

Phases for Developing the System

1.Planning & Requirements Analysis

Activities

- Identify and engage all stakeholders (users, admins, IT team, management).
 - Gather functional requirements (e.g., dashboard data, reports, user roles, access levels).
 - Define non-functional requirements (performance, security, scalability, compliance).
 - Conduct feasibility study (technical, operational, financial).
 - Define project scope and objectives.
 - Develop a high-level project plan & timelines.
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2. System Design

Activities

- Design system architecture (client-server, microservices, database design).
 - Create database schema diagrams (tables, relationships, constraints).
 - Define system components and their interactions.
 - Develop wireframes & UI/UX mockups for dashboards and key screens.
 - Design API specifications (if external integrations are needed).
 - Define security architecture (authentication, authorization, data protection).
 - Prepare detailed technical documentation.
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3) Implementation (Coding/Development)

Activities

- Set up development environment and code repositories (e.g., Git).
- Develop frontend (UI) components:
 - Dashboard interface.
 - Navigation and widgets.
 - Responsive design.
- Develop backend services:
 - Business logic (e.g., data aggregation for charts).

- User authentication & role-based access control.
 - Data CRUD operations (create, read, update, delete).
 - Integrate database (migration scripts, seeding, queries).
 - Implement APIs (internal or external if required).
 - Develop notification or alert features (if applicable).
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4 Testing

Activities

- Unit testing of individual modules.
 - Integration testing (check interaction between frontend, backend, and database).
 - System testing (overall system functionality).
 - User acceptance testing (UAT) with selected end-users.
 - Performance & load testing (evaluate under different workloads).
 - Security testing (penetration tests, vulnerability scans).
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5 Deployment

Activities

- Set up production environment (servers, cloud services).
 - Prepare deployment scripts and CI/CD pipelines.
 - Conduct final pre-deployment checks.
 - Deploy system to production environment.
 - Perform smoke testing to ensure successful deployment.
 - Prepare rollback plan in case of failure.
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6 Training & Documentation

Activities

- Develop user manuals and technical documentation.
- Train end-users and administrators.
- Create help desk or support procedures.

7 Maintenance & Support

Activities

- Monitor system performance and logs.
- Fix bugs and issues as reported by users.
- Implement updates and patches (security & functionality).
- Plan for future enhancements or new modules.

Optional Phase: Post-Implementation Review

Activities

- Gather feedback from users and stakeholders.
- Evaluate project goals vs. outcomes.
- Identify lessons learned and improvement areas.
- Document findings for future projects.

✓ Summary View

Phase	Key Activities
Planning & Analysis	Requirements gathering, feasibility, scope, high-level plan
System Design	Architecture, UI/UX design, data modeling, documentation
Implementation	Frontend, backend, database, APIs, integration
Testing	Unit, integration, system, UAT, performance, security
Deployment	Setup, deployment, smoke testing, go-live
Training & Documentation	User guides, training sessions, support setup
Maintenance & Support	Monitoring, bug fixes, updates, improvements