Agile Scrum Methodology for SereniMind Project

TEAM 7

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1. Product Vision

SereniMind is a web-based mental wellness platform designed to help users analyze their stress levels and receive personalized recommendations for stress management. The platform utilizes machine learning to detect stress patterns and provides interactive tools such as music therapy, exercise recommendations, quizzes, and mental wellness games to assist users in relaxation and mental well-being.

Goals:

- Stress Analysis & Detection: Implement a machine-learning-based stress detection system using the K-Nearest Neighbors (KNN) algorithm.
- Personalized Therapy & Recommendations: Provide users with tailored music therapy, exercises, and mental wellness activities based on their stress levels.
- Interactive & Engaging Features: Include quizzes, mindfulness games, and relaxation activities to enhance user engagement.
- Data-Driven Insights: Use data visualization techniques to present stress trends and progress reports through interactive dashboards.
- Security & Privacy: Ensure secure user authentication and data protection using Flask-Login and SQLite.
- Scalability & Accessibility: Deploy the platform on Heroku for seamless cloud-based access across devices.

2. Scrum Roles for the SereniMind Project

Product Owner: Santosh Gadale

Responsibilities:

1. Product Backlog Management: Define, update, and prioritize the product backlog based on business and user needs.

2. Stakeholder Communication: Act as the primary liaison between the development team and stakeholders.

3. Feature Prioritization: Ensure essential functionalities such as stress detection and therapy recommendations are delivered first.

4. Sprint Planning: Work with the team to break down features into Sprint Backlog items with clear acceptance criteria.

5. Sprint Review Participation: Evaluate completed work, provide feedback, and adjust the backlog accordingly.

Scrum Master: Shashank S H

Responsibilities:

1. Facilitating Scrum Events: Organize Sprint Planning, Daily Stand-ups, Sprint Reviews, and Retrospectives.

2. Removing Impediments: Identify and resolve roadblocks that may hinder development progress.

3. Ensuring Agile Adoption: Guide the team in applying Scrum best practices.

4. Sprint Progress Monitoring: Track Sprint progress using Agile tools and ensure team alignment.

5. Team Coordination & Continuous Improvement: Foster collaboration and organize Retrospectives for process enhancement.

Development Team:

Shadab Ali Khan (Developer 1 - Backend Developer)

Responsibilities:

1. Backend Development: Develop and maintain the Flask-based backend with API endpoints.
2. Machine Learning Model Integration: Train and integrate the KNN model for stress detection.
3. Database Management: Design and manage the SQLite database structure.
4. Security and Authentication: Implement Flask-Login for secure user authentication.
5. Testing and Debugging: Debug backend components and write unit tests.

Shahin Nisha (Developer 2 - Frontend Developer)

Responsibilities:

1. Frontend Development: Design and implement an interactive UI using HTML, CSS, and JavaScript.
2. Dashboard & Data Visualization: Implement stress analysis dashboards using Plotly.
3. User Interaction Features: Develop quiz, game, and therapy modules for mental wellness.
4. Integration with Backend: Connect frontend components with Flask API endpoints.
5. Testing and UI Optimization: Conduct usability testing and ensure UI responsiveness.

3. First Sprint Backlog Items

Sprint 1 Backlog Items:

1. **User Authentication Module**
    - **I**mplement secure user signup and login functionality using Flask-Login.
    - Secure passwords using hashing techniques.
    - Store user details securely in SQLite.
2. **Backend API for Stress Analysis**
    - Train and integrate the KNN model for stress level detection.
    - Develop Flask API endpoints for stress prediction.
3. **Database Setup**
    - Configure SQLite to store user information and stress analysis results.
    - Ensure database connectivity with Flask**.**
4. **Basic UI Implementation**
    - Develop the login and signup pages.
    - Create a minimal dashboard layout for stress results.
5. **Testing & Deployment Preparations**
    - Unit test authentication and API responses.
    - Set up Heroku for future deployment.

4. Sprint Planning Meeting Minutes

Discussion Points

1. **Sprint Goals:**
    - **I**mplement user authentication and backend setup.
    - Develop a working API for stress detection.
    - Ensure database connectivity with SQLite**.**
2. **Task Assignments:**
    - Shadab Ali Khan: Backend API development, stress detection integration.
    - Shahin Nisha: Front-end UI for authentication, dashboard structure development.
    - Santosh Gadale: Define backlog and manage priorities.
    - Shashank S H: Ensure Agile methodology adherence, remove blockers.
3. **Potential Risks:**
    - Challenges in model integration with Flask.
    - Ensuring UI responsiveness across devices.
4. **Next Steps:**
    - Begin development as per backlog assignments.
    - Conduct daily stand-ups for progress tracking.
    - Review progress at the end of Sprint 1