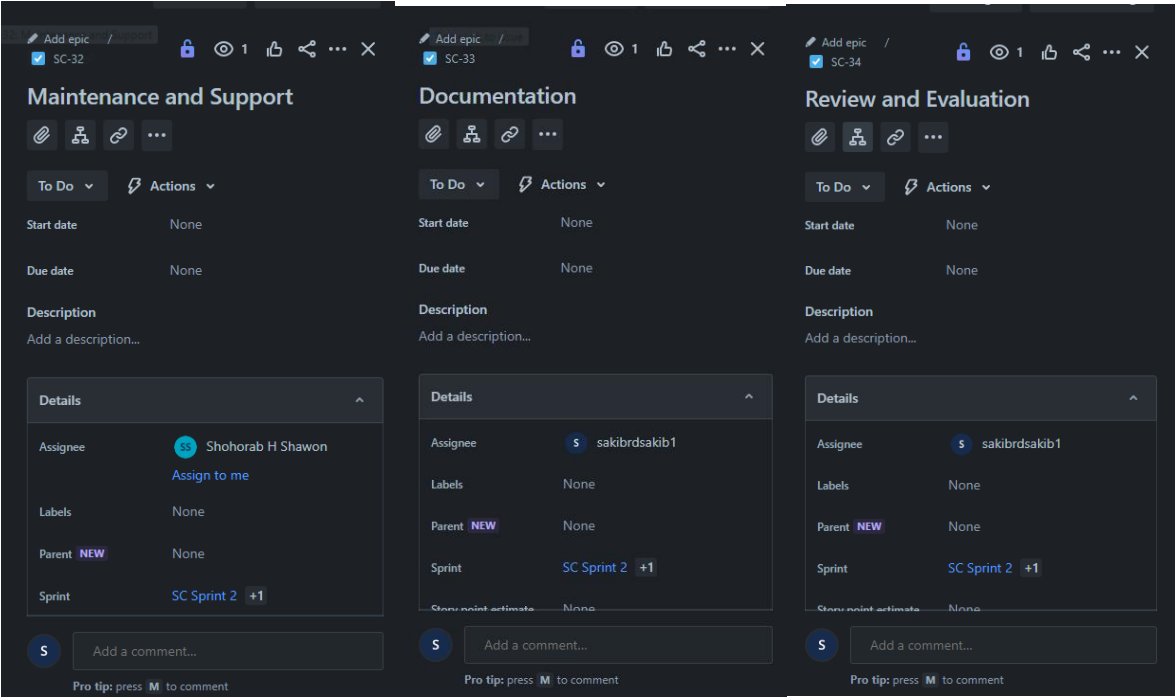Parent NEW   None

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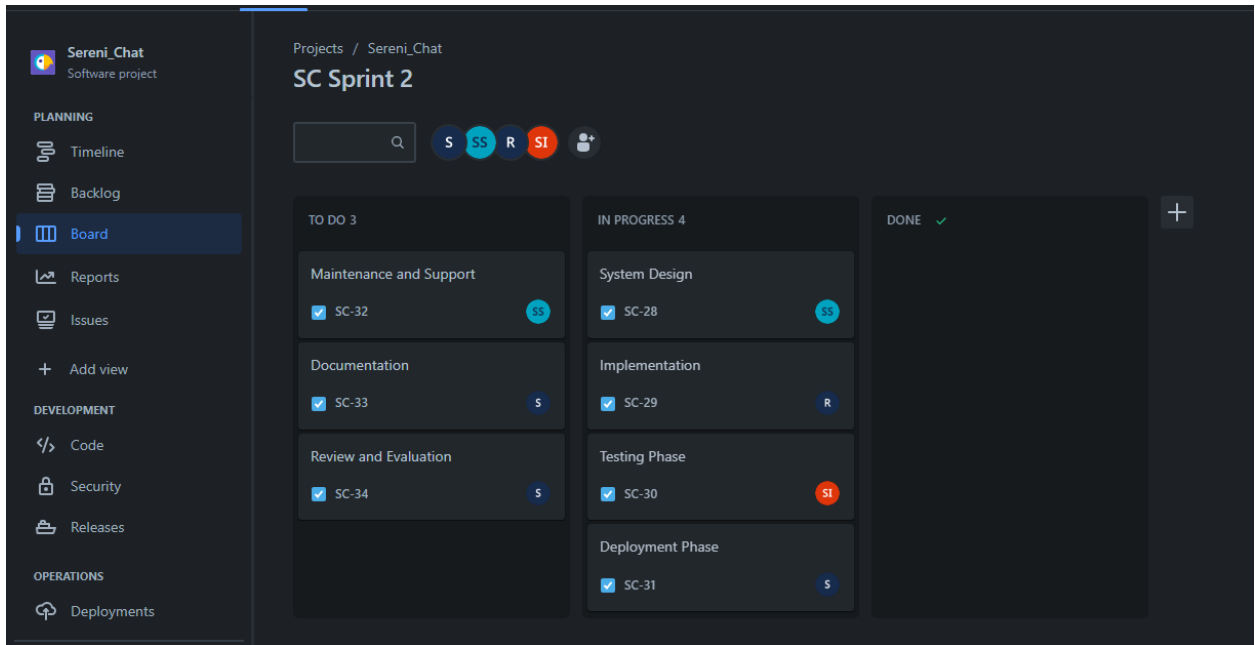
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Project Schedule:

Sprints:

Project Template:
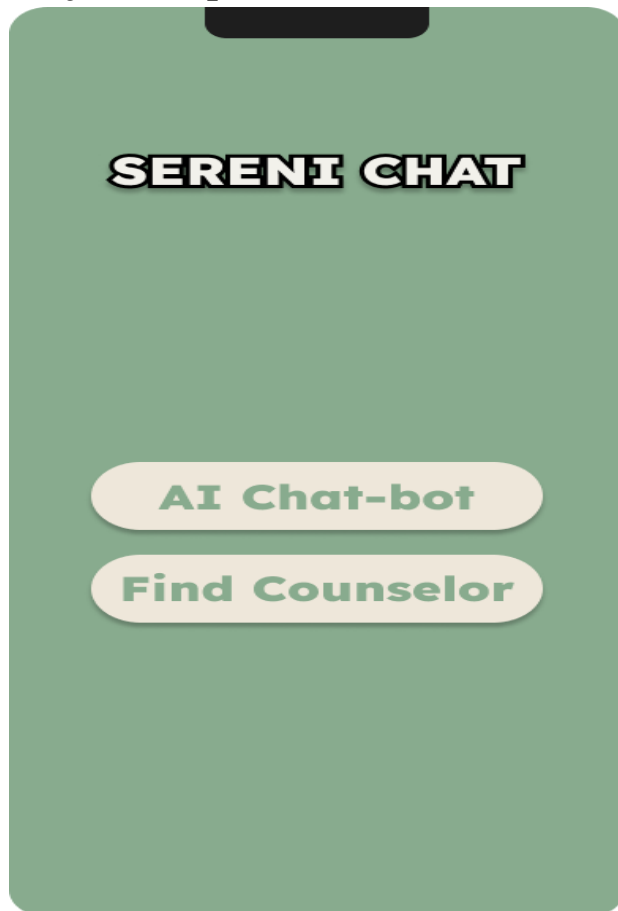
Find Counselor

Dr. Vivek Vindra — Consult Now

Dr. Hasan Mahmud — Consult Now

Dr. Rishat Hasan — Consult Now

Dr. Farhan Ahmed — Consult Now

Message

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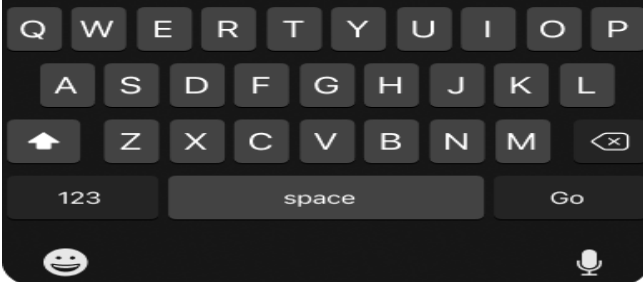
Dr. Vivek Vindra

MBBS, MPhil (Psychiatry), PhD (Psychiatry), FWPA (USA)
Psychiatry (Mental Diseases) Specialist & Psychotherapist

Sunday–Friday
05:00PM–08:00PM
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Payment

PAYMENT

bKash Payment

🛒 **Payment**
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Your bKash Account number

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By clicking on **Confirm**, you are aggreing to the **terms & conditions**

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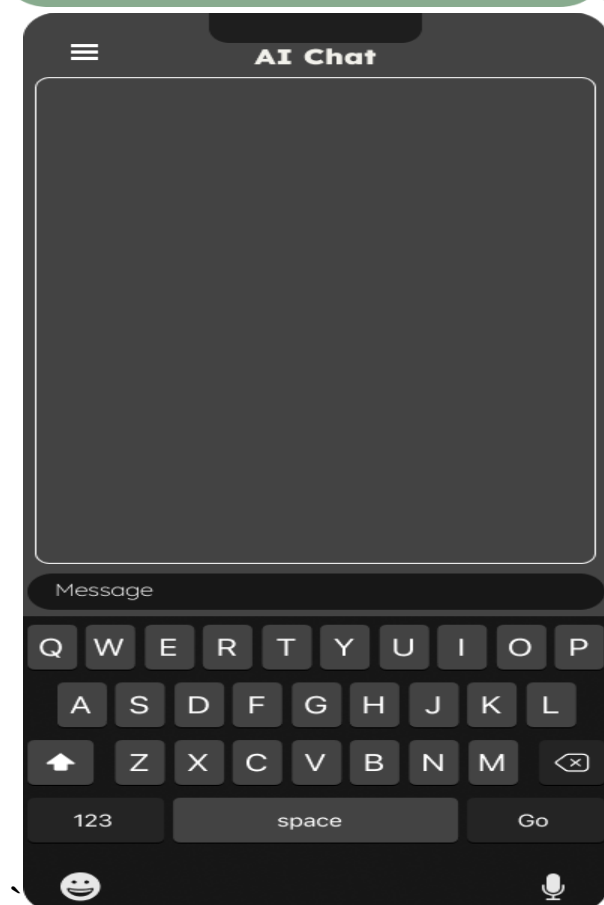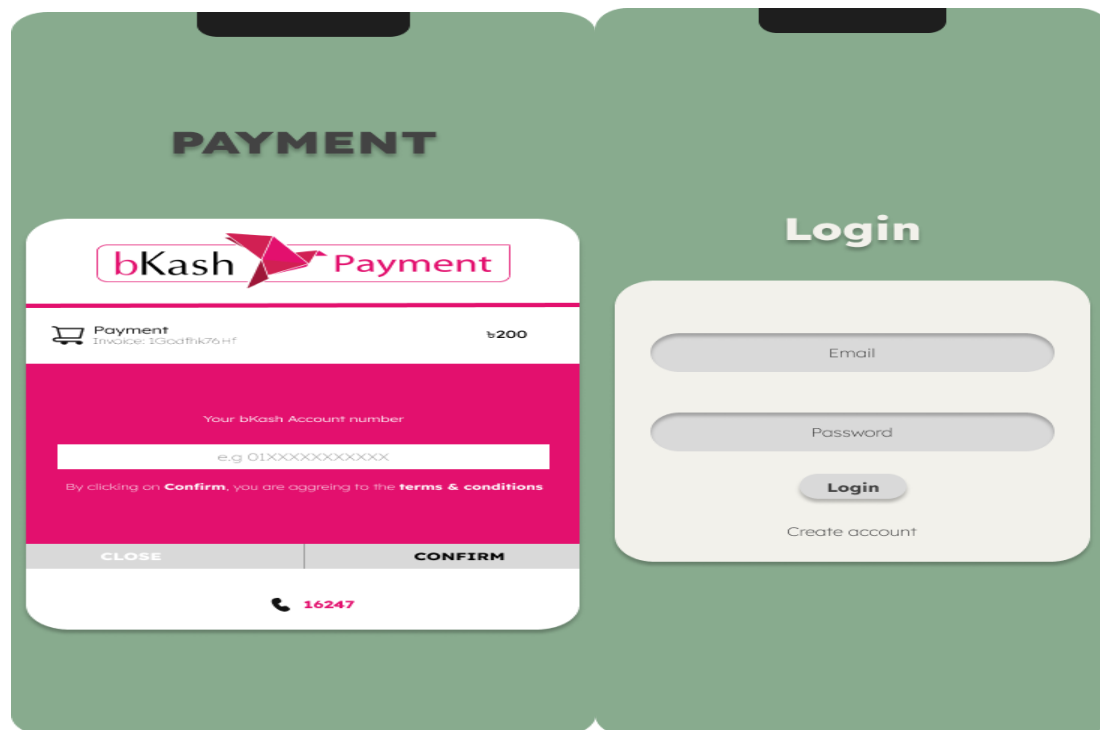
5. Marketing Plan

Short-Term Marketing Strategies (0-6 months):

1. **Social Media Campaign Launch:**
   - Create profiles on platforms like Instagram, Facebook, Twitter, and LinkedIn.
   - Share informative content, mental health tips, and highlight SereniChat's features.
   - Engage with users through polls, Q&A sessions, and interactive posts.
2. **Influencer Partnerships:**
   - Collaborate with mental health influencers, therapists, or celebrities to endorse SereniChat.
   - Facilitate live sessions, webinars, or AMA (Ask Me Anything) sessions with influencers.
3. **Content Marketing:**
   - Start a blog on mental health-related topics, sharing insights, success stories, and advice.
   - Guest posts on relevant websites or publications to increase visibility.

Long-Term Marketing Strategies (6+ months):

1. **Community Building and Engagement:**
   - Foster an online community within SereniChat for users to share experiences and support each other.
   - Organize virtual events, discussion forums, or support groups.
2. **Partnerships with Organizations:**
   - Collaborate with mental health NGOs, educational institutions, or workplaces to promote SereniChat as a mental health resource.
   - Offer group subscriptions or tailored packages for organizations.
3. **SEO and App Store Optimization:**
   - Invest in optimizing website content and app store descriptions using relevant keywords for better visibility in search results.

Continuous Marketing Strategies:

1. **Customer Relationship Management (CRM):**
   - Implement a CRM system to gather user feedback, address concerns, and personalize user experiences.
   - Regularly engage with users through email newsletters, updates, and surveys.
2. **Performance Monitoring and Analytics:**
   - Continuously analyze marketing campaign performance using tools like Google Analytics.
   - Adjust strategies based on user engagement, conversion rates, and feedback.
3. **Referral and Loyalty Programs:**
   - Incentivize users to refer friends or family by offering discounts or additional sessions.
   - Implement loyalty programs for frequent users, rewarding continued engagement.

6. Cost and Profit Analysis

Cost Analysis:

Development Costs:
1. **Software Development:** 500,000 BDT
2. **Testing and Quality Assurance:** 150,000 BDT
3. **Documentation and Compliance:** 50,000 BDT

Total Development Costs: 700,000 BDT

Marketing Costs:
1. **Digital Marketing:** 200,000 BDT
2. **Partnerships and Events:** 100,000 BDT

Total Marketing Costs: 300,000 BDT

Counselor Costs (Annual):
1. **Salaries/Fees for Certified Counselors**: 2,400,000 BDT

Miscellaneous Costs (Estimated): 200,000 BDT

Total Investment Required: 3,600,000 BDT

Profit Analysis:

Revenue Streams:
1. **Subscription Model:** Anticipated revenue from paid counseling sessions – 3,000,000 BDT annually.
2. **In-App Purchases:** Additional features or premium subscriptions – 1,000,000 BDT annually.
3. **Advertising or Partnerships:** Expected income from ad placements or collaborations - 500,000 BDT annually.

Total Projected Annual Revenue: 4,500,000 BDT

Projected Annual Operational Costs (including development and marketing): 3,600,000 BDT.

Anticipated Annual Profit: 900,000 BDT

Return on Investment (ROI):
Investment Required: 3,600,000 BDT
Anticipated Annual Profit: 900,000 BDT

ROI Calculation: (Anticipated Annual Profit / Investment) * 100 = (900,000 / 3,600,000) * 100 = 25%

7. Reference

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2. https://www.talkspace.com/
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5. https://www.who.int/health-topics/mental-health