

Full Stack Development with **MERN**

Phase 5 : Project Planning and **Scheduling**

Project Title – ShopEZ : One-Stop shop for online purchases

Team Members :

- 1. Diviz Pandey (Team Lead) – Backend Developer**
- 2. Bhavya Jain – Frontend Developer**
- 3. Karmanya Batra – Database and Deployment**
- 4. Anaswar L – Tester**

Team ID - SWTID1743669870

5.1 Overview of Project Planning

Project planning for ShopEZ involved organizing a highly collaborative development cycle among a four-member team. It focused on streamlining responsibilities, setting timelines, and managing resources efficiently to deliver a working full-stack e-commerce platform within the project timeframe.

We adopted an **agile, iterative development model**, with weekly sprints that included ideation, development, testing, and review. The scope was initially divided into core features and optional enhancements, ensuring the MVP was always on track while maintaining room for innovation.

5.2 Task Breakdown and Role Allocation

Team members were assigned based on their technical strengths and interests, with flexibility to assist others when needed.

Team Responsibilities

Member	Role	Responsibilities
Diviz Pandey	Backend Developer (Lead)	API development, JWT authentication, middleware logic, server routing
Bhavya Jain	Frontend Developer	UI implementation, component architecture, state management, routing
Karmanya Batra	Database & Deployment	MongoDB schema design, environment setup, database configuration, deployment
Anaswar L	Tester	Manual testing, API validation, functional and performance test cases

Collaboration was facilitated using tools like GitHub (version control), Trello (task tracking), and Google Meet (weekly standups).

5.3 Project Timeline

We split the project into **six major phases** over the course of 6–8 weeks, with each sprint spanning approximately 5–6 days. Here's a simplified timeline:

Week	Sprint Focus	Outcome
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1	Planning & Requirement Gathering	Finalized feature list, tech stack, wireframes
2	Environment Setup & Boilerplate Code	Setup MERN base, project folder structure, Git repo
3	Backend APIs & MongoDB Schema	Auth, user routes, product schema, Postman testing
4	Frontend UI & Routing	React components, Tailwind styling, router setup
5	Integration Phase	API integration, Redux logic, error handling
6	Admin Panel & Advanced Features	Admin dashboard, protected routes, CRUD operations
7	Testing & Debugging	End-to-end testing, bug fixes, UI polish
8	Documentation, Demo, and Submission	Report writing, demo recording, deployment (optional)

5.4 Gantt Chart

Here is a text-based Gantt-style view of the work distribution:

Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Requirement Analysis	X							
Tech Stack Finalization	X							
Environment Setup		X						
API Development			X	X				
Frontend Development				X	X			
Integration					X	X		
Admin Panel Features						X		
Testing						X	X	
Documentation & Demo							X	X

5.5 Risk Management

Identifying and preparing for potential risks was critical to maintaining smooth progress.

Risk	Impact	Mitigation Strategy
Member Unavailability	High	Maintain detailed documentation for task continuity

API Integration Delays	Medium	Create mock responses early for frontend testing
Git Conflicts & Merge Issues	Medium	Use feature branches, scheduled merges
Environment Variable Misconfig	Medium	Maintain .env.sample and clear team protocols
Deployment/Hosting Errors	Medium	Perform early deployment testing on local servers

5.6 Project Management Tools

We leveraged digital tools to plan, track, and execute effectively:

Tool	Purpose
Trello	Sprint planning, to-do board, issue logging
GitHub	Code version control, collaboration
Google Meet	Weekly sync-up meetings
Figma	UI wireframes and interface mockups
Notion/Docs	Report writing and task documentation

These tools helped reduce miscommunication and ensured accountability throughout the project lifecycle.

5.7 Documentation & Demo Planning

The final two weeks were devoted to:

- **Testing:** All core functionalities were tested against common and edge use cases.
- **Demo Video:** A walkthrough was recorded demonstrating user and admin flows.
- **Reports & Submission:** Reports like this one were prepared and submitted with supporting documents, GitHub links, and video demo URLs.

A key part of the planning involved ensuring demo readiness, UI polish, and issue resolution before the final week.

5.8 Summary

The planning and scheduling phase was the backbone of the ShopEZ development cycle. It ensured that the team stayed on track, milestones were met, and critical issues were

anticipated in advance. By dividing responsibilities, setting clear deadlines, and working in agile sprints, we maintained momentum without burnout.

As a result, ShopEZ was not only developed efficiently but also refined with testing, user feedback, and iterative improvements. The success of this phase is evident in the seamless delivery of both technical features and documentation deliverables.