
# SOFTWARE PROFECT MANAGEMENT

# SWE 426

Submitted To:

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Submitted By:

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Session:2019-2020
Department: Software Engineering
Shahjalal University of Science and Technology.

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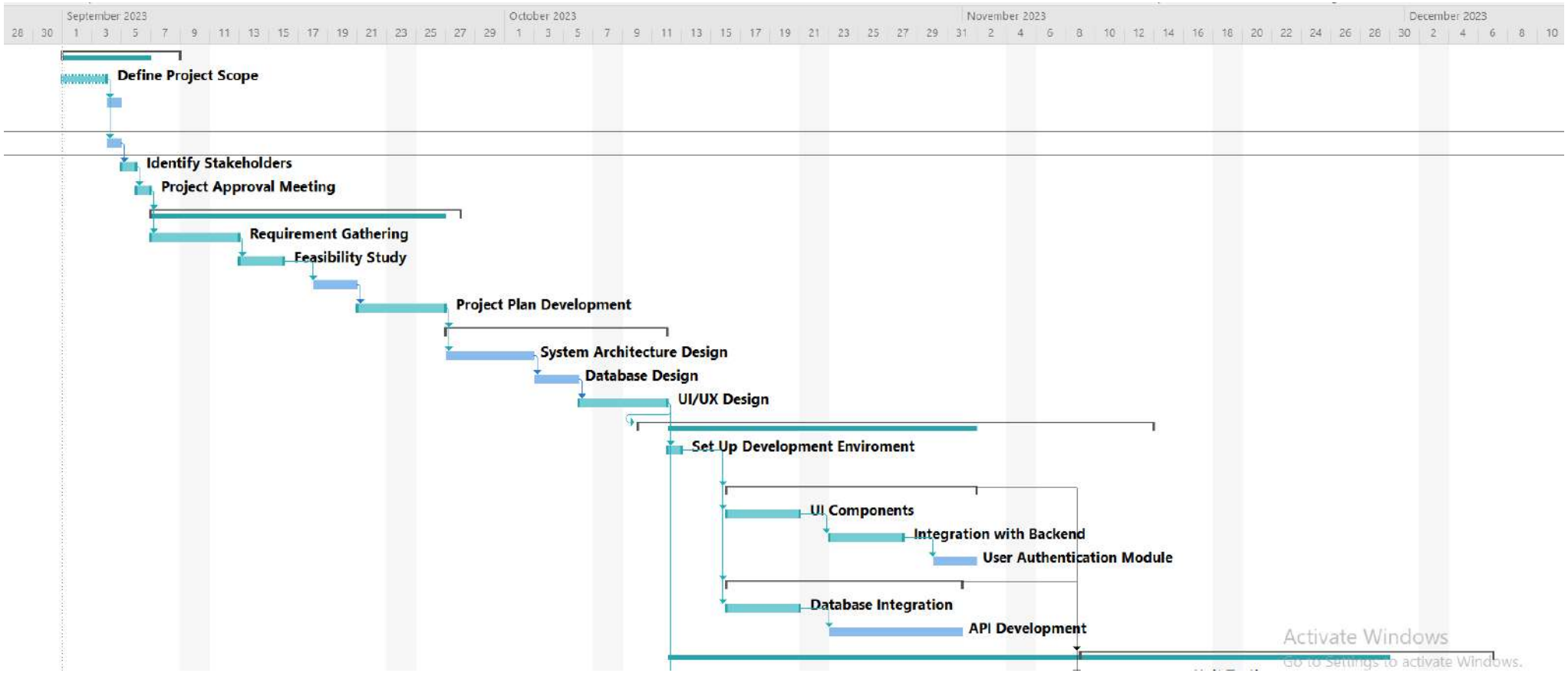
# LAB REPORT

| ID | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|
| 1 | **Project Initiation** | **6 days** | **Fri 9/1/23** | **Fri 9/8/23** | |
| 2 | Define Project Scope | 2 days | Fri 9/1/23 | Sun 9/3/23 | |
| 3 | Research Existing Bus Management Systems | 1 day | Mon 9/4/23 | Mon 9/4/23 | 2 |
| 4 | Assign Roles and Responsibilities | 1 day | Mon 9/4/23 | Mon 9/4/23 | 2 |
| 5 | Identify Stakeholders | 1 day | Tue 9/5/23 | Tue 9/5/23 | 4 |
| 6 | Project Approval Meeting | 1 day | Wed 9/6/23 | Wed 9/6/23 | 5 |
| 7 | **Planning** | **15 days** | **Thu 9/7/23** | **Wed 9/27/23** | **6** |
| 8 | Requirement Gathering | 4 days | Thu 9/7/23 | Tue 9/12/23 | 6 |
| 9 | Feasibility Study | 3 days | Wed 9/13/23 | Fri 9/15/23 | 8 |
| 10 | Establish Project Timeline | 3 days | Mon 9/18/23 | Wed 9/20/23 | 9 |
| 11 | Project Plan Development | 4 days | Thu 9/21/23 | Tue 9/26/23 | 10 |
| 12 | **Design** | **11 days** | **Wed 9/27/23** | **Wed 10/11/23** | **11** |
| 13 | System Architecture Design | 4 days | Wed 9/27/23 | Mon 10/2/23 | 11 |
| 14 | Database Design | 3 days | Tue 10/3/23 | Thu 10/5/23 | 13 |
| 15 | UI/UX Design | 4 days | Fri 10/6/23 | Wed 10/11/23 | 14 |
| 16 | **Implementation** | **25 days** | **Tue 10/10/23** | **Mon 11/13/23** | **15** |
| 17 | Set Up Development Enviroment | 1 day | Thu 10/12/23 | Thu 10/12/23 | 15 |
| 18 | **Frontend Development** | **13 days** | **Mon 10/16/23** | **Wed 11/1/23** | **17** |
| 19 | UI Components | 5 days | Mon 10/16/23 | Fri 10/20/23 | 17 |
| 20 | Integration with Backend | 5 days | Mon 10/23/23 | Fri 10/27/23 | 19 |
| 21 | User Authentication Module | 3 days | Mon 10/30/23 | Wed 11/1/23 | 20 |
| 22 | **Backend Development** | **12 days** | **Mon 10/16/23** | **Tue 10/31/23** | **17** |
| 23 | Database Integration | 5 days | Mon 10/16/23 | Fri 10/20/23 | 17 |
| 24 | API Development | 7 days | Mon 10/23/23 | Tue 10/31/23 | 23 |
| 25 | **Testing** | **20 days** | **Thu 11/9/23** | **Wed 12/6/23** | **18,22** |
| 26 | Unit Testing | 5 days | Thu 11/9/23 | Wed 11/15/23 | 18,22 |
| 27 | Integration Testing | 5 days | Thu 11/16/23 | Wed 11/22/23 | 26 |
| 28 | System Testing | 5 days | Thu 10/12/23 | Wed 10/18/23 | 15 |
| 29 | User Acceptance Testing | 5 days | Thu 11/23/23 | Wed 11/29/23 | 27 |
| 30 | **Deployment** | **5 days** | **Thu 12/7/23** | **Wed 12/13/23** | **28** |
| 31 | Deployment Preparation | 2 days | Thu 11/23/23 | Fri 11/24/23 | 29 |
| 32 | Deploy to Production | 1 day | Mon 11/27/23 | Mon 11/27/23 | 31 |
| 33 | Post-Deployment Testing | 2 days | Tue 11/28/23 | Wed 11/29/23 | 32 |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Define Project Scope
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Database Design
UI/UX Design
Set Up Development Enviroment
UI Components
Integration with Backend
User Authentication Module
Database Integration
API Development
Activate Windows
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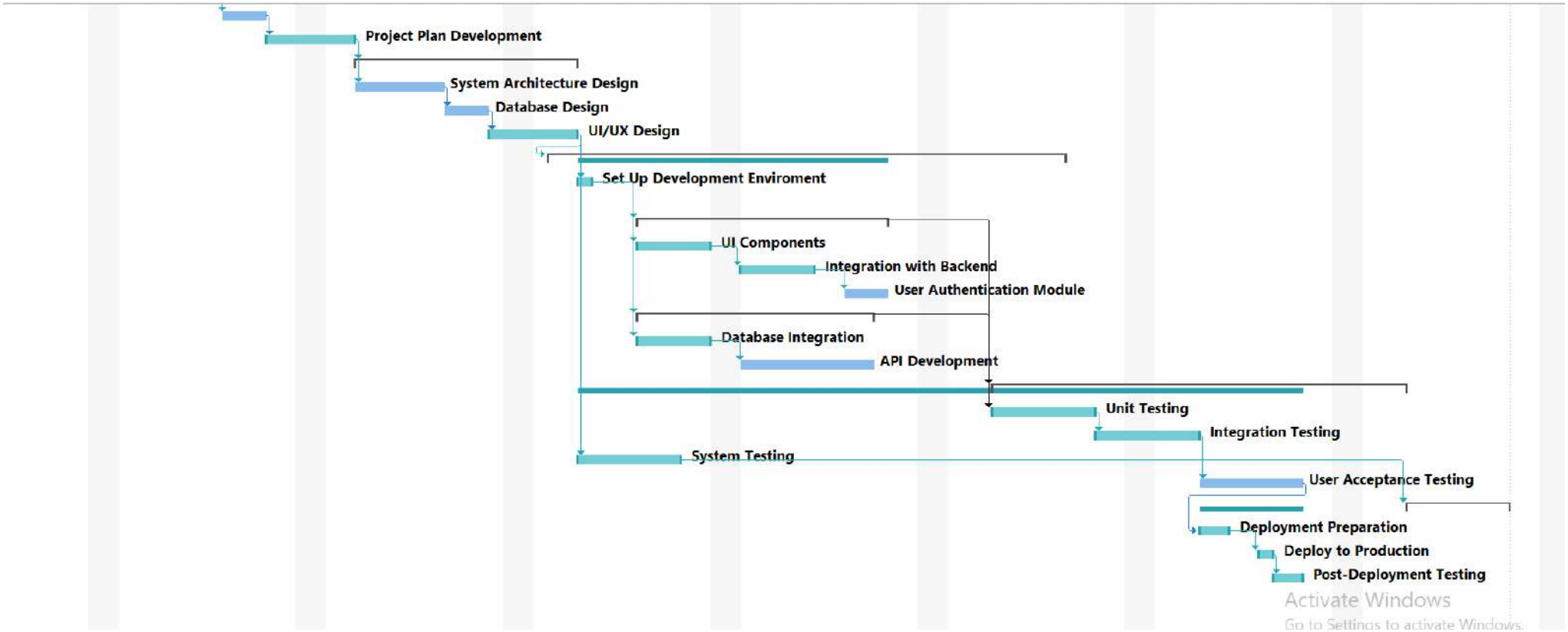

**Project Phases and Tasks:**

1) **Project Initiation:**
   a) **Define Project Scope (2 days):** Established the objectives, deliverables, and boundaries of the bus service management system project. The project scope was defined to ensure that the bus management system would address the specific needs of bus scheduling, ticketing, and route management.

   b) **Identified stakeholders(1day)** :identified all individuals and organizations affected by the project, including bus company CEO , staff ,manager, drivers, maintenance staff, and passengers(myself).

   c) **Project Approval and Kickoff Meeting (1 day):**Officially started the project with a meeting involving all key stakeholders to align goals, timelines, and responsibilities. This meeting facilitated a common understanding among stakeholders and our project advisor.

2) **Planning:**

   a) **Requirement Gathering (5 days):** Requirements for the bus management system, including scheduling, real-time tracking, ticket booking, and reporting, were gathered. This information formed the basis for the system's features and functionalities.

   b) **Feasibility Study (3 days):** The technical, operational, and financial feasibility of the project was analyzed to ensure it was viable.

   c) **Project Plan Development (4 days):** The project plan outlined the schedule, resource allocation, risk mitigation strategies, and communication plan. This provided a clear roadmap for project execution.

3) **Design:**

   a) **System Architecture Design (5 days):** The high-level structure of the system, including The architecture of the bus management system was designed to ensure scalability and integration of various components like scheduling, booking, and tracking modules.

   b) **Database Design (3 days):** The database design focused on creating a robust schema to handle bus schedules, passenger information, ticketing data, and real-time tracking.

   c) **UI/UX Design (5 days):** The UI/UX design ensured that the system was user-friendly, with intuitive navigation and accessible features for all users, including passengers and bus operators.

4) **Implementation:**

   a) **Set Up Development Environment (2 days):** Necessary software, tools, and environments for development were installed and configured.

   b) **Frontend Development (15 days**): The front-end development included creating UI components, integrating them with backend services, and implementing the user authentication module.
      i) **UI Components (5 days**): Individual user interface components were developed.

ii) **Integration with Backend (5 days):** frontend components were connected with backend services and APIs.

iii) **User Authentication Module (5 days):** User login and authentication functionality were implemented and integrated.

c) **Backend Development (20 days):** The backend development included database(SQL) integration, API development,

i) **Database Integration (5 days):** Backend logic to interact with the database was implemented using SQL(Xamp).

ii) **API Development (10 days):** APIs were developed to handle data exchange between frontend and backend.

5) **Testing:**

a) **Unit Testing (5 days):** Each module of the bus management system was tested to ensure it worked as expected without errors.

b) **Integration Testing (5 days):** Integration testing ensured that the frontend and backend components worked together seamlessly.

c) **System Testing (5 days):** System testing validated the overall functionality of the bus management system, including edge cases and overall performance.

d) **Acceptance Testing (5 days):** WE tested the system to ensure it met their needs and expectations, providing feedback for final adjustments.

6) **Deployment:**

a) **Deployment Preparation (2 days**): All necessary preparations were made to ensure a smooth transition to the live environment, including final data migration and environment configuration.

b) **Deploy to Production (1 day):** The bus management system was deployed to production, making it available for use by end-users.

c) **Post-Deployment Testing (2 days):** Perform final testing in the production environment to ensure everything works as expected

In the Bus Management System project, we identified and managed several key risks to ensure successful delivery. Scope creep was controlled through strict change management processes. To prevent stakeholder miscommunication, we scheduled regular updates and documented decisions. We addressed technical challenges by conducting early feasibility studies and prototyping. Resource availability issues were mitigated with schedule buffers and cross-training. We managed budget overruns by detailed planning and regular monitoring. For data security, we implemented robust security measures and compliance protocols. These strategies, aligned with software project management best practices, helped us maintain project scope, timeline, and budget integrity.