SE Experiment-8(Batch-C/D)

-Team Details-
Saina Hamid – UID (2024301008)
Kalpak Patil– UID (2024301020)
T.E. Computer Engineering – C

Aim:

To Draw a WBS & Gantt Chart for a Collab Nest.

Theory

Introduction

A **Work Breakdown Structure (WBS)** and a **Gantt Chart** are essential tools in project management, helping teams plan, visualize, and monitor tasks in a structured manner. For a project like **Collab Nest**, which involves multiple tasks such as UI/UX design, backend development, testing, and deployment, using these tools ensures clarity, accountability, and timely execution.

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1. Work Breakdown Structure (WBS)

Definition:
A **WBS** is a hierarchical decomposition of a project into smaller, more manageable components called **work packages**. It breaks down the project scope into tasks and subtasks, making it easier to assign responsibilities, estimate time, and track progress.

Purpose and Importance:

- **Clarity:** Helps teams understand all project tasks and dependencies.

- **Planning:** Facilitates better resource allocation and scheduling.

- **Control:** Makes monitoring and controlling project progress easier.

- **Communication:** Provides a common framework for all stakeholders to understand the project scope.

Who Uses It:

- Project Managers

- Development Teams

- Stakeholders

- Clients

Notation:

- WBS is usually represented in a **hierarchical tree diagram** or a **numbered list format**.

- Each level represents a breakdown from the broader deliverables to smaller, actionable tasks.

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2. Gantt Chart

Definition:
 A **Gantt Chart** is a **bar chart** that represents a project schedule over time. It shows tasks, their durations, start and end dates, and dependencies among tasks.

Purpose and Importance:

- **Visualization:** Makes it easy to see which tasks are happening and when.

- **Time Management:** Helps in scheduling and avoiding delays.

- **Dependency Tracking:** Shows how tasks are interlinked.

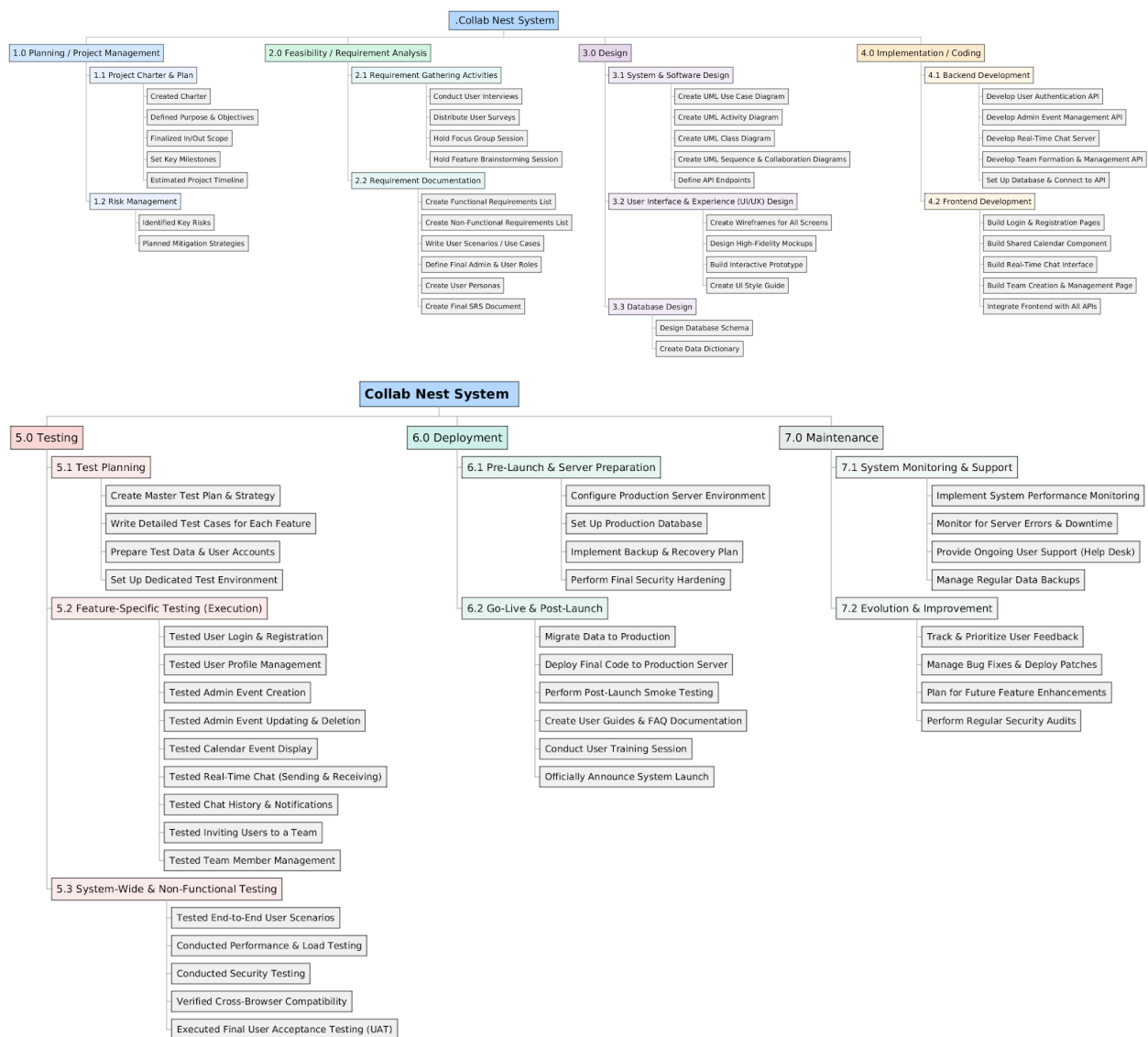- **Progress Tracking:** Can show completion percentages of tasks.
  Who Uses It:
- Project Managers

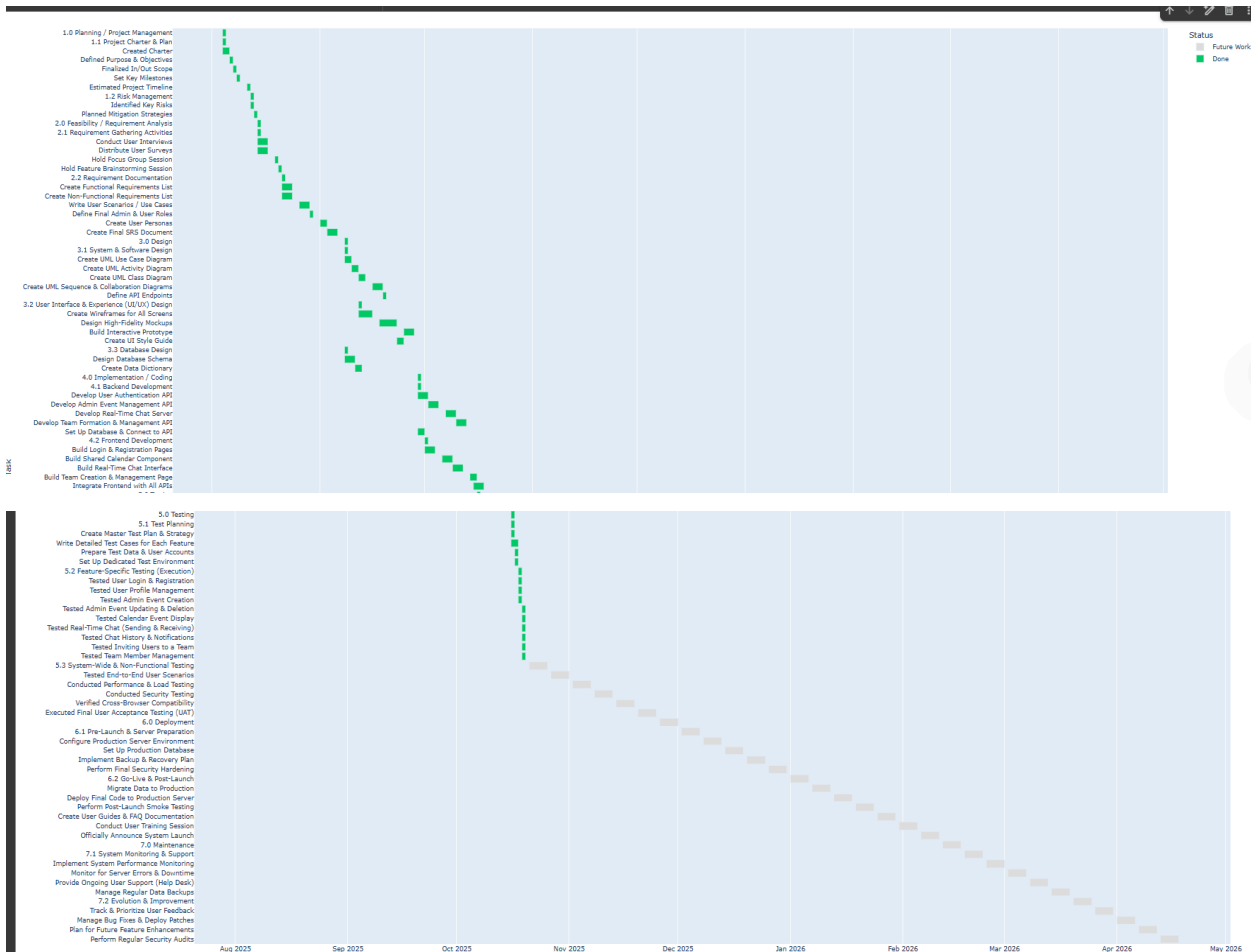- Team Leads

- Stakeholders and Clients

Notation:

- Tasks are listed vertically, and time intervals are displayed horizontally.

- Bars represent task durations; overlapping bars indicate parallel tasks.

- Dependencies can be shown with arrows connecting tasks.

Diagram:
Wbs

.Collab Nest System

1.0 Planning / Project Management
- **1.1 Project Charter & Plan**
  - Created Charter
  - Defined Purpose & Objectives
  - Finalized In/Out Scope
  - Set Key Milestones
  - Estimated Project Timeline
- **1.2 Risk Management**
  - Identified Key Risks
  - Planned Mitigation Strategies

2.0 Feasibility / Requirement Analysis
- **2.1 Requirement Gathering Activities**
  - Conduct User Interviews
  - Distribute User Surveys
  - Hold Focus Group Session
  - Hold Feature Brainstorming Session
- **2.2 Requirement Documentation**
  - Create Functional Requirements List
  - Create Non-Functional Requirements List
  - Write User Scenarios / Use Cases
  - Define Final Admin & User Roles
  - Create User Personas
  - Create Final SRS Document

3.0 Design
- **3.1 System & Software Design**
  - Create UML Use Case Diagram
  - Create UML Activity Diagram
  - Create UML Class Diagram
  - Create UML Sequence & Collaboration Diagrams
  - Define API Endpoints
- **3.2 User Interface & Experience (UI/UX) Design**
  - Create Wireframes for All Screens
  - Design High-Fidelity Mockups
  - Build Interactive Prototype
  - Create UI Style Guide
- **3.3 Database Design**
  - Design Database Schema
  - Create Data Dictionary

4.0 Implementation / Coding
- **4.1 Backend Development**
  - Develop User Authentication API
  - Develop Admin Event Management API
  - Develop Real-Time Chat Server
  - Develop Team Formation & Management API
  - Set Up Database & Connect to API
- **4.2 Frontend Development**
  - Build Login & Registration Pages
  - Build Shared Calendar Component
  - Build Real-Time Chat Interface
  - Build Team Creation & Management Page
  - Integrate Frontend with All APIs

Collab Nest System

5.0 Testing
- **5.1 Test Planning**
  - Create Master Test Plan & Strategy
  - Write Detailed Test Cases for Each Feature
  - Prepare Test Data & User Accounts
  - Set Up Dedicated Test Environment
- **5.2 Feature-Specific Testing (Execution)**
  - Tested User Login & Registration
  - Tested User Profile Management
  - Tested Admin Event Creation
  - Tested Admin Event Updating & Deletion
  - Tested Calendar Event Display
  - Tested Real-Time Chat (Sending & Receiving)
  - Tested Chat History & Notifications
  - Tested Inviting Users to a Team
  - Tested Team Member Management
- **5.3 System-Wide & Non-Functional Testing**
  - Tested End-to-End User Scenarios
  - Conducted Performance & Load Testing
  - Conducted Security Testing
  - Verified Cross-Browser Compatibility
  - Executed Final User Acceptance Testing (UAT)

6.0 Deployment
- **6.1 Pre-Launch & Server Preparation**
  - Configure Production Server Environment
  - Set Up Production Database
  - Implement Backup & Recovery Plan
  - Perform Final Security Hardening
- **6.2 Go-Live & Post-Launch**
  - Migrate Data to Production
  - Deploy Final Code to Production Server
  - Perform Post-Launch Smoke Testing
  - Create User Guides & FAQ Documentation
  - Conduct User Training Session
  - Officially Announce System Launch

7.0 Maintenance
- **7.1 System Monitoring & Support**
  - Implement System Performance Monitoring
  - Monitor for Server Errors & Downtime
  - Provide Ongoing User Support (Help Desk)
  - Manage Regular Data Backups
- **7.2 Evolution & Improvement**
  - Track & Prioritize User Feedback
  - Manage Bug Fixes & Deploy Patches
  - Plan for Future Feature Enhancements
  - Perform Regular Security Audits

Gantt chart

Conclusion

From this experiment, we learned that:

Using a **Work Breakdown Structure** and **Gantt Chart** for the Collab Nest project ensures that all tasks are well-defined, properly scheduled, and easily monitored. While WBS helps in breaking down the project into manageable parts, the Gantt Chart provides a clear timeline and visual representation of progress. Together, they improve project efficiency, enhance team coordination, and increase the likelihood of on-time, successful project delivery.