### **1. Project Initialization**

Objective: Define project scope, goals, and constraints.

* Project Charter: Document including project objectives, stakeholders, and high-level budget and timeline.
* Initial Stakeholder Meeting: Discuss and refine project goals, expectations, and roles.

### **2. Requirements Gathering**

Objective: Understand the functional and non-functional requirements of the app.

* User Interviews and Surveys: Gather information on user needs, preferences, and pain points regarding AI tools.
* Requirements Documentation: Compile findings into a detailed requirements document.

### **3. Planning Phase**

Objective: Create a detailed project plan, including timelines, budgets, and resources.

* Budget Allocation: Break down the $50,000 budget across development phases: research and development (R&D), design, development, testing, deployment, and marketing.
* Timeline Planning: Use a Gantt chart to outline the 6-month timeline, allocating time for each phase of the project, including buffer times for unexpected delays.
* Resource Planning: Identify the team composition required (developers, designers, project managers, etc.) and any software or hardware needs.

### **4. Agile Implementation Phase**

Objective: Develop the app in iterative cycles, allowing for flexibility and continuous improvement.

#### 4.1 Sprint Planning

* Sprint Duration: Choose a sprint length, usually 2 weeks.
* User Stories Creation: Break down requirements into user stories to be tackled in each sprint.

#### 4.2 Development Sprints

* Sprint Execution: Develop features based on user stories, with daily stand-ups to monitor progress.
* Testing: Include both automated and manual testing within the sprint to ensure quality.
* Sprint Review and Retrospective: At the end of each sprint, review completed work and discuss improvements for the next sprint.

#### 4.3 Continuous Integration/Continuous Deployment (CI/CD)

* Automation: Set up CI/CD pipelines to automate testing and deployment processes.

### **5. Quality Assurance**

Objective: Ensure the app meets quality standards and user expectations.

* Testing Strategy: Implement unit tests, integration tests, and user acceptance testing (UAT).
* Feedback Loops: Gather user feedback through beta testing and incorporate changes as necessary.

### **6. Deployment and Launch**

Objective: Prepare for and execute a successful app launch.

* Launch Planning: Plan the launch in detail, including marketing efforts and app store optimization (ASO).
* Deployment: Deploy the app to production environments, ensuring all systems are go.
* Post-Launch Support: Set up support channels for users and monitor the app for any issues.

### **7. Project Closure**

Objective: Conclude the project, documenting learnings and preparing for future maintenance.

* Project Review Meeting: Evaluate what went well and what could be improved.
* Maintenance Plan: Develop a plan for ongoing maintenance and updates to the app.
* Documentation: Finalize all documentation, including code documentation, user manuals, and project reports.

### **Budget and Time Allocation Example**

To give you an idea, here’s how the budget and timeline might be initially allocated:

* R&D: $5,000 | 1 month
* Design: $8,000 | 1 month
* Development: $20,000 | 2 months
* Testing and QA: $7,000 | 1 month
* Deployment and Marketing: $5,000 | 1 month
* Contingency and Miscellaneous: $5,000