SRE

ASSIGNMENT-4:

Establishing Project Scope and Requirements Baseline

Project:
MENTAL WELLNESS & HABIT TRACKER APP WITH AI COACH

Group Members GROUP 9

- **BSSE23058 ZUNAIRA ABDUL AZIZ**
- **BSSE23028 FAIQA ARSHAD**
- **BSSE23080 HAMNA FATIMA**
- **BSSE23097 AREEBA SHAHBAZ**

Contents

Detailed project scope analysis.

Scope Elements

Product Functionality

- **Habit and Mood Tracking:** Users log daily habits and moods, integrated with wearable data such as heart rate and sleep patterns.
- **AI Coach:** Provides personalized advice using real-time analysis of user data, leveraging machine learning to detect patterns in mood and behavior.
- **Wearable Integration:** Supports seamless synchronization with popular devices like Fitbit, Apple Watch, and Garmin.
- **Data Privacy Compliance:** Adheres to GDPR standards, with encrypted data storage and full user control.
- **Notifications and Feedback:** Periodic alerts for self-care activities and insights into wellness progress.

Project Resources

Team Members:

Faiqa Arshad: Monitoring, Incident Management, and Capacity Planning.

Zunaira Abdul Aziz: Responsible for project architecture and system overview.

Hamna Fatima and Areeba Shahbaz: Testing, scalability, and additional development tasks.

Tools and Technologies:

- Prometheus and Grafana for monitoring.
- React Native/Flutter for app development.
- TensorFlow/PyTorch for AI development.

Available Time

- **First Month:** Requirement gathering and architecture design.
- **Second Month:** Core feature development.

- **Third Month:** Testing, bug fixes, and deployment.

Feasibility assessment

Scope Feasibility Analysis for the "Mental Wellness & Habit Tracker App with AI Coach"

Evaluation of Effort vs. Resources and Timeline

Critical Features and Effort Required

- Real-Time AI-Driven Feedback (R2): Developing and integrating a robust AI system to analyze user data in real-time requires advanced expertise in machine learning and data science. This feature is resource-intensive and demands significant development time.
- Seamless Wearable Integration (R3): Establishing real-time integration with multiple wearable devices necessitates extensive testing, API utilization, and compatibility checks.
- Data Privacy and Security Compliance (R5): Meeting GDPR, SOC 2, and HIPAA compliance standards requires specialized legal and technical resources, increasing project complexity and cost.
- Offline Functionality for Mood and Habit Tracking (R7): This feature involves handling data synchronization and ensuring minimal disruption, which adds moderate complexity to the project.

Secondary Features and Effort Required

- Periodic Personalized Feedback (E2-1): Less complex than real-time AI but still requires some level of automated analysis, especially if combined with static insights.
- Basic Biometric Data Integration (E2-2): Tracking basic metrics like steps and calories is feasible and demands fewer resources compared to heart rate or sleep pattern tracking.
- Simplified User Interface (E2-5): Designing an intuitive and minimalistic UI requires collaboration between UX designers and developers but is manageable.

Resource Constraints

- Development Team: Requires expertise in AI, data security, wearable technology, and mobile app development. The complexity of features like AI-driven feedback may stretch the team's capacity.
- Timeline: Building an app with real-time AI capabilities and high compliance standards is unlikely to fit into short development cycles.
- Budget: Advanced features such as AI, GDPR compliance, and wearable integration significantly increase costs.

Conflicting Requirements

- Real-Time Feedback (R2) vs. Periodic Feedback (E2-1): Real-time feedback adds significant complexity, while periodic feedback offers a simpler alternative. Implementing both simultaneously risks scope creep.
- Detailed Wearable Integration (R3) vs. Basic Integration (E2-2): Achieving full integration requires more resources and time, potentially conflicting with the project's constraints.

Scope Feasibility Conclusion

Based on the analysis:

- Acheivability: The project, in its entirety, is over-scoped for the available resources and timeline. Features such as real-time AI feedback and strict compliance standards require considerable time, specialized skills, and budget.
- Primary Challenges: AI integration, compliance, and wearable compatibility are resource-intensive and likely to exceed the team's capacity.

Recommendations for Scope Adjustment

If the project scope must be reduced, the following strategy is proposed:

- Defer Real-Time AI Feedback (R2): Start with periodic feedback (E2-1), which is less complex and can still deliver value.
- Focus on Basic Biometric Data Integration (E2-2): Implement basic tracking features like steps and calories initially, postponing advanced metrics.
- Streamline Compliance Goals: Prioritize GDPR compliance and defer HIPAA or SOC 2 standards unless necessary.

Scope reduction strategy

Scope Reduction Proposal for the Mental Wellness & Habit Tracker App with AI Coach

Over-Scoped Features

The current project plan includes several advanced features that may extend the development timeline and require extensive resources. Below are the proposed elements for scope reduction:

Real-Time AI-Driven Feedback

Justification: Developing and integrating a real-time AI system demands significant computational power and advanced algorithms, which could delay the project. Instead, periodic feedback can suffice for initial versions, offering timely but less resource-intensive insights.

Exclusion Impact: Reduces complexity and allows more focus on foundational features like habit and mood tracking.

Seamless Wearable Integration for Biometric Data

Justification: Integrating advanced wearable data like heart rate and sleep tracking involves dealing with diverse APIs and device compatibility issues. For the initial phase, focusing on basic manual inputs and habit tracking simplifies implementation.

Exclusion Impact: Simplifies technical dependencies, ensuring that the app is launched on schedule.

Offline Functionality for Mood and Habit Tracking

Justification: Enabling offline functionality and seamless syncing upon reconnecting adds complexity to the backend infrastructure. This feature can be deferred to a later phase after the app has established its basic functionality.

Exclusion Impact: Minimal as users are likely to have consistent internet access during interactions.

Justified Elements to Retain

Mood and Habit Tracking

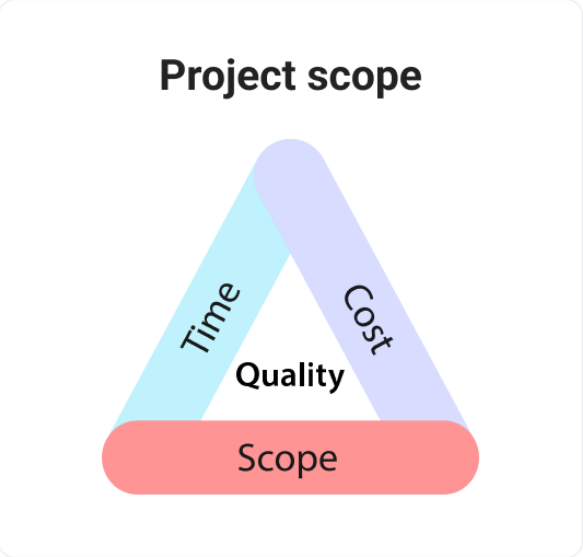
Reason: Core to the app's value proposition, enabling users to log and monitor their mental health patterns effectively.

Simplified User Interface

Reason: Ensures user adoption and satisfaction by providing a clean, intuitive interface that focuses on ease of use.

Basic Data Privacy and Security Compliance

Reason: Essential to establish trust and meet legal obligations like GDPR.



Summary

Reducing the scope by excluding advanced AI-driven feedback, comprehensive wearable integration, and offline tracking will focus the development effort on delivering a usable and reliable product within the planned timeline. These features can be revisited in future iterations based on user feedback and resource availability.

High-level requirements baseline with priority categorization.

Requirements Baseline for Mental Wellness & Habit Tracker App with AI Coach

Functional Requirements

Requirement	Priority	Description
Mood Tracking	Must Have	Users should be able to log and track their moods to see their emotional patterns over time.
Habit Tracking	Must Have	Users should be able to create and track habits to help improve their mental wellness.
Personalized Recommendations	Must Have	The app should give personalized suggestions based on the user's data to help improve their well-being.
User Authentication (MFA, RBAC)	Must Have	Secure login with extra security (MFA) and access control (RBAC) to protect user data.
Data Encryption	Must Have	User data should be encrypted to keep it safe from unauthorized access.
Automated Backups	Should Have	The app should back up user data regularly to avoid data loss.
Disaster Recovery	Should Have	The app should be able to recover data quickly in case of a system failure.
Feedback Mechanism	Could Have	Users should be able to provide feedback to improve the app's functionality.

Non-functional Requirements

Requirement	Priority	Description
Data Security Compliance (GDPR, HIPAA, SOC 2)	Must Have	The app should meet security standards like GDPR, HIPAA, and SOC 2 to protect user privacy.
Scalability	Must Have	The app should be able to grow and handle more users over time.
Performance Optimization	Must Have	The app should work fast and smoothly without delays.
Cross-Platform Usability	Should Have	The app should work on different devices like phones and computers.
User Experience	Should Have	The app should be easy and enjoyable to use for all users.
Accessibility	Should Have	The app should be accessible to people with disabilities, such as voice control or large text.
Continuous Improvement and Updates	Could Have	The app should receive regular updates and improvements based on user feedback.
Low Environmental Impact	Won't Have	Environmental impact is not a current priority for the app.

Prioritization Overview (MoSCoW Method)

1. Must Have:
   - Mood Tracking
   - Habit Tracking
   - Personalized Recommendations
   - User Authentication (MFA, RBAC)
   - Data Encryption
   - Data Security Compliance (GDPR, HIPAA, SOC 2)
   - Scalability
   - Performance Optimization
2. Should Have:
   - Automated Backups
   - Disaster Recovery
   - Cross-Platform Usability
   - User Experience
   - Accessibility
3. Could Have:

    - Feedback Mechanism
    - Continuous Improvement and Updates
4. Won't Have:
    - Low Environmental Impact (not a priority for this version of the app)

SRE Assignment 4

by Zunaira Abdul Aziz

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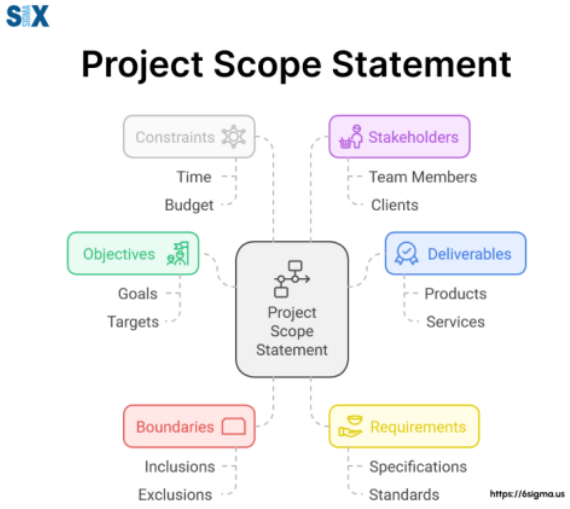

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SRE Assignment 4

ORIGINALITY REPORT

2%	1%	1%	0%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Kuldeep Singh Kaswan, Jagjit Singh Dhatterwal, Anand Nayyar. "Digital Personality: A Man Forever - Volume 1: Introduction", CRC Press, 2024 Publication	1%
2	www.coursehero.com Internet Source	1%

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SRE Assignment 4

GRADEMARK REPORT

FINAL GRADE

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GENERAL COMMENTS

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