Dharmsinh Desai University

Academic Year 2022-23

Department:

Faculty of Management and information science

Subject:

Software Engineering

Full Name: Sutariya Savankumar Sureshbhai

Roll No.: MA065

ID No.: 22MAPOG030

Submitted to: Prof. Minal V Shah | MCA Department

Student sign.   **Professor sign.**

TABLE OF CONTENTS

Sutariya Savankumar | MA065 | Batch 4

1. PROJECT PROFILE

1.1. PROJECT NAME

The project is named "Project Management Tool" or "PMT" for short.

1.2. PROJECT OBJECTIVES

The main objectives of the project are to:
- Provide a comprehensive set of features for project management, including project creation, task management, team collaboration, time tracking, reporting, notifications, and user management.
- Develop a tool that is easy to use, flexible, and customizable to meet the needs of different teams and projects.
- Help teams stay organized, communicate effectively, and track progress towards project goals.
- Build a scalable, secure, and reliable platform for project management.

1.3. TARGET AUDIENCE

The target audience for the project includes:
- Project managers and team leaders who need to manage projects and tasks.
- Team members who need to collaborate on project tasks and track their progress.
- Business owners and executives who need to track project progress and make data-driven decisions.
- Freelancers and consultants who need to manage multiple projects and clients.

1.4. BUSINESS CASE

The business case for the project is based on the following factors:
- Increased demand for project management tools due to the growing number of remote and distributed teams.
- The need for a flexible and customizable project management tool that can adapt to different project types and team sizes.
- The potential for revenue generation through subscription-based pricing models.
- The opportunity to establish a strong brand presence in the project management software market.

1.5. PROJECT SCOPE

The scope of the project includes:
- Design and development of a web-based project management tool.
- Implementation of a comprehensive set of features for project management, including project creation, task management, team collaboration, time tracking, reporting, notifications, and user management.
- Integration with third-party tools and services, such as email and calendar apps.
- Deployment on a cloud server using Docker containers.
- Ongoing support and maintenance of the tool.

2. REQUIREMENTS GATHERING & ANALYSIS

2.1. STAKEHOLDERS

The stakeholders for the project include project managers, team members, business owners, executives, and clients. To gather requirements, we will conduct interviews and surveys with stakeholders to identify their needs and pain points in project management.

2.2. FUNCTIONAL REQUIREMENTS

Based on stakeholder interviews and surveys, we have identified the following functional requirements for the tool:
- Project creation: The ability to create new projects and define project details such as name, start and end dates, and project goals.
- Task management: The ability to create, assign, and track tasks within a project. Tasks should have details such as task name, description, priority, deadline, and status.
- Team collaboration: The ability to invite team members to a project, assign tasks to them, and collaborate with them on project tasks.
- Time tracking: The ability to track the time spent on tasks and projects, which can help with project planning and resource allocation.
- Reporting: The ability to generate reports on project progress, such as task completion rates, time spent on tasks, and overall project status.
- Notifications: The ability to send notifications to team members when tasks are assigned or completed, or when project deadlines are approaching.
- User management: The ability to manage user accounts, including creating new accounts, assigning roles and permissions, and revoking access.

2.3. NON-FUNCTIONAL REQUIREMENTS

In addition to functional requirements, we have identified the following non-functional requirements for the tool:

- Usability: The tool should be easy to use and intuitive, with a clean and modern user interface.
- Performance: The tool should be fast and responsive, with minimal loading times and lag.
- Scalability: The tool should be able to handle large volumes of data and users.
- Security: The tool should be secure and protect user data from unauthorized access.
- Accessibility: The tool should be accessible to users with disabilities.

2.4. USER INTERFACE DESIGN

- Navigation Menu: The navigation menu should provide easy access to all the main features of the tool, such as creating a new project, adding tasks, and generating reports. It should be intuitive and user-friendly.
- Project Creation Form: The project creation form should allow the project manager to enter the project name, start and end dates, and project goals. It should be easy to use and include validation to ensure that all required fields are filled out.
- Task Management Dashboard: The task management dashboard should allow the project manager to view all the tasks in a project, including their status, priority, and deadline. It should also allow the project manager to assign tasks to team members and track their progress.
- User Profile Page: The user profile page should allow each team member to view and manage their tasks and time tracking. It should also include a summary of their progress on assigned tasks.
- Reporting Dashboard: The reporting dashboard should provide an overview of the project progress, including task completion rates, time spent on tasks, and overall project status. It should also allow the project manager to generate custom reports based on specific metrics.
- Accessibility: The user interface should be accessible to all team members, including those with disabilities. This includes using appropriate color contrasts, keyboard navigation, and assistive technology support.

3. SYSTEM SPECIFICATION

3.1. HARDWARE REQUIREMENTS:

- Processor: 1.8 GHz or faster dual-core processor
- Memory: 4 GB RAM or more
- Storage: 100 MB free disk space

3.2. SOFTWARE REQUIREMENTS:

- Operating System: Windows 10 or macOS 10.15 or later
- Web Browser: Google Chrome, Mozilla Firefox, or Apple Safari
- Server-Side Language: PHP 7.4 or later
- Web Server: Apache 2.4 or later
- Database: MySQL 8.0 or later

4. PROJECT DESCRIPTION

Sutariya Savankumar | MA065 | Batch 4

4.1. PROBLEM DEFINITION

Project managers and teams often face challenges when collaborating on projects. There is a need for a tool that can help manage tasks and keep everyone on the same page. Existing tools can be expensive or have a steep learning curve, making them difficult to use.

4.2. PROJECT OVERVIEW

Our project management tool is designed to provide an easy-to-use platform for managing projects. It includes features such as project creation, task management, team collaboration, time tracking, reporting, and notifications. The main user interface is simple and intuitive, allowing users to easily navigate the tool and manage their projects.

4.3. MODULE DESCRIPTION

4.3.1. PROJECT CREATION:

This module allows project managers to create new projects and define project details such as name, start and end dates, and project goals.

4.3.2. TASK MANAGEMENT

This module allows users to create, assign, and track tasks within a project. Tasks have details such as task name, description, priority, deadline, and status.

4.3.3. TEAM COLLABORATION

This module allows project managers to invite team members to a project, assign tasks to them, and collaborate with them on project tasks.
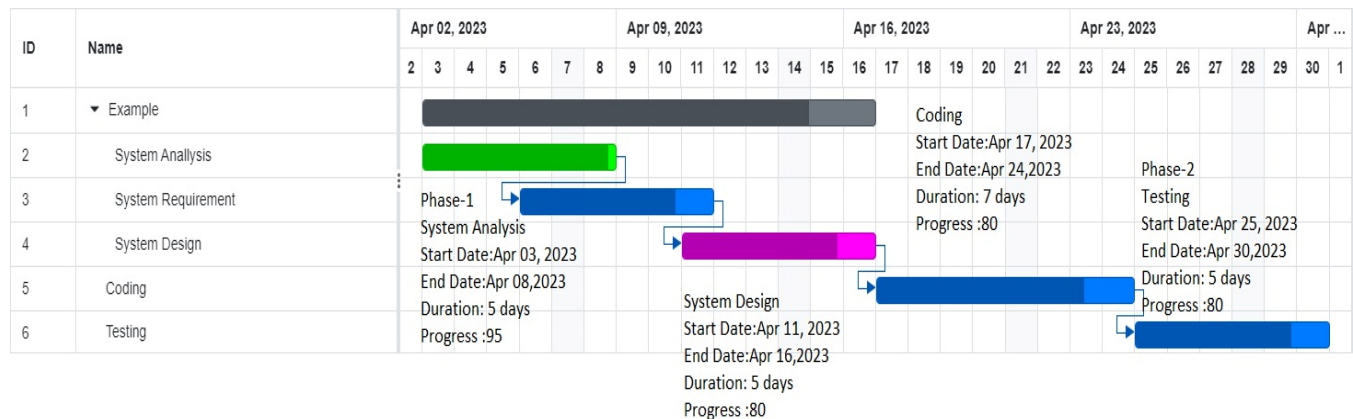
4.3.4. TIME TRACKING

This module allows users to track the time spent on tasks and projects, which can help with project planning and resource allocation.

4.3.5. REPORTING

This module allows project managers to generate reports on project progress, such as task completion rates, time spent on tasks, and overall project status.

4.4. TIMELINE CHART

ID	Name	Apr 02, 2023	Apr 09, 2023	Apr 16, 2023	Apr 23, 2023	Apr ...

(Gantt chart)

Phase-1
System Analysis
Start Date:Apr 03, 2023
End Date:Apr 08,2023
Duration: 5 days
Progress :95

System Design
Start Date:Apr 11, 2023
End Date:Apr 16,2023
Duration: 5 days
Progress :80

Coding
Start Date:Apr 17, 2023
End Date:Apr 24,2023
Duration: 7 days
Progress :80

Phase-2
Testing
Start Date:Apr 25, 2023
End Date:Apr 30,2023
Duration: 5 days
Progress :80

Rows:
1. Example
2. System Anallysis
3. System Requirement
4. System Design
5. Coding
6. Testing

4.5. USE CASES

To further refine the requirements, we have identified several use cases for the tool, including:

- Creating a new project
- Adding tasks to a project
- Assigning tasks to team members
- Collaborating with team members on tasks
- Tracking time spent on tasks
- Generating project reports
- Managing user accounts

These use cases are summarized in the following use case diagram:

(Next page ->)
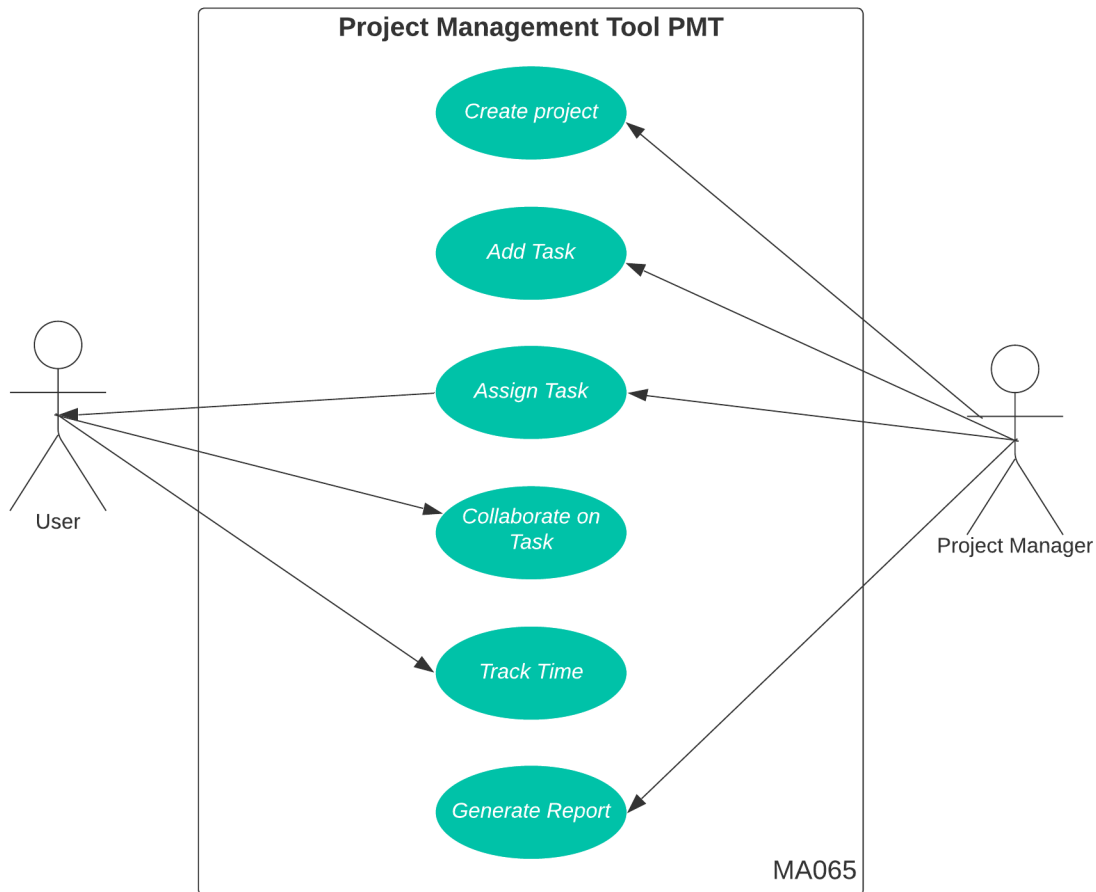
In this diagram, we only have two types of users: the Project Manager and the User. The use cases represented in the diagram include:

- Create Project: This use case allows the Project Manager to create a new project within the system.
- Add Task: This use case allows the Project Manager to add a new task to a project.
- Assign Task: This use case allows the Project Manager to assign a task to a User.
- Collaborate on Task: This use case allows the User to collaborate on a task.
- Track Time: This use case allows the User to track the time spent on a task or project.
- Generate Report: This use case allows the Project Manager to generate a report on project progress.

4.6. DATA FLOW DIAGRAM:

4.6.1. DFD LEVEL 0

0th level DFD

4.6.2. DFD LEVEL 1

1st level DFD

Sutariya Savankumar | MA065 | Batch 4
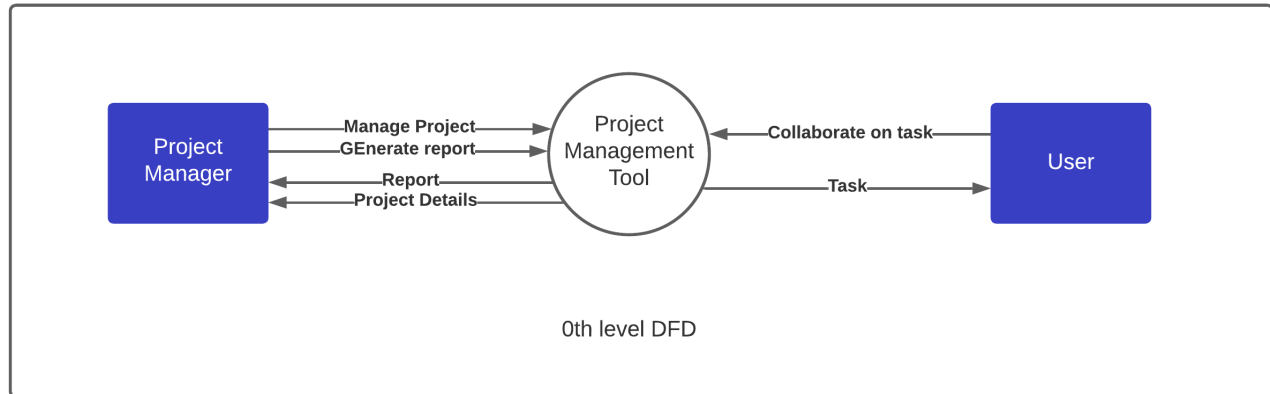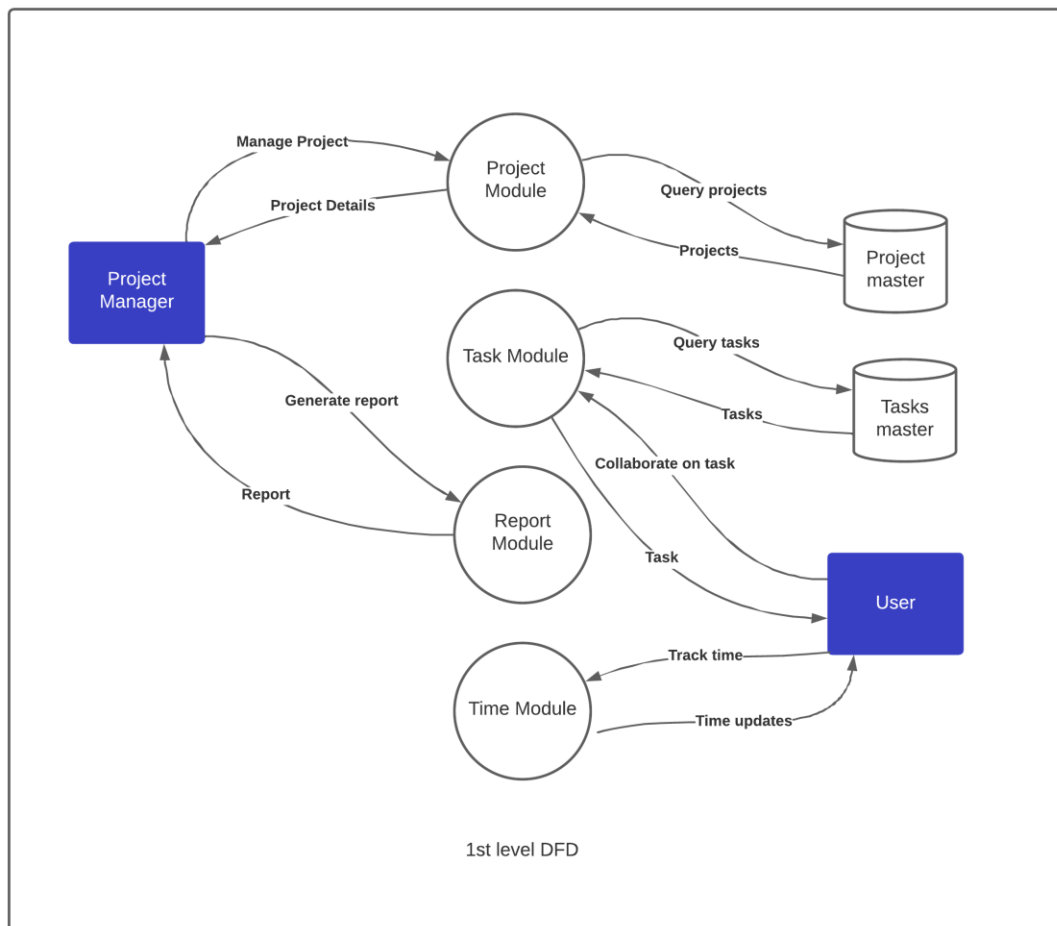
5. SYSTEM TESTING

Once source code has been generated, software must be tested to uncover (and correct) as many errors as possible before delivery to customer. Our goal is to design a series of test cases that have a high likelihood of finding errors. To uncover the errors software techniques are used. These techniques provide systematic guidance for designing test that
- Exercise the internal logic of software components, and
- Exercise the input and output domains of the program to uncover errors In program function, behavior and performance.

5.1. TESTING METHODOLOGIES

A strategy for software testing must accommodate low-level tests that are necessary to verify that a small source code segment has been correctly implemented as well as high-level tests that validate major system functions against customer requirements. A strategy must provide guidance for the practitioner and a set of milestones for the manager. Because the steps of the test strategy occur at a time when deadline pressure begins to rise, progress must be measurable and problems must surface as early as possible. Following testing techniques are well known and the same strategy is adopted during this project testing.

5.2. UNIT TESTING

Unit testing focuses verification effort on the smallest unit of software design- the software component or module. The unit test is white-box oriented. The unit testing implemented in every module of student attendance management System. by giving correct manual input to the system, the data are stored in database and retrieved. If you want required module to access input or get the output from the End user. any error will accrue the time will provide handler to show what type of error will have accrued.

5.3. SYSTEM TESTING

System testing is actually a series of different tests whose primary purpose is to fully exercise the computer-based system. Below we have described the two types of testing which have been taken for this project. it is to check all modules worked on input basis. if you want change any values or inputs will change all information. so specified input is must.

5.4. PERFORMANCE TESTING

Performance testing is designed to test the run-time performance of software within the context of an integrated system. Performance testing occurs throughout all steps in the testing process. Even at the unit level, the performance of an individual module may be assessed as white-box tests are conducted.

This project reduces attendance table, codes. it will generate report fast.no have extra time or waiting of results. entered correct data will show result few milliseconds. just used only low memory of our system. Automatically do not getting access at another software. Get user permission and access to other applications.

5.5. TEST CASES

5.5.1. CREATE PROJECT TEST

This test case will verify that a new project can be created within the system. The test will ensure that all project details, such as name, start and end dates, and project goals are saved correctly.

5.5.2. ADD TASK TEST

This test case will verify that a new task can be added to a project. The test will ensure that all task details, such as task name, description, priority, deadline, and status are saved correctly.

5.5.3. ASSIGN TASK TEST:

This test case will verify that a task can be assigned to a user. The test will ensure that the assigned user can view and access the task.

5.5.4. COLLABORATE ON TASK TEST

This test case will verify that users can collaborate on a task. The test will ensure that multiple users can view, edit, and comment on a task.

5.5.5. TRACK TIME TEST

This test case will verify that users can track time spent on tasks and projects. The test will ensure that the time tracking feature is accurate and records time correctly.

5.5.6. GENERATE REPORT TEST:

This test case will verify that the project manager can generate reports on project progress. The test will ensure that the generated reports are accurate and provide relevant project data.

6. AGILE PRINCIPLES

6.1. USERS OF THE SYSTEM

- User (Team member)
- Project manager

6.2. USER STORIES

6.2.1. PROJECT MANAGER

6.2.1.1. "As a Project Manager, I want to be able to create a new project so that I can track its progress."

ACCEPTANCE CRITERIA:

- The system should allow me to enter a project name, start and end dates, and project goals.
- Once I create a project, it should be added to the system and I should be able to view it.
- The system should prevent me from creating a project with the same name as an existing project.

6.2.1.2. "As a Project Manager, I want to be able to add a new task to a project so that I can keep track of project progress."

ACCEPTANCE CRITERIA:

- The system should allow me to select a project to add a task to.
- The system should allow me to enter a task name, description, priority, deadline, and status.
- Once I add a task, it should be associated with the selected project and I should be able to view it.

6.2.1.3. "As a Project Manager, I want to be able to assign a task to a User so that they can work on it."

ACCEPTANCE CRITERIA:

- The system should allow me to select a project and a task to assign.
- The system should allow me to select a User to assign the task to.

- Once I assign a task, it should be associated with the selected User and I should be able to view it on their task list.

6.2.1.4. AS A PROJECT MANAGER, I WANT TO BE ABLE TO GENERATE A REPORT ON PROJECT PROGRESS SO THAT I CAN TRACK THE OVERALL STATUS OF THE PROJECT.

ACCEPTANCE CRITERIA:

- The system should allow me to select a project to generate a report for.
- The report should include information such as task completion rates, time spent on tasks, and overall project status.
- The report should be generated in a format that is easy to read and understand.

6.2.2. USER

6.2.2.1. "As a User, I want to be able to collaborate on a task so that I can work with others to complete it."

ACCEPTANCE CRITERIA:

- The system should allow me to view tasks that have been assigned to me.
- The system should allow me to add comments or updates to a task.
- Once I add a comment or update, it should be visible to other Users who have access to the task.

6.2.2.2. "As a User, I want to be able to track the time spent on a task or project so that I can better plan my work."

ACCEPTANCE CRITERIA:

- The system should allow me to start and stop a timer for a task or project.
- The system should display the amount of time I have spent on each task or project.
- The system should allow me to manually adjust the time spent on a task or project if necessary.

7. CONCLUSION

In conclusion, the project management tool developed is an effective solution for managing projects and tasks, enabling teams to collaborate and manage their resources more efficiently. The tool includes a user-friendly interface and provides various features such as project creation, task management, team collaboration, time tracking, reporting, notifications, and user management.

Through the use of a thorough requirements gathering and analysis process, a comprehensive system design, and rigorous testing, the tool meets the needs and expectations of its users. The project was developed with scalability in mind, ensuring that it can be expanded and enhanced in the future to meet the changing needs of its users.

Overall, the project management tool provides a valuable solution for businesses and teams of all sizes, enabling them to streamline their project management processes and improve their productivity and efficiency.