

Agile Development Model

AI-Based Dementia Screening & Counselling System

1. Introduction

This document describes the Agile software development model followed for the AI-Based Dementia Screening & Counselling System. Agile methodology is adopted to ensure flexibility, continuous feedback, incremental delivery, and improved product quality.

2. Rationale for Choosing Agile Model

The project requirements involve AI models, user interaction, and healthcare recommendations, which may evolve based on testing, feedback, and model accuracy. Agile allows iterative development, continuous testing, and quick adaptation to changing requirements.

3. Agile Model Overview

The Agile model divides the project into small iterations called sprints. Each sprint delivers a working increment of the system including design, development, testing, and review.

4. Agile Team Roles

Role	Responsibility
Product Owner	Defines requirements, prioritizes product backlog
Scrum Master	Ensures Agile practices are followed
Development Team	Designs, develops, and tests the system
Stakeholders	Provide feedback and validation

5. Product Backlog

The product backlog is derived from the Software Requirements Specification (SRS) and contains prioritized features.

Backlog ID	Feature
PB-1	User Registration and Authentication
PB-2	Cognitive Test Module
PB-3	Speech Recording and Analysis
PB-4	Machine Learning Risk Prediction
PB-5	Result Visualization Dashboard
PB-6	Doctor Recommendation System
PB-7	Report Generation and Storage

6. Sprint Planning

The project is divided into multiple sprints of 2–3 weeks duration. Each sprint delivers a functional increment of the system.

Sprint	Features Delivered
Sprint 1	Project setup, User Authentication, Basic UI
Sprint 2	Cognitive Test Module, Database Integration
Sprint 3	Speech Analysis, ML Model Integration
Sprint 4	Result Dashboard, Recommendations, Testing
Sprint 5	Optimization, Documentation, Deployment

7. Agile Workflow

Each sprint follows the cycle: Requirement Analysis → Design → Development → Testing → Review → Feedback. Feedback from stakeholders is incorporated into the next sprint.

8. Benefits of Agile for This Project

- Early delivery of working features
- Continuous user and stakeholder feedback
- Improved ML model refinement over iterations
- Reduced project risk
- Better quality and usability

9. Conclusion

The Agile model ensures systematic, flexible, and efficient development of the AI-Based Dementia Screening & Counselling System. Iterative development and continuous feedback help in delivering a reliable and scalable healthcare solution.