**Initial Preparation Phase (October 1 — October 15)**

Task 1: Project Roadmap Creation

Sub-Task 1.1: Scope Definition

* Importance: Laying out the scope to understand the boundaries, features, and functionalities of the project.
* Action: Detailing all the features, interfaces, and interactions within the TA App.

Sub-Task 1.2: Milestone Scheduling

* Importance: Setting achievable milestones to track progress and ensure timely delivery.
* Action: Identifying key milestones, associating deadlines, and assigning resources.

Sub-Task 1.3: Resource Allocation

* Importance: Ensuring adequate resources are allocated to meet project demands.
* Action: Assigning team members to tasks based on skills and project needs.

Task 2: Design Finalization

Sub-Task 2.1: Database Structure Refinement

* Importance: Establishing a robust database structure to support data integrity and scalability.
* Action: Finalizing tables, relationships, and data validation rules in the database design.

Sub-Task 2.2: UI/UX Enhancements

* Importance: Ensuring a user-friendly interface for a better user experience.
* Action: Refining UI designs based on feedback, enhancing usability and accessibility.

Sub-Task 2.3: Final Technical Specification Documentation

* Importance: Having a solid technical specification to guide development.
* Action: Documenting system architecture, technologies to be used, and coding standards.

**Development Phase (October 16 — November 25)**

Task 3: Backend Development

Sub-Task 3.1: Server and Database Setup

* Importance: Establishing a stable server and database environment for development.
* Action: Setting up the server, configuring the database, and ensuring proper connectivity.

Sub-Task 3.2: Business Logic Implementation

* Importance: Implementing core functionalities to meet the project’s requirements.
* Action: Coding the business logic, implementing algorithms, and ensuring adherence to specifications.

Sub-Task 3.3: Notification System Development

* Importance: Ensuring users are informed about important events within the application.
* Action: Developing the notification system to handle emails and in-app notifications.

Task 4: Frontend Development

Sub-Task 4.1: User Interface Development

* Importance: Creating an intuitive interface to interact with the system.
* Action: Designing and developing user interfaces based on UI/UX designs.

Sub-Task 4.2: Client-Side Logic Implementation

* Importance: Ensuring client-side interactions are handled efficiently.
* Action: Implementing client-side logic, validation, and dynamic content rendering.

Sub-Task 4.3: Usability Testing

* Importance: Identifying issues in usability to enhance user satisfaction.
* Action: Conducting usability tests, collecting feedback, and making necessary adjustments.

Task 5: System Integration

Sub-Task 5.1: Frontend and Backend Integration

* Importance: Ensuring seamless interaction between frontend and backend.
* Action: Integrating frontend and backend systems, verifying data flow and error handling.

Sub-Task 5.2: Authentication and Authorization Setup

* Importance: Protecting system resources through proper access control.
* Action: Setting up authentication protocols, role-based access control, and security checks.

**Testing Phase (November 26 — December 1)**

Task 6: Functional Testing

Sub-Task 6.1: Unit Testing

* Importance: Validating each part of the software for correct functionality.
* Action: Writing and executing unit tests, identifying bugs, and making corrections.

Sub-Task 6.2: Integration Testing

* Importance: Verifying integrated system components for seamless functionality.
* Action: Designing integration tests, detecting interface issues, and rectifying problems.

Task 7: User Acceptance Testing (UAT)

Sub-Task 7.1: UAT Execution

* Importance: Confirming the system meets the agreed requirements and is ready for use.
* Action: Preparing UAT environment, conducting UAT, and collecting user feedback.

Sub-Task 7.2: Feedback Collection and Adjustments

* Importance: Incorporating user feedback for a better product.
* Action: Analyzing feedback, making necessary adjustments, and confirming changes with stakeholders.

**Deployment Phase (December 2 — December 3)**

Task 8: Deployment Preparation

Sub-Task 8.1: Production Environment Setup

* Importance: Preparing a stable environment for live deployment.
* Action: Setting up the production server, database, and other necessary configurations.

Sub-Task 8.2: Final System Review

* Importance: Ensuring the system is ready for live usage.
* Action: Conducting a final system review, checking for any pending issues, and obtaining deployment approval.

Task 9: Deployment Execution

* Sub-Task 9.1: System Deployment
* Importance: Moving the system into a live environment for user access.
* Action: Executing deployment plan, monitoring system behavior, and ensuring smooth transition.

Sub-Task 9.2: Deployment Verification

* Importance: Confirming successful deployment and functionality in the live environment.
* Action: Verifying deployment success, conducting smoke tests, and confirming operational status.

**Post-Deployment Phase (December 4 — December 7)**

Task 10: System Monitoring

Sub-Task 10.1: Performance Monitoring

* Importance: Ensuring the system operates efficiently under normal and peak loads.
* Action: Setting up monitoring tools, analyzing system performance, and making necessary optimizations.

Sub-Task 10.2: Security Monitoring

* Importance: Protecting the system against security threats.
* Action: Monitoring for unusual activities, investigating alerts, and mitigating security risks.

Task 11: User Support

Sub-Task 11.1: User Training

* Importance: Ensuring users are well-versed with the system for efficient usage.
* Action: Conducting training sessions, providing user manuals, and addressing queries.

Sub-Task 11.2: Helpdesk Setup for Issue Reporting

* Importance: Providing a channel for users to report issues and seek help.
* Action: Setting up a helpdesk, training support staff, and establishing issue resolution procedures.

**Documentation and Review Phase (December 8 — December 9)**

Task 12: Documentation Completion

* Sub-Task 12.1: Technical Documentation
* Importance: Providing comprehensive technical information for future reference.
* Action: Completing technical documentation covering system architecture, code, and deployment procedures.

Sub-Task 12.2: User Manual

* Importance: Guiding users on how to interact with the system.
* Action: Finalizing user manuals, video tutorials, and FAQ sections.

Task 13: Project Review

Sub-Task 13.1: Project Performance Evaluation

* Importance: Understanding the project’s effectiveness and areas of improvement.
* Action: Evaluating project against initial objectives, analyzing performance metrics, and collecting stakeholder feedback.

Sub-Task 13.2: Lessons Learned Documentation

* Importance: Capturing experiences for better future project executions.
* Action: Documenting lessons learned, challenges faced, and how they were overcome.

**Buffer and Finalization Phase (December 10 — December 14)**

Task 14: Additional Testing

Sub-Task 14.1: Regression Testing

* Importance: Ensuring recent changes haven’t adversely affected existing functionalities.
* Action: Conducting regression tests, identifying any issues, and rectifying them.

Sub-Task 14.2: Bug Fixing

* Importance: Ensuring a bug-free system for optimal user experience.
* Action: Addressing any bugs found, making necessary code adjustments, and re-testing.

Task 15: Final Review and Approval

Sub-Task 15.1: Final System Review

* Importance: Ensuring the system is completely ready for user engagement.
* Action: Conducting a final review, confirming all tasks are completed, and obtaining stakeholder approval.

Sub-Task 15.2: Stakeholder Approval

* Importance: Getting final approval from stakeholders for project closure.
* Action: Presenting the finished system to stakeholders, addressing any concerns, and obtaining final approval for project closure.