PROJECT CHARTER

Project Name: Development of a User-Centric Knowledge and Self-Awareness App (Prajnayana)	***Project Coordinator:*** ***Dr. Sam S. Ramanujan***
Date:11/07/2024	***Prepared By: Sasikiran Sayyapureddi*** ***SXS73800***

1. PROJECT VISION

This project was born from a realization that mental health support is not a luxury but a necessity in today's world. While I was studying at University of Central Missouri, our community received tragic news that a fellow student had taken her own life, overwhelmed by mental strain and without sufficient support. This incident highlighted how essential mental health support systems are, especially in environments where pressure runs high.

My project comes from my personal life long battle with mental health and the recent journey of understanding and addressing challenges that stem from Anxiety and ADHD. My personal journey has made me very aware of the often silent, unbearable struggles endured by students, colleagues, and others around us. This realization led me to create a resource—a guiding force that could help not only me, but countless others facing similar challenges. In today's world, where mental health issues continue to rise, it's essential to create systems that offer people real, tangible support when they feel overwhelmed, disconnected, or lost. This vision drives every aspect of this project.

It aspires to be a supportive companion, much like a "big brother" for users. Inspired by the guidance and insight of a mentor and is designed to help individuals gently navigate through life's challenges, encouraging them to recognize and break through their own limitations. By providing tools, insights, and prompts that facilitate self-awareness, the app empowers users to overcome self-imposed barriers, access their true potential, and set a course toward success.

At its core, the app is about helping people "get out of their own way." It creates a safe, compassionate space where users can reflect, grow, and build habits aligned with their unique goals and values. With features that encourage mindful self-reflection, adaptive guidance, and accountability, the system will serve as a personalized support framework that nurtures holistic growth, spanning mental, emotional, and physical well-being.

Looking forward, this app aspires to evolve into a dynamic, adaptive support system accessible to diverse users worldwide. By expanding to include advanced personalization through AI and broader language support, it will serve as a long-term, self-sustaining companion, empowering individuals across varied backgrounds to navigate their unique paths with resilience and confidence.

2. PROJECT PURPOSE

This project combines insights from personal growth with my academic background, aiming to design an adaptable, empathetic, user-centered, digital framework that empowers individuals to navigate life's challenges using self-awareness and knowledge-based resources. This With the aim of transforming my insights into a practical resource, I'm developing a prototype of a User-Centric Knowledge and Self-Awareness App.

The primary goals of this app development project are:

1. ***Develop an Adaptive Framework:*** *Establish a system that integrates technological tools and therapeutic strategies to help users identify, understand, and effectively address personal life patterns and challenges. This framework aims to foster self-sufficiency through personalized guidance, knowledge prompts, and cognitive-behavioral techniques. Streamlit's interactive components will enhance user engagement within this adaptive framework by enabling a responsive interface that encourages active self-reflection.*

2. ***Create a Demo-Ready Prototype for Presentation:*** *Present a preliminary but functional prototype application, demonstrating essential features and shows potential for future expansions. With Streamlit's fast, Python-based prototyping, the project will allow for quick updates to the user interface, supporting iterative improvements based on testing and feedback.*

3. ***Demonstrate Development and Project Management Skills****: Demonstrate proficiency in Python, AWS, and fundamental project management principles by building, testing, and documenting the app's initial functionality. Leveraging Agile methodologies, utilizing tools like Trello to track progress and manage tasks with a professional, iterative approach. Git versioning to manage the development process and meet deliverable milestones effectively.*

4. ***Establish a Foundation for AI Integration:*** *Build the app with a Python-based structure that will support future machine learning and AI enhancements, allowing for tailored recommendations and dynamic user experience. Streamlit's compatibility with Python-based AI and data science libraries will facilitate smooth integration of personalized feedback features in later phases.*

5. ***Ensure Data Privacy and Security****: Implement robust security and privacy standards to protect user information, drawing from best practices in managing information security.*

6. ***Apply Key Legal and Ethical Standards:*** *Integrate IT legal knowledge by drafting clear data policies, disclaimers, and a user-friendly data privacy agreement, building user trust in the ethical handling of their data.*

The app aspires to serve as a resource that contributes to mental health awareness and personal growth, offering practical tools rooted in psychological principles and my own journey.

3. PROJECT SCOPE

SCOPE:

1. ***User Interface Development:*** *Develop a basic, user-friendly interface that focuses on self-awareness, stress management, and emotional resilience as key features. Streamlit will enable this interface to be both interactive and intuitive, allowing users to engage seamlessly with prompts, habit-tracking, and exercises in a clean, Python-based environment.*
2. ***Core Functionalities:*** *Include journaling and self-reflection prompts, habit tracking, self-awareness exercises, an introduction to cognitive-behavioral techniques. Streamlit's interactive widgets, like text areas for journaling and sliders for self-assessment, will support these core functionalities, fostering an engaging and responsive user experience.*
3. ***Use Python for front-end development, with data storage and security through AWS:*** *Streamlit allows for a unified development approach, enabling the entire front-end to be built with Python. This simplicity also streamlines connectivity with AWS services for secure data handling and storage of user inputs.*
4. ***Legal Disclaimers and Terms:*** *Draft clear disclaimers covering data handling, privacy, and security practices.*

OUT OF SCOPE:

While future iterations may include AI/ML integration for adaptive learning, the current phase focuses on building a solid, user-centered foundation.

1. ***Advanced AI/ML Integration:*** *Full-scale machine learning and AI-driven analysis features beyond basic data processing.*
2. ***Comprehensive Mental Health Diagnostics:*** *No medical or diagnostic tools included; not intended to replace professional therapy or medical support.*
3. ***Multi-Language Support:*** *Prototype will initially support English only.*
4. ***Third-Party Integrations:*** *No integration with external health or wellness apps for initial prototype.*

5. ***Cross-Platform Deployment****: Limited to desktop and mobile web interfaces; no native app development for iOS/Android at this stage.*

Scope Summary

By leveraging Streamlit, the project scope emphasizes an interactive, Python-driven interface that prioritizes ease of use and quick engagement with self-reflection and habit-tracking features.

5. *TOOLS AND TECHONOLOGY*

Programming Language

- ***Python****: Core language for front-end development, chosen for its versatility and integration with data processing, AI/ML, and web frameworks.*

User Interface Framework

- ***Streamlit****: A Python-based web application framework used for building an interactive and responsive user interface. Streamlit will streamline the development of a clean, intuitive front-end, enabling real-time user interaction and visualization of self-reflection and habit-tracking data without the need for complex front-end programming.*

Cloud Infrastructure and AWS Services

- ***AWS S3****: Securely stores user data with accessibility aligned to privacy guidelines.*
- ***AWS EC2****: To host the application backend and support scalability for larger user loads.*
- ***AWS Lambda****: For running backend functions with serverless architecture, allowing efficient, on-demand processing.*
- ***AWS RDS****: To manage and scale a relational database for secure data storage.*
- ***AWS IAM****: For user access management and security protocols.*
- ***AWS CloudWatch****: For monitoring application health and performance.*
- ***AWS API Gateway****: To create and manage APIs for interaction between the front and back end.*
- ***AWS DynamoDB*** *(NoSQL data): A scalable database option for high-frequency data handling.*

Development Environment

- ***IDE****: Visual Studio Code (VS Code) as the primary development environment for code writing, testing, and debugging, with Python and AWS extensions for seamless integration.*

Project Management and Agile Tools

- ***Trello****: For tracking tasks, organizing Agile sprints, and managing project phases through Kanban boards.*
- ***Agile Methodology****: Using iterative sprint cycles to develop, test, and refine project features.*

Version Control and Repository Management

- ***GitHub****: For version control, collaboration, and hosting the codebase. Versioning practices ensure traceable changes and organized development.*

AI/ML Integration (Future Phase)

- *Placeholder for incorporating* ***AWS SageMaker*** *for machine learning models to provide adaptive, personalized feedback.*
- ***OpenAI API (ChatGPT)****: For advanced NLP capabilities in future expansions.*

5. DELIVERABLES

Project Documentation

- *Project Charter, Scope, Requirements, and Vision Document.*
- *Updated Project Charter reflecting any changes throughout development.*

Codebase

- *Initial code repository in GitHub with structured Python files.*
- *Version-controlled codebase with comments and documentation.*

User Interface Prototype

- *A working front-end prototype in Python, showcasing core user interactions.*
- *Interactive interface built with Streamlit, featuring responsive components for journaling, habit tracking, and self-assessment exercises.*
- *Responsive UI elements to handle basic user input and output.*

AWS Infrastructure Setup

- *Initial AWS configuration for hosting and data storage.*
- *Basic security and data protection setup for user information.*

Trello Board and Agile Tracking

- *Regularly updated Trello board reflecting Agile sprint progress.*
- *Completion of Kanban and sprint cycles aligned with project phases.*

Testing and Feedback Reports

- *Functional testing reports, addressing core functionalities.*
- *User feedback summary with implemented changes and final updates.*

Final Demo-Ready Prototype

- *Completed prototype, ready for demo with essential functionality and UI.*
- *Demonstration of Streamlit-powered interactive features, showcasing real-time user engagement and feedback on self-reflection and habit-tracking functionalities.*
- *A documented walk-through or video demo highlighting key features and user flow.*

6. TIMELINE AND MILESTONES

Phase 1: Initial Setup and Research (Weeks 1-2)

- *Finalize project scope and gather requirements.*
- *Set up AWS infrastructure, GitHub repository, and Trello boards.*
- *Configure the development environment to support rapid prototyping, including installation of necessary tools for front-end interactivity.*

Phase 2: Front-End Development (Weeks 3-5)

- *Develop initial user interface in Python.*
- *Implement core interactive components (e.g., user prompts, input forms).*
- *Test basic user interactions to confirm usability and flow, iterating as needed for clarity and responsiveness.*

Phase 3: Core Functionality and Data Management (Weeks 6-8)

- *Design and develop the core framework for storing and retrieving user inputs.*
- *Implement basic analytics features to track user engagement.*
- *Ensure smooth integration between the front-end components and AWS services to handle data securely and in real-time.*

Phase 4: Testing and User Feedback (Weeks 9-10)

- *Conduct initial testing (functional and usability testing).*
- *Gather feedback from a small group of test users to refine features.*
- *Leverage a fast update cycle to quickly implement feedback and make iterative improvements based on user testing results.*

Phase 5: Final Revisions and Prototype Completion (Weeks 11-12)

- *Address feedback and implement necessary changes.*
- *Prepare a demo-ready prototype for presentation.*
- *Create a scripted demo or video walk-through to highlight the app's functionality and user journey.*

7. FUTURE VISION

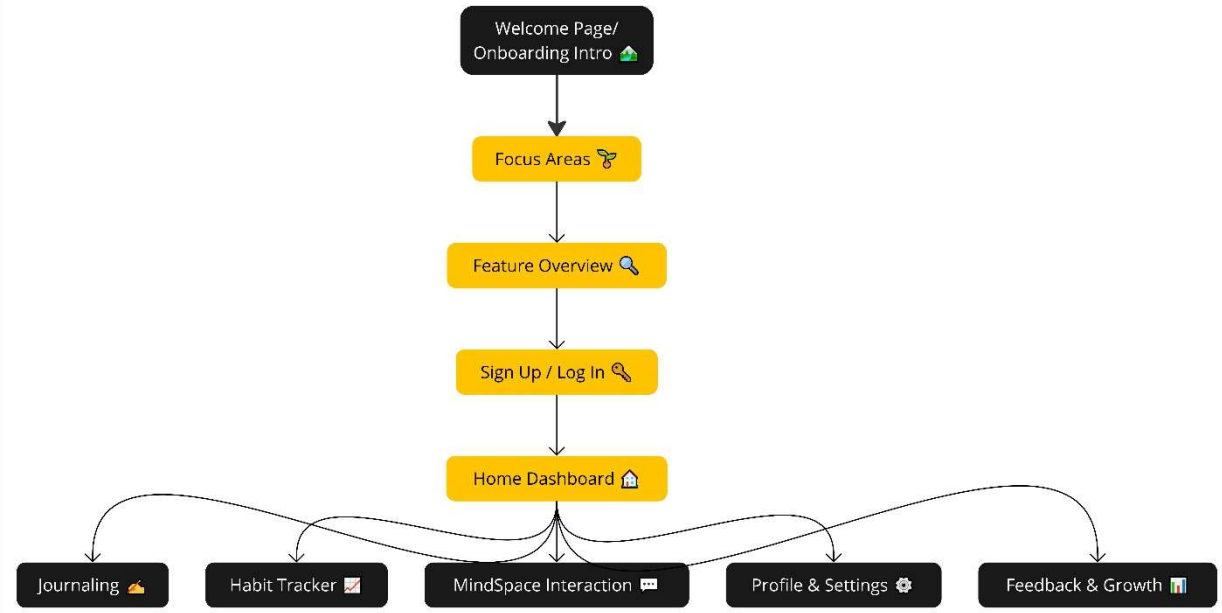
Looking forward, this app aspires to evolve into a dynamic, adaptive support system accessible to diverse users worldwide. By expanding to include advanced personalization through AI and broader language support, it will serve as a long-term, self-sustaining companion, empowering individuals across varied backgrounds to navigate their unique paths with resilience and confidence.

AI Integration*: Building on a Python-based structure, the app is designed to support future machine learning and AI enhancements, making it adaptable and able to deliver personalized insights. With AWS SageMaker as a planned platform for AI development, future phases could include tailored recommendations, dynamic responses based on user behavior, and adaptive prompts that evolve as users engage with the app.*

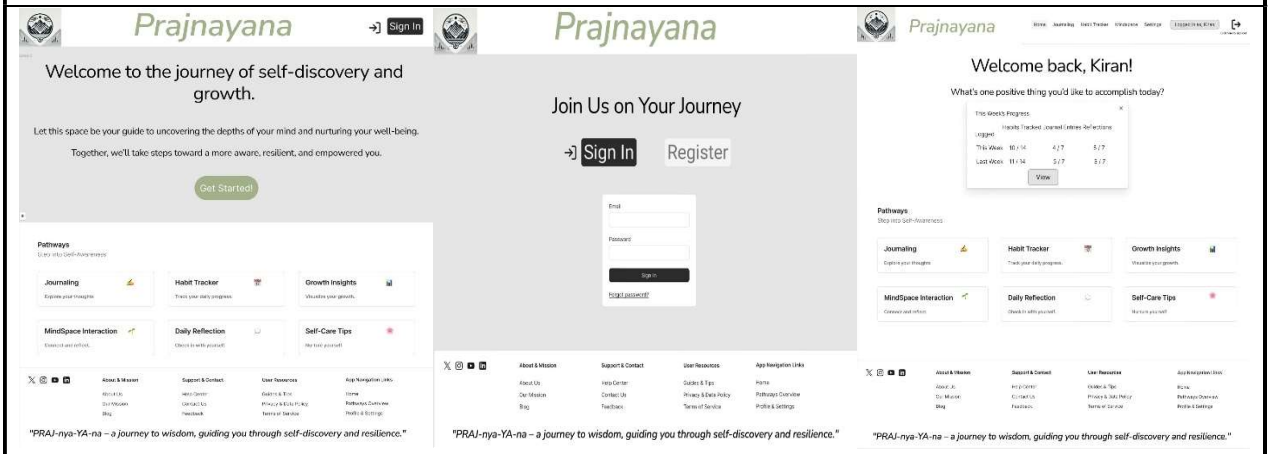
To deepen user experience, especially within journaling and self-reflection features, natural language processing (NLP) tools could analyze user entries for patterns or sentiment tracking. Incorporating NLP libraries, such as Hugging Face Transformers or OpenAI's API, would enable the app to detect underlying themes or emotional tones, providing valuable, compassionate insights back to the user. As the AI components advance, these integrations will allow for more personalized support, helping users reflect meaningfully on their thoughts and progress.

This vision of AI integration aligns with the app's core mission of nurturing self-awareness and emotional resilience by evolving alongside the user, making the app a personalized, adaptive support system.

8. *PROCESS FLOW DIAGRAM*



9. *UI DESIGN CONCEPTS FOR THE PROJECT*



- *Prajnayana's interface warmly invites users into a journey of self-discovery, beginning with a welcoming onboarding screen that highlights essential tools like Journaling and Habit Tracking.*
- *The clean Sign-In/Register screen ensures easy access for returning users.*
- *The home dashboard provides a personalized experience with progress tracking and reflective prompts, while*