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Acknowledgement

I initially felt excited to work on this coursework but struggled with time management as the deadline approached, especially while doing erd and gathering normalisation. However, the support from my friends and module teacher, Sagar Basnet, was invaluable. My friends motivated me with their insights and understanding, while Mr. Sagar Basnet, guidance, and patience greatly enhanced my understanding of the subject and helped me achieve the best possible outcome. I am deeply grateful for their contributions and support throughout this journey.

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1 Introduction

This coursework is about creating a web-based project management system for LS Corporation, a mid-sized tech company facing issues with unorganized project workflows, poor communication, and difficulty in tracking tasks. The goal is to build a centralized system using Oracle SQL Developer Data Modeler and ASP.NET with C# to improve project management, teamwork, and task tracking. The system will help users easily handle projects, tasks, subtasks, milestones, and team assignments in an organized way.

2 Entity Relationship Diagram

The Entity Relationship Model is a simple way to design a database. It shows real-world things like people or objects, known as entities, and how they are connected, called relationships. An ER Diagram is a visual chart that utilizes rectangles for entities, ellipses for their details (attributes), and diamonds to show relationships. Designed by Peter Chen in 1976, it is a mechanism to make database design so clear and understandable for designers to convert ideas into tables of data storage. (geeksforgeeks, 2024)

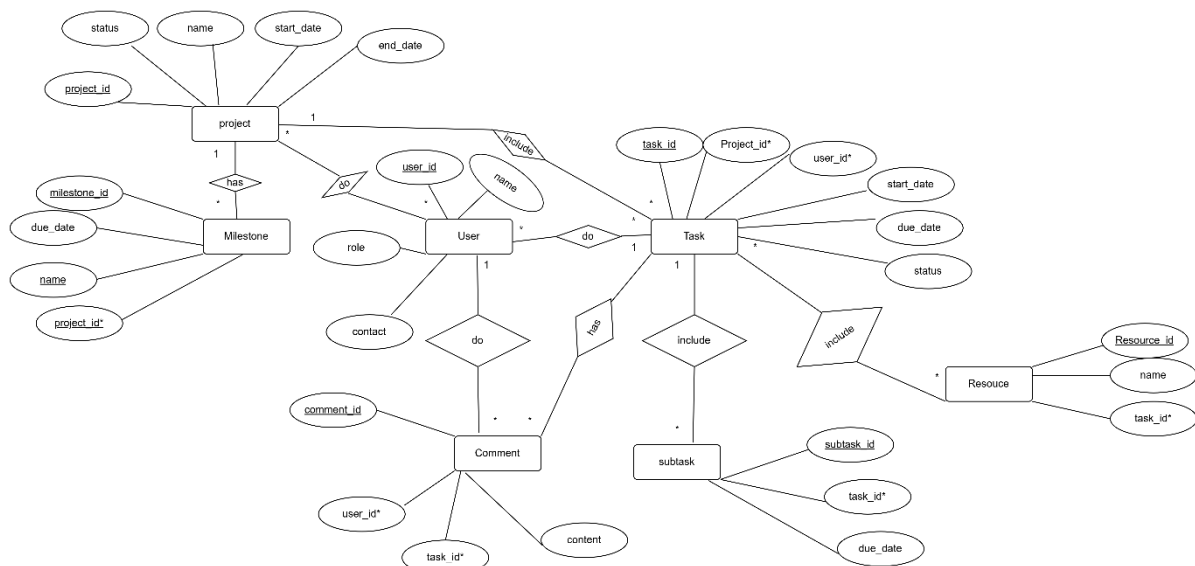


Figure 1 of ERD

3 Normalization

Normalization in database design refers to the process of organizing data in a database in such a way that makes the database more efficient and easier to manage. It reduces data redundancy and ensures that the data remains accurate and consistent. By organizing data properly, normalization avoids problems such as inconsistency during adding, deletion, or updating of data and makes the database adaptable to future changes. (geeks for geeks, 2024)

3.1 UNF:

User (user_id, user_name, user_email, user_contact, {project_id, project_name, project_start_date, project_due_date, project_status, {task_id, task_name, task_start_date, task_due_date, task_status, {subtask_id, subtask_name, sub_task_status}}, {Milestone_id, name, date}})

3.2 First Normal Form

First Normal Form (1NF) ensures that each cell in a table contains only one value, with no repeating groups or lists.

Final 1NF:

User-1(user_id, user_name, user_email, user_contact)

Project-1(project_id, project_name, project_start_date, project_due_date, project_status, user_id*)

Task-1(task_id, task_name, task_start_date, task_due_date, task_status, project_id*, user_id*)

Subtask-1(subtask_id, subtask_name, sub_task_status, task_id*, user_id*)

Milestone-1(milestone_id, name, due_date, project_id*, user_id*)

3.3 Second Normal Form

Second Normal Form (2NF) removes partial dependencies by ensuring that all non-key attributes depend on the entire primary key, not just part of it.

Functional Dependencies:

Project ID - Project Name, Project Start Date, Project Due Date, Project Status

User ID - User Name, User Email, User Contact

Task ID – TaskName, TaskStartDate, TaskDueDate

Subtask ID-SubtaskName

2NF:

Partial Dependencies

User-2(user_id, user_name, user_email, user_contact)

Project-2(project_id, project_name, project_start_date, project_due_date, project_status)

User-Project(user_id*, project_id*)

Task-2(task_id, task_name, task_start_date, task_due_date, task_status, project_id*)

User-Task-3(task_id*, user_id*)

Subtask-2(subtask_id, subtask_name, task_id*)

User-Task(task_id*, user_id*)

Milestone(milestone_id, name, due_date, project_id*, user_id*)

3.4 Third Normal Form

Third Normal Form (3NF) removes transitive dependencies by ensuring that non-key attributes depend only on the primary key, not on other non-key attributes.

Transitive Dependency:

Project ID and Task ID are already dependent on primary keys, so there are no additional transitive dependencies to eliminate.

3NF:

User-3(user_id, user_name, user_email, user_contact)

Project-3(project_id, project_name, project_start_date, project_due_date, project_status)

User-Project-3(user_id*, project_id*)

Task-3(task_id, task_name, task_start_date, task_due_date, task_status, project_id*)

User-Task-3(task_id*, user_id*)

Subtask-3(subtask_id, subtask_name, task_id*)

Milestone-3(milestone_id, name, due_date, project_id*, user_id*)

4 Final ERD

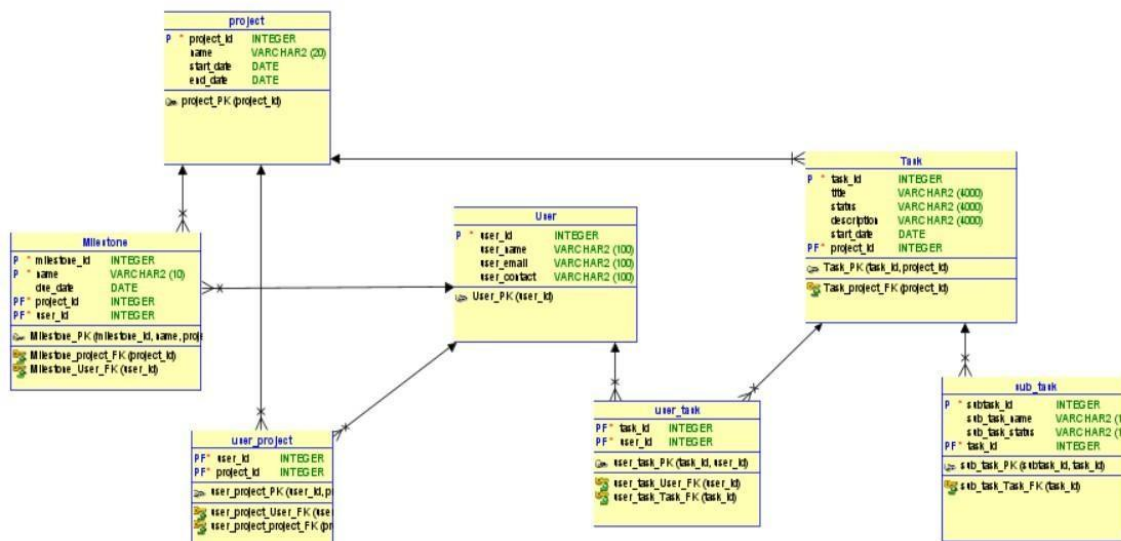


Figure 2 of Final ERD

5 Data Dictionary

A data dictionary functions as a useful reference tool which describes all essential details regarding system or database data. A data dictionary explains data items meaning ("customer ID" and "order date") while describing information types (text, numbers and dates) and specifying field usage rules ("this field requires a value" and "must use email format"). The centralized storage of all these explanations ensures consistent understanding of data elements among users who need to work with them correctly while maintaining uniform definitions and procedural rules. This document functions like a compact guide which maintains consistent understanding about information management procedures within the organization. (library edu, n.d.)

5.1 Data Dictionary of Milestone

MILESTONE						
Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details
COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS	
MILESTONE_ID	NUMBER	No	null	1	null	
NAME	VARCHAR2(30 BYTE)	No	null	2	null	
DUE_DATE	DATE	Yes	null	3	null	
PROJECT_ID	NUMBER	No	null	4	null	
USER_ID	NUMBER	No	null	5	null	

Figure 3 data dictionary of milestone

5.2 Data Dictionary of Project

PROJECT						
Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details
COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS	
PROJECT_ID	NUMBER	No	null	1	null	
NAME	VARCHAR2(20 BYTE)	Yes	null	2	null	
START_DATE	DATE	Yes	null	3	null	
END_DATE	DATE	Yes	null	4	null	

Figure 4 data dictionary of project

5.3 Data Dictionary of Sub_Task

SUB_TASK						
Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details
COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS	
SUBTASK_ID	NUMBER	No	null	1	null	
SUB_TASK_NAME	VARCHAR2(100 BYTE)	Yes	null	2	null	
SUB_TASK_STATUS	VARCHAR2(100 BYTE)	Yes	null	3	null	
TASK_ID	NUMBER	No	null	4	null	

Figure 5 data dictionary of sub task

5.4 Data Dictionary of Task

TASK					
Columns	Constraints	Grants	Statistics	Triggers	Dependencies
Details	Partitions	Indexes			
COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS
TASK_ID	NUMBER	No	null	1	null
TITLE	VARCHAR2(4000 BYTE)	Yes	null	2	null
STATUS	VARCHAR2(4000 BYTE)	Yes	null	3	null
DESCRIPTION	VARCHAR2(4000 BYTE)	Yes	null	4	null
START_DATE	DATE	Yes	null	5	null
PROJECT_ID	NUMBER	No	null	6	null

Figure 6 Data Dictionary of Task

5.5 Data Dictionary of User_Project

USER_PROJECT					
Columns	Constraints	Grants	Statistics	Triggers	Dependencies
Details	Partitions	Indexes			
COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS
USER_ID	NUMBER	No	null	1	null
PROJECT_ID	NUMBER	No	null	2	null

Figure 7 data dictionary of user_project

5.6 Data dictionary of user_task

USER_TASK					
Columns	Constraints	Grants	Statistics	Triggers	Dependencies
Details	Partitions	Indexes			
COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS
TASK_ID	NUMBER	No	null	1	null
USER_ID	NUMBER	No	null	2	null

Figure 8 data dictionary of user_task

5.7 Data Dictionary of user



The image shows a screenshot of a database interface for the 'User' table. At the top, there is a blue header bar with the word 'User' in white. Below this, there is a navigation bar with tabs: 'Columns', 'Constraints', 'Grants', 'Statistics', 'Triggers', 'Dependencies', 'Details', 'Partitions', and 'Indexes'. The 'Columns' tab is selected. Below the navigation bar is a table with the following columns: 'COLUMN_NAME', 'DATA_TYPE', 'NULLABLE', 'DATA_DEFAULT', 'COLUMN_ID', and 'COMMENTS'. The table contains four rows of data for the 'User' table.

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
USER_ID	NUMBER	No	null	1	null
USER_NAME	VARCHAR2(100 BYTE)	Yes	null	2	null
USER_EMAIL	VARCHAR2(100 BYTE)	Yes	null	3	null
USER_CONTACT	VARCHAR2(100 BYTE)	Yes	null	4	null

Figure 9 Data dictionary of user

6 Database Creation

6.1 User Table

Creating Table

```
CREATE TABLE "User"
(
    user_id      NUMBER NOT NULL ,
    user_name    VARCHAR2 (100) ,
    user_email   VARCHAR2 (100) ,
    user_contact VARCHAR2 (100)
)
;

ALTER TABLE "User"
ADD CONSTRAINT User_PK PRIMARY KEY ( user_id ) ;
```

Figure 10 of creating user table

Inserting Values

```
INSERT INTO "User" VALUES (1, 'Ram', 'ram@example.com', '9841234567');
INSERT INTO "User" VALUES (2, 'Hari', 'hari@example.com', '9851234567');
INSERT INTO "User" VALUES (3, 'Gopal', 'gopal@example.com', '9861234567');
INSERT INTO "User" VALUES (4, 'Krishna', 'krishna@example.com', '9801234567');
INSERT INTO "User" VALUES (5, 'Sita', 'sita@example.com', '9811234567');
INSERT INTO "User" VALUES (6, 'Radha', 'radha@example.com', '9843456789');
INSERT INTO "User" VALUES (7, 'Ramesh', 'ramesh@example.com', '9854567890');
INSERT INTO "User" VALUES (8, 'Bishal', 'bishal@example.com', '9865678901');
INSERT INTO "User" VALUES (9, 'Manoj', 'manoj@example.com', '9806789012');
INSERT INTO "User" VALUES (10, 'Sujan', 'sujan@example.com', '9817890123');
INSERT INTO "User" VALUES (11, 'Sarita', 'sarita@example.com', '9848901234');
INSERT INTO "User" VALUES (12, 'Dipesh', 'dipesh@example.com', '9859012345');
INSERT INTO "User" VALUES (13, 'Anita', 'anita@example.com', '9860123456');
INSERT INTO "User" VALUES (14, 'Kumar', 'kumar@example.com', '9801234567');
INSERT INTO "User" VALUES (15, 'Raj', 'raj@example.com', '9812345678');
```

Figure 11 of inserting user table values

Showing Table

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
1	1	Ram	ram@example.com	9841234567
2	2	Hari	hari@example.com	9851234567
3	3	Gopal	gopal@example.com	9861234567
4	4	Krishna	krishna@example.com	9801234567
5	5	Sita	sita@example.com	9811234567
6	6	Radha	radha@example.com	9843456789
7	7	Ramesh	ramesh@example.com	9854567890
8	8	Bishal	bishal@example.com	9865678901
9	9	Manoj	manoj@example.com	9806789012
10	10	Sujan	sujan@example.com	9817890123
11	11	Sarita	sarita@example.com	9848901234
12	12	Dipesh	dipesh@example.com	9859012345
13	13	Anita	anita@example.com	9860123456
14	14	Kumar	kumar@example.com	9801234567
15	15	Raj	raj@example.com	9812345678

Figure 12 showing table of user

6.2 Project Table

Creating Table

```

CREATE TABLE project
(
    project_id NUMBER NOT NULL ,
    name        VARCHAR2 (20) ,
    start_date  DATE ,
    end_date    DATE
)
;

ALTER TABLE project
ADD CONSTRAINT project_PK PRIMARY KEY ( project_id ) ;

```

Figure 13 of creating projectable

Inserting Values

```

INSERT INTO project VALUES (1, 'E-Commerce Site', DATE '2025-01-01', DATE '2025-03-31');
INSERT INTO project VALUES (2, 'HR Management', DATE '2025-02-01', DATE '2025-04-30');
INSERT INTO project VALUES (3, 'Inventory System', DATE '2025-03-01', DATE '2025-06-30');
INSERT INTO project VALUES (4, 'Learning Portal', DATE '2025-04-01', DATE '2025-07-31');
INSERT INTO project VALUES (5, 'Mobile App', DATE '2025-05-01', DATE '2025-08-31');
INSERT INTO project VALUES (6, 'Social Media Platform', DATE '2025-06-01', DATE '2025-09-30');
INSERT INTO project VALUES (7, 'AI Chatbot', DATE '2025-07-01', DATE '2025-10-31');
INSERT INTO project VALUES (8, 'Data Analytics', DATE '2025-08-01', DATE '2025-11-30');
INSERT INTO project VALUES (9, 'Travel Planner', DATE '2025-09-01', DATE '2025-12-31');
INSERT INTO project VALUES (10, 'Hospital System', DATE '2025-10-01', DATE '2026-01-31');
INSERT INTO project VALUES (11, 'Online Forum', DATE '2025-11-01', DATE '2026-02-28');
INSERT INTO project VALUES (12, 'IoT Dashboard', DATE '2025-12-01', DATE '2026-03-31');
INSERT INTO project VALUES (13, 'Gaming Platform', DATE '2026-01-01', DATE '2026-04-30');
INSERT INTO project VALUES (14, 'Education App', DATE '2026-02-01', DATE '2026-05-31');
INSERT INTO project VALUES (15, 'Blockchain App', DATE '2026-03-01', DATE '2026-06-30');
INSERT INTO project VALUES (16, 'WEB App', DATE '2026-01-01', DATE '2026-02-28');

```

Figure 14 of inserting project table values

Showing Table

	PROJECT_ID	NAME	START_DATE	END_DATE
1	1	E-Commerce Site	01-JAN-25	31-MAR-25
2	2	HR Management	01-FEB-25	30-APR-25
3	3	Inventory System	01-MAR-25	30-JUN-25
4	4	Learning Portal	01-APR-25	31-JUL-25
5	5	Mobile App	01-MAY-25	31-AUG-25
6	7	AI Chatbot	01-JUL-25	31-OCT-25
7	8	Data Analytics	01-AUG-25	30-NOV-25
8	9	Travel Planner	01-SEP-25	31-DEC-25
9	10	Hospital System	01-OCT-25	31-JAN-26
10	11	Online Forum	01-NOV-25	28-FEB-26
11	12	IoT Dashboard	01-DEC-25	31-MAR-26
12	13	Gaming Platform	01-JAN-26	30-APR-26
13	14	Education App	01-FEB-26	31-MAY-26
14	15	Blockchain App	01-MAR-26	30-JUN-26
15	16	WEB App	01-JAN-26	28-FEB-26

Figure 15 showing table of project

6.3 Milestone Table

```
CREATE TABLE Milestone
(
    milestone_id NUMBER NOT NULL ,
    name          VARCHAR2 (10) NOT NULL ,
    due_date      DATE ,
    project_id    NUMBER NOT NULL ,
    user_id       NUMBER NOT NULL
)
;

ALTER TABLE Milestone
    ADD CONSTRAINT Milestone_PK PRIMARY KEY ( milestone_id, name, project_id, user_id ) ;
```

Figure 16 of creating Milestone table

Inserting Values

```
INSERT INTO Milestone VALUES (1, 'Phase 1', DATE '2025-01-20', 1, 1);
INSERT INTO Milestone VALUES (2, 'Phase 2', DATE '2025-02-15', 1, 2);
INSERT INTO Milestone VALUES (3, 'Phase 3', DATE '2025-03-01', 2, 3);
INSERT INTO Milestone VALUES (4, 'Completion', DATE '2025-03-31', 2, 4);
INSERT INTO Milestone VALUES (5, 'Review', DATE '2025-04-15', 3, 5);
INSERT INTO Milestone VALUES (6, 'Kickoff', DATE '2025-01-05', 3, 6);
INSERT INTO Milestone VALUES (7, 'Prototype', DATE '2025-02-10', 4, 7);
INSERT INTO Milestone VALUES (8, 'Alpha Release', DATE '2025-03-20', 5, 8);
INSERT INTO Milestone VALUES (9, 'Beta Release', DATE '2025-04-30', 6, 9);
INSERT INTO Milestone VALUES (10, 'Production', DATE '2025-05-15', 7, 10);
INSERT INTO Milestone VALUES (11, 'Feedback Gathering', DATE '2025-06-01', 8, 11);
INSERT INTO Milestone VALUES (12, 'Iteration 1', DATE '2025-06-15', 9, 12);
INSERT INTO Milestone VALUES (13, 'Iteration 2', DATE '2025-07-01', 10, 13);
INSERT INTO Milestone VALUES (14, 'Final Demo', DATE '2025-07-15', 11, 14);
INSERT INTO Milestone VALUES (15, 'Launch', DATE '2025-08-01', 12, 15);
```

Figure 17 of inserting Milestone table values

Showing Table

	⚡ MILESTONE_ID	⚡ NAME	⚡ DUE_DATE	⚡ PROJECT_ID	⚡ USER_ID
1	1	Phase 1	20-JAN-25	1	1
2	2	Phase 2	15-FEB-25	1	2
3	3	Phase 3	01-MAR-25	2	3
4	4	Completion	31-MAR-25	2	4
5	5	Review	15-APR-25	3	5
6	6	Kickoff	05-JAN-25	3	6
7	7	Prototype	10-FEB-25	4	7
8	10	Production	15-MAY-25	7	10
9	14	Final Demo	15-JUL-25	11	14
10	15	Launch	01-AUG-25	12	15
11	8	Alpha Release	20-MAR-25	5	8
12	11	Feedback Gathering	01-JUN-25	8	11
13	12	Iteration 1	15-JUN-25	9	12
14	13	Iteration 2	01-JUL-25	10	13

Figure 18 showing table of Milestone

6.4 Sub_task Table

```

CREATE TABLE sub_task
(
    subtask_id    NUMBER NOT NULL ,
    sub_task_name VARCHAR2 (100) ,
    sub_task_status VARCHAR2 (100) ,
    task_id       NUMBER NOT NULL
)
;

ALTER TABLE sub_task
    ADD CONSTRAINT sub_task_PK PRIMARY KEY ( subtask_id, task_id ) ;

```

Figure 19 of creating sub_tasktable

Inserting Values

```

INSERT INTO sub_task VALUES (1, 'Wireframe Design', 'In Progress', 1);
INSERT INTO sub_task VALUES (2, 'Backend Setup', 'Completed', 1);
INSERT INTO sub_task VALUES (3, 'Database Schema', 'In Progress', 2);
INSERT INTO sub_task VALUES (4, 'User Authentication', 'Pending', 2);
INSERT INTO sub_task VALUES (5, 'Frontend Development', 'Completed', 3);
INSERT INTO sub_task VALUES (6, 'API Integration', 'In Progress', 3);
INSERT INTO sub_task VALUES (7, 'Content Writing', 'Completed', 4);
INSERT INTO sub_task VALUES (8, 'UI/UX Design', 'In Progress', 4);
INSERT INTO sub_task VALUES (9, 'Testing', 'Pending', 5);
INSERT INTO sub_task VALUES (10, 'Payment Gateway Integration', 'In Progress', 5);
INSERT INTO sub_task VALUES (11, 'Data Visualization', 'Pending', 6);
INSERT INTO sub_task VALUES (12, 'API Development', 'Completed', 6);
INSERT INTO sub_task VALUES (13, 'Market Research', 'In Progress', 7);
INSERT INTO sub_task VALUES (14, 'Deployment', 'Pending', 7);
INSERT INTO sub_task VALUES (15, 'User Feedback Analysis', 'Completed', 8);

```

Figure 20 of inserting sub_task table values

Showing Table

	SUBTASK_ID	SUB_TASK_NAME	SUB_TASK_STATUS	TASK_ID
1	1	Wireframe Design	In Progress	1
2	2	Backend Setup	Completed	1
3	3	Database Schema	In Progress	2
4	4	User Authentication	Pending	2
5	5	Frontend Development	Completed	3
6	6	API Integration	In Progress	3
7	7	Content Writing	Completed	4
8	8	UI/UX Design	In Progress	4
9	9	Testing	Pending	5
10	10	Payment Gateway Integration	In Progress	5
11	11	Data Visualization	Pending	6
12	12	API Development	Completed	6
13	13	Market Research	In Progress	7
14	14	Deployment	Pending	7
15	15	User Feedback Analysis	Completed	8

Figure 21 showing table of sub_task

6.5 Task Table

Creating Table

```

CREATE TABLE Task
(
    task_id    NUMBER NOT NULL ,
    title      VARCHAR2 (4000) ,
    status     VARCHAR2 (4000) ,
    description VARCHAR2 (4000) ,
    start_date DATE ,
    project_id NUMBER NOT NULL
)
;

ALTER TABLE Task
ADD CONSTRAINT Task_PK PRIMARY KEY ( task_id, project_id ) ;

```

Figure 22 of creating task table

Inserting value

```

INSERT INTO Task VALUES (1, 'Database Design', 'Completed', 'Design schema for Project A', DATE '2025-01-05', 1);
INSERT INTO Task VALUES (2, 'UI Design', 'In Progress', 'Create wireframes', DATE '2025-01-15', 1);
INSERT INTO Task VALUES (3, 'Backend API', 'Completed', 'Setup backend services', DATE '2025-01-10', 1);
INSERT INTO Task VALUES (4, 'Testing', 'Not Started', 'Test application modules', DATE '2025-02-01', 2);
INSERT INTO Task VALUES (5, 'Deployment', 'Planned', 'Deploy application', DATE '2025-02-15', 2);
INSERT INTO Task VALUES (6, 'Requirement Gathering', 'Completed', 'Collect all requirements', DATE '2025-01-03', 3);
INSERT INTO Task VALUES (7, 'Code Review', 'In Progress', 'Review codebase', DATE '2025-01-20', 3);
INSERT INTO Task VALUES (8, 'Documentation', 'Not Started', 'Prepare documentation', DATE '2025-02-05', 4);
INSERT INTO Task VALUES (9, 'Bug Fixing', 'In Progress', 'Fix known issues', DATE '2025-02-10', 4);
INSERT INTO Task VALUES (10, 'Code Optimization', 'Completed', 'Optimize backend code', DATE '2025-01-25', 5);
INSERT INTO Task VALUES (11, 'Frontend Integration', 'Planned', 'Integrate frontend with backend', DATE '2025-02-20', 5);
INSERT INTO Task VALUES (12, 'Security Testing', 'Completed', 'Perform security tests', DATE '2025-01-30', 7);
INSERT INTO Task VALUES (13, 'Final Presentation', 'Planned', 'Present project to stakeholders', DATE '2025-02-25', 8);
INSERT INTO Task VALUES (14, 'Data Migration', 'Not Started', 'Migrate data to new system', DATE '2025-03-01', 9);
INSERT INTO Task VALUES (15, 'User Training', 'Planned', 'Train users on new system', DATE '2025-03-10', 10);

```

Figure 23 of inserting task table values

Showing Table

TASK_ID	TITLE	STATUS	DESCRIPTION	START_DATE	PROJECT_ID
1	1 Database Design	Completed	Design schema for Project A	05-JAN-25	1
2	2 UI Design	In Progress	Create wireframes	15-JAN-25	1
3	3 Backend API	Completed	Setup backend services	10-JAN-25	1
4	4 Testing	Not Started	Test application modules	01-FEB-25	2
5	5 Deployment	Planned	Deploy application	15-FEB-25	2
6	6 Requirement Gathering	Completed	Collect all requirements	03-JAN-25	3
7	7 Code Review	In Progress	Review codebase	20-JAN-25	3
8	8 Documentation	Not Started	Prepare documentation	05-FEB-25	4
9	9 Bug Fixing	In Progress	Fix known issues	10-FEB-25	4
10	10 Code Optimization	Completed	Optimize backend code	25-JAN-25	5
11	12 Security Testing	Completed	Perform security tests	30-JAN-25	7
12	13 Final Presentation	Planned	Present project to stakeholders	25-FEB-25	8
13	14 Data Migration	Not Started	Migrate data to new system	01-MAR-25	9
14	15 User Training	Planned	Train users on new system	10-MAR-25	10
15	11 Frontend Integration	Planned	Integrate frontend with backend	20-FEB-25	5

Figure 24 showing value of task table

6.6 User_Project Table

Creating Table

```

CREATE TABLE user_project
(
    user_id    INTEGER NOT NULL ,
    project_id INTEGER NOT NULL
)
;

ALTER TABLE user_project
ADD CONSTRAINT user_project_PK PRIMARY KEY ( user_id, project_id ) ;

```

Figure 25 of creating user_project table

Inserting Values


```

INSERT INTO user_project VALUES (1, 1);
INSERT INTO user_project VALUES (2, 1);
INSERT INTO user_project VALUES (3, 2);
INSERT INTO user_project VALUES (4, 2);
INSERT INTO user_project VALUES (5, 3);
INSERT INTO user_project VALUES (6, 3);
INSERT INTO user_project VALUES (7, 4);
INSERT INTO user_project VALUES (8, 4);
INSERT INTO user_project VALUES (9, 5);
INSERT INTO user_project VALUES (10, 5);
INSERT INTO user_project VALUES (11, 3);
INSERT INTO user_project VALUES (12, 5);
INSERT INTO user_project VALUES (13, 7);
INSERT INTO user_project VALUES (14, 7);
INSERT INTO user_project VALUES (15, 8);

```

Figure 26 of inserting user_table values

Showing Table

	USER_ID	PROJECT_ID
1	1	1
2	2	1
3	3	2
4	4	2
5	5	3
6	6	3
7	7	4
8	8	4
9	9	5
10	10	5
11	13	7
12	14	7
13	15	8
14	11	3
15	12	5

Figure 27 showing table of user_project

6.7 User_Task Table

Creating Table

```
CREATE TABLE user_task
(
    task_id NUMBER NOT NULL ,
    user_id NUMBER NOT NULL
)
;

ALTER TABLE user_task
ADD CONSTRAINT user_task_PK PRIMARY KEY ( task_id, user_id ) ;
```

Figure 28 creating table of user_task

Inserting Value

```
INSERT INTO user_task VALUES (1, 1);
INSERT INTO user_task VALUES (2, 2);
INSERT INTO user_task VALUES (3, 3);
INSERT INTO user_task VALUES (4, 4);
INSERT INTO user_task VALUES (5, 5);
INSERT INTO user_task VALUES (6, 6);
INSERT INTO user_task VALUES (7, 7);
INSERT INTO user_task VALUES (8, 8);
INSERT INTO user_task VALUES (9, 9);
INSERT INTO user_task VALUES (10, 10);
INSERT INTO user_task VALUES (11, 11);
INSERT INTO user_task VALUES (12, 12);
INSERT INTO user_task VALUES (13, 13);
INSERT INTO user_task VALUES (14, 14);
INSERT INTO user task VALUES (15, 15);
```

Figure 29 of inserting user_task table values

Showing Table

	TASK_ID	USER_ID
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15

Figure 30 showing table of user_project

7 User Manual

7.1 For Dashboard

Dashboard	User Management				
User Details Project Details Task Details Subtask Details Milestone Details User Projects Project Milestones Top Performers	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT	
	Edit Delete	3	Gopals	gopal@example.com	9861234567
	Edit Delete	4	Krishna	krishna@example.com	9801234567
	Edit Delete	5	Sita	sita@example.com	9811234567
	Edit Delete	6	Radha	radha@example.com	9843456789
	Edit Delete	7	Ramesh	ramesh@example.com	9854567890
	Edit Delete	8	Bishal	bishal@example.com	9865678901
	Edit Delete	9	Manoj	manoj@example.com	9806789012
	Edit Delete	10	Sujan	sujan@example.com	9817890123
	Edit Delete	11	Sarita	sarita@example.com	9848901234
	Edit Delete	12	Dipesh	dipesh@example.com	9859012345

This is the dashboard which is present in each page you visit you can simply click on the pages that you wanted to visit.

7.2 For User Table

Dashboard	User Management				
User Details Project Details Task Details Subtask Details Milestone Details User Projects Project Milestones Top Performers	Actions	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
	Edit Delete	2	Hari	hari@example.com	9851234567
	Edit Delete	3	Gopal	gopal@example.com	9861234567
	Edit Delete	4	Krishna	krishna@example.com	9801234567
	Edit Delete	5	Sita	sita@example.com	9811234567
	Edit Delete	6	Radha	radha@example.com	9843456789
	Edit Delete	7	Ramesh	ramesh@example.com	9854567890
	Edit Delete	8	Bishal	bishal@example.com	9865678901
	Edit Delete	9	Manoj	manoj@example.com	9806789012
	Edit Delete	10	Sujan	sujan@example.com	9817890123
	Edit Delete	11	Sarita	sarita@example.com	9848901234

This is the user table where user id name email contact no. can be added to the table. And simultaneously user can edit update and delete the table as well.

7.2.1 Inserting user in the user table

Add New User

USER_ID	
USER_NAME	
USER_EMAIL	
USER_CONTACT	
Insert Cancel	

User can see this empty field box after inputting the correct details and pressing the insert button their information will be added to the table. If they do not wish to insert simply, they can press the cancel buttons.

7.2.2 Editing and Updating User Information

Actions	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	2	Hari	hari@example.com	9851234567

If the information went wrong user can press the edit button to make corrections.

USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
2	Ram	Hari@gmail.com	98415656768

After correcting the information, they can press the update button and save changes.

7.2.3 Deleting the information

Actions	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	2	Hari	Hari@gmail.com	9841234567

Their information is updated. Also, if the user wants to remove their information from their table they can press the delete button.

User Management

Actions	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	3	Gopal	gopal@example.com	9861234567
Edit Delete	4	Krishna	krishna@example.com	9801234567
Edit Delete	5	Sita	sita@example.com	9811234567
Edit Delete	6	Radha	radha@example.com	9843456789
Edit Delete	7	Ramesh	ramesh@example.com	9854567890
Edit Delete	8	Bishal	bishal@example.com	9865678901
Edit Delete	9	Manoj	manoj@example.com	9806789012
Edit Delete	10	Sujan	sujan@example.com	9817890123
Edit Delete	11	Sarita	sarita@example.com	9848901234
Edit Delete	12	Dipesh	dipesh@example.com	9859012345
Edit Delete	13	Anita	anita@example.com	9860123456
Edit Delete	14	Kumar	kumar@example.com	9801234567
Edit Delete	15	Raj	raj@example.com	9812345678
Edit Delete	16	Sulav	sulav@gmail.com	8123818318312

Their information is removed after pressing the delete button.

7.3 For Project Table

7.3.1 Inserting Project in the Project Table

Add New Project

Project ID	
Project Name	
Start Date	
End Date	
Add Project Cancel	

After filling in the details, press the Insert button to add the project to the table. If you do not want to insert, press the Cancel button.

7.3.2 Editing and Updating Project Information

If the information is incorrect, the user can press the Edit button to make corrections. After correcting the information.

	Project ID	Project Name	Start Date	End Date
Edit Delete	1	S-Commerce Site	01/01/2025	03/31/2025

they can press the Update button to save changes.

	Project ID	Project Name	Start Date	End Date
Update Cancel	1	E-Commerce Site	1/1/2025 12:00:00 AM	3/31/2025 12:00:00 AM

7.3.3 Deleting Project Information

To remove a project's information from the table, press the **Delete** button. The information will be removed from the table.

	Project ID	Project Name	Start Date	End Date
Edit Delete	1	S-Commerce Site	01/01/2025	03/31/2025

7.4 For User-Project Table

7.4.1 Selecting the User

User Projects

User ID	9
Name	Manoj
Email	manoj@example.com
Contact	9806789012

Project ID	Project Name	Start Date	End Date
1	S-Commerce Site	01/01/2025	03/31/2025
4	Learning Portal	04/01/2025	07/31/2025

In order to view the details of the user you need to choose the user from the drop down button.

7.4.2 Details shown of the selected user

User Projects

Manoj ▾

User ID	9
Name	Manoj
Email	manoj@example.com
Contact	9806789012

Project ID	Project Name	Start Date	End Date
1	S-Commerce Site	01/01/2025	03/31/2025
4	Learning Portal	04/01/2025	07/31/2025

Just after selecting the user the user and the project details will be shown .

7.5 For Task Table

7.5.1 Inserting Task in the Task Table

After filling in the details, press the Insert button to add the project to the table. If you do not want to insert, press the Cancel button.

Add New Task

Task ID:

Title:

Status:

Description:

Start Date:

Project ID:

Add Task

7.5.2 Editing and Updating Task Information

If the information is incorrect, the user can press the Edit button to make corrections. After correcting the information

	Task ID	Title	Status	Description	Start Date	Project ID
EditDelete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1

they can press the Update button to save changes.

	Task ID	Title	Status	Description	Start Date	Project ID
UpdateCancel	1	Design	Completed	Design schema for Project A	1/5/2025 12:00:00 AM	1

7.5.3 Deleting Task Information

To remove a task information from the table, press the Delete button. The information will be removed from the table.

Task Management

Actions	Task ID	Title	Status	Description	Start Date	Project ID
EditDelete	1	Database Design	Completed	Design schema for Project A	1/5/2025 12:00:00 AM	1

7.6 For Sub Task Table

7.6.1 Inserting Sub Task in the Sub Task Table

After filling in the details, press the Insert button to add the Sub Task to the table. If you do not want to insert, press the Cancel button.

Add New Subtask

Subtask ID

Subtask Name

Status

Task ID

Add Subtask

Cancel

7.6.2 Editing and Updating Sub Task Information

If the information is incorrect, the user can press the Edit button to make corrections. After correcting the information

Subtask Management

	Subtask ID	Subtask Name	Status	Task ID
EditDelete	1	Wireframe Design	In Progress	1

, they can press the Update button to save changes.

	Subtask ID	Subtask Name	Status	Task ID
UpdateCancel	1	Wireframe Design	In Progress	1

7.6.3 Deleting Sub Task Information

To remove a Sub task information from the table, press the Delete button. The information will be removed from the table.

	Subtask ID	Subtask Name	Status	Task ID
EditDelete	1	Wireframe Design	In Progress	1

7.7 For Milestone Table

7.8 Inserting milestone in the milestone Table

After filling in the details, press the Insert button to add the milestone to the table. If you do not want to insert, press the Cancel button.

Add New Milestone

Milestone ID	
Name	
Due Date	
Project ID	
User ID	
Add MilestoneCancel	

7.9 Editing and Updating milestone Information

If the information is incorrect, the user can press the Edit button to make corrections. After correcting the information

Milestone Management					
	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	3	Phase 3	03/01/2025	2	3

they can press the Update button to save changes.

Milestone Management					
	Milestone ID	Name	Due Date	Project ID	User ID
UpdateCancel	3	Phase 4	3/1/2025 12:00:00 AM	2	3

Milestone Management					
	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	3	Phase 3	03/01/2025	2	3

7.10 Deleting milestone Information

To remove a task information from the table, press the Delete button. The information will be removed from the table.

Milestone Management					
	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	3	Phase 3	03/01/2025	2	3

8 Testing

8.1 User Management

8.1.1 Adding a New User

Add New User

USER_ID	2
USER_NAME	Sujan
USER_EMAIL	sujan12@gmail.com
USER_CONTACT	9811028269
Insert Cancel	

Figure 31 of inserting the information

User Management

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	2	Sujan	sujan12@gmail.com	9811028269

Figure 32 successfully added the information

8.1.2 Editing the user

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Update Cancel	2	Suka	sujan12@gmail.com	9811028269

Figure 33 editing the given information

8.1.3 Updated the user

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	2	Suka	sujan12@gmail.com	9811028269

Figure 34 successfully edited and updated the information

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	2	Sukal	sujan12@gmail.com	9811028269

Figure 35 deleting the information

8.1.4 User Deleted

User Management

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	3	Gopals	gopal@example.com	9861234567
Edit Delete	4	Krishna	krishna@example.com	9801234567
Edit Delete	5	Sita	sita@example.com	9811234567
Edit Delete	6	Radha	radha@example.com	9843456789
Edit Delete	7	Ramesh	ramesh@example.com	9854567890
Edit Delete	8	Bishal	bishal@example.com	9865678901
Edit Delete	9	Manoj	manoj@example.com	9806789012
Edit Delete	10	Sujan	sujan@example.com	9817890123
Edit Delete	11	Sarita	sarita@example.com	9848901234
Edit Delete	12	Dipesh	dipesh@example.com	9859012345
Edit Delete	13	Anita	anita@example.com	9860123456
Edit Delete	14	Kumar	kumar@example.com	9801234567
Edit Delete	15	Raj	raj@example.com	9812345678
Edit Delete	16	Sulav	sulav@gmail.com	8123818318312

Figure 36 successfully deleted from the table

8.2 Task Management

8.2.1 Adding a new task

Add New Task

Task ID:	16
Title:	Designing
Status:	planned
Description:	Collect all requirements 
Start Date:	03/25/2025 
Project ID:	9
Add Task	

Figure 37 of inserting the task table information

Task Management

Actions	Task ID	Title	Status	Description	Start Date	Project ID
Edit Delete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1
Edit Delete	2	UI Design	In Progress	Create wireframes	01/15/2025	1
Edit Delete	3	Backend API	Completed	Setup backend services	01/10/2025	1
Edit Delete	4	Testing	Not Started	Test application modules	02/01/2025	2
Edit Delete	5	Deployment	Planned	Deploy application	02/15/2025	2
Edit Delete	6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3
Edit Delete	7	Code Review	In Progress	Review codebase	01/20/2025	3
Edit Delete	8	Documentation	Not Started	Prepare documentation	02/05/2025	4
Edit Delete	9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4
Edit Delete	10	Code Optimization	Completed	Optimize backend code	01/25/2025	5
Edit Delete	12	Security Testing	Completed	Perform security tests	01/30/2025	7
Edit Delete	13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8
Edit Delete	14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9
Edit Delete	15	User Training	Planned	Train users on new system	03/10/2025	10
Edit Delete	16	Designing	planned	Collect all requirements	03/25/2025	9

Figure 38 successfully added the inputted formation in the task table

8.2.2 Editing the task

Task ID	Title	Status	Description	Start Date	Project ID
1	Database Design	Completed	Design schema for Project A	01/05/2025	1
2	UI Design	In Progress	Create wireframes	01/15/2025	1
3	Backend API	Completed	Setup backend services	01/10/2025	1
4	Testing	Not Started	Test application modules	02/01/2025	2
5	Deployment	Planned	Deploy application	02/15/2025	2
6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3
7	Code Review	In Progress	Review codebase	01/20/2025	3
8	Documentation	Not Started	Prepare documentation	02/05/2025	4
9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4
10	Code Optimization	Completed	Optimize backend code	01/25/2025	5
12	Security Testing	Completed	Perform security tests	01/30/2025	7
13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8
14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9
15	User Training	Planned	Train users on new system	03/10/2025	10
16	Designing	Notstarted	Collect all requirements	3/25/2025 12:00:00 AM	9

Figure 39 edited the information in table

8.2.3 Updated the task

Task Management							
Actions	Task ID	Title	Status	Description	Start Date	Project ID	
Edit Delete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1	
Edit Delete	2	UI Design	In Progress	Create wireframes	01/15/2025	1	
Edit Delete	3	Backend API	Completed	Setup backend services	01/10/2025	1	
Edit Delete	4	Testing	Not Started	Test application modules	02/01/2025	2	
Edit Delete	5	Deployment	Planned	Deploy application	02/15/2025	2	
Edit Delete	6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3	
Edit Delete	7	Code Review	In Progress	Review codebase	01/20/2025	3	
Edit Delete	8	Documentation	Not Started	Prepare documentation	02/05/2025	4	
Edit Delete	9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4	
Edit Delete	10	Code Optimization	Completed	Optimize backend code	01/25/2025	5	
Edit Delete	12	Security Testing	Completed	Perform security tests	01/30/2025	7	
Edit Delete	13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8	
Edit Delete	14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9	
Edit Delete	15	User Training	Planned	Train users on new system	03/10/2025	10	
Edit Delete	16	Designing	Notstarted	Collect all requirements	3/25/2025 12:00:00 AM	9	

Figure 40 successfully updated the information

8.2.4 Deleted the task

Task Management						
Actions	Task ID	Title	Status	Description	Start Date	Project ID
EditDelete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1
EditDelete	2	UI Design	In Progress	Create wireframes	01/15/2025	1
EditDelete	3	Backend API	Completed	Setup backend services	01/10/2025	1
EditDelete	4	Testing	Not Started	Test application modules	02/01/2025	2
EditDelete	5	Deployment	Planned	Deploy application	02/15/2025	2
EditDelete	6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3
EditDelete	7	Code Review	In Progress	Review codebase	01/20/2025	3
EditDelete	8	Documentation	Not Started	Prepare documentation	02/05/2025	4
EditDelete	9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4
EditDelete	10	Code Optimization	Completed	Optimize backend code	01/25/2025	5
EditDelete	12	Security Testing	Completed	Perform security tests	01/30/2025	7
EditDelete	13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8
EditDelete	14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9
EditDelete	15	User Training	Planned	Train users on new system	03/10/2025	10

Figure 41 successfully deleted from the table

8.3 Project management

8.3.1 Adding the project

Add New Project

Project ID	14
Project Name	hello world
Start Date	1/2/3
End Date	2/3/4
Add Project Cancel	

Figure 42 inserting the information of the project table

Project Management

	Project ID	Project Name	Start Date	End Date
Edit Delete	1	S-Commerce Site	01/01/2025	03/31/2025
Edit Delete	2	HR Management	02/01/2025	04/30/2025
Edit Delete	3	Inventory System	03/01/2025	06/30/2025
Edit Delete	4	Learning Portal	04/01/2025	07/31/2025
Edit Delete	5	Mobile App	05/01/2025	08/31/2025
Edit Delete	7	AI Chatbot	07/01/2025	10/31/2025
Edit Delete	8	Data Analytics	08/01/2025	11/30/2025
Edit Delete	9	Travel Planner	09/01/2025	12/31/2025
Edit Delete	10	Hospital System U	10/01/2025	01/31/2026
Edit Delete	11	Online Forum	11/01/2025	02/28/2026
Edit Delete	12	IoT Dashboard	12/01/2025	03/31/2026
Edit Delete	13	Gaming Platform	01/01/2026	04/30/2026
Edit Delete	14	hello world	01/02/2003	02/03/2004

Figure 43 successfully added the information in the table

8.3.2 Editing the project information

Update
Cancel

14

hospital app

1/2/2003 12:00:00 AM

2/3/2004 12:00:00 AM

Figure 44 edited the information

8.3.3 Updated the edited project information

Edit	Delete	14	hospital app	01/02/2003	02/03/2004
----------------------	------------------------	----	--------------	------------	------------

Figure 45 updated the information in the table

Edit	Delete	14	hospital app	01/02/2003	02/03/2004
----------------------	------------------------	----	--------------	------------	------------

Figure 46 deleting the information

8.3.4 Deleted the project information

Project Management

	Project ID	Project Name	Start Date	End Date
Edit Delete	1	S-Commerce Site	01/01/2025	03/31/2025
Edit Delete	2	HR Management	02/01/2025	04/30/2025
Edit Delete	3	Inventory System	03/01/2025	06/30/2025
Edit Delete	4	Learning Portal	04/01/2025	07/31/2025
Edit Delete	5	Mobile App	05/01/2025	08/31/2025
Edit Delete	7	AI Chatbot	07/01/2025	10/31/2025
Edit Delete	8	Data Analytics	08/01/2025	11/30/2025
Edit Delete	9	Travel Planner	09/01/2025	12/31/2025
Edit Delete	10	Hospital System U	10/01/2025	01/31/2026
Edit Delete	11	Online Forum	11/01/2025	02/28/2026
Edit Delete	12	IoT Dashboard	12/01/2025	03/31/2026
Edit Delete	13	Gaming Platform	01/01/2026	04/30/2026

Figure 47 successfully deleted from the table

8.4 Sub-Task Management

8.4.1 Adding the Sub-Task

Add New Subtask

Subtask ID

15

Subtask Name

aid making

Status

Pending

Task ID

3

Add Subtask

Cancel

Figure 48 inserting the information of the subtask table

Subtask Management

Actions		Subtask ID	Subtask Name	Status	Task ID
Edit	Delete	1	Wireframe Design	In Progress	1
Edit	Delete	2	Backend Setup	Completed	1
Edit	Delete	3	Database Schema	In Progress	2
Edit	Delete	4	User Authentication	Pending	2
Edit	Delete	5	Frontend Development	Completed	3
Edit	Delete	6	API Integration	In Progress	3
Edit	Delete	7	Content Writing	Completed	4
Edit	Delete	8	UI/UX Design	In Progress	4
Edit	Delete	9	Testing	Pending	5
Edit	Delete	10	Payment Gateway Integration	In Progress	5
Edit	Delete	11	Data Visualization	Pending	6
Edit	Delete	12	API Development	Completed	6
Edit	Delete	13	Market Research	In Progress	7
Edit	Delete	14	Deployment	Pending	7
Edit	Delete	15	aid making	Pending	3

Figure 49 successfully inserted the information in table

8.4.2 Editing the subtask

Subtask ID	Subtask Name	Status	Task ID
1	Wireframe Design	In Progress	1
2	Backend Setup	Completed	1
3	Database Schema	In Progress	2
4	User Authentication	Pending	2
5	Frontend Development	Completed	3
6	API Integration	In Progress	3
7	Content Writing	Completed	4
8	UI/UX Design	In Progress	4
9	Testing	Pending	5
10	Payment Gateway Integration	In Progress	5
11	Data Visualization	Pending	6
12	API Development	Completed	6
13	Market Research	In Progress	7
14	Deployment	Pending	7
15	Api Creation	Pending	3

Figure 50 edited the information in the table

8.4.3 Updated the edited subtask

Subtask Management					
Actions		Subtask ID	Subtask Name	Status	Task ID
Edit	Delete	1	Wireframe Design	In Progress	1
Edit	Delete	2	Backend Setup	Completed	1
Edit	Delete	3	Database Schema	In Progress	2
Edit	Delete	4	User Authentication	Pending	2
Edit	Delete	5	Frontend Development	Completed	3
Edit	Delete	6	API Integration	In Progress	3
Edit	Delete	7	Content Writing	Completed	4
Edit	Delete	8	UI/UX Design	In Progress	4
Edit	Delete	9	Testing	Pending	5
Edit	Delete	10	Payment Gateway Integration	In Progress	5
Edit	Delete	11	Data Visualization	Pending	6
Edit	Delete	12	API Development	Completed	6
Edit	Delete	13	Market Research	In Progress	7
Edit	Delete	14	Deployment	Pending	7
Edit	Delete	15	Api Creation	Pending	3

Figure 51 updated the information in the table

8.4.4 Deleted the subtask

Actions	Subtask ID	Subtask Name	Status	Task ID
EditDelete	1	Wireframe Design	In Progress	1
EditDelete	2	Backend Setup	Completed	1
EditDelete	3	Database Schema	In Progress	2
EditDelete	4	User Authentication	Pending	2
EditDelete	5	Frontend Development	Completed	3
EditDelete	6	API Integration	In Progress	3
EditDelete	7	Content Writing	Completed	4
EditDelete	8	UI/UX Design	In Progress	4
EditDelete	9	Testing	Pending	5
EditDelete	10	Payment Gateway Integration	In Progress	5
EditDelete	11	Data Visualization	Pending	6
EditDelete	12	API Development	Completed	6
EditDelete	13	Market Research	In Progress	7
EditDelete	14	Deployment	Pending	7

Figure 52 deleted the information from the table

8.5 Milestone Management

8.5.1 Adding Milestone

Add New Milestone

Milestone ID	1
Name	Project Demo
Due Date	4/12/3
Project ID	5
User ID	1
Add MilestoneCancel	

Figure 53 Adding milestone in the table

Milestone Management

	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	1	project demo	04/12/2003	5	8

Figure 54 Successfully inserted the information in table

8.5.2 Editing Milestone

	Milestone ID	Name	Due Date	Project ID	User ID
UpdateCancel	1	App Demo	4/12/2003 12:00:00 AM	5	8

Figure 55 editing the information of the table

8.5.3 Updating Milestone

Milestone Management

	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	1	project demo	04/12/2003	5	8

Figure 56 successfully edited and updated the information

8.5.4 Deleting Milestone

Milestone Management

	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	3	Phase 3	03/01/2025	2	3
EditDelete	4	Completion	03/31/2025	2	4
EditDelete	5	Review	04/15/2025	3	5
EditDelete	6	Kickoff	01/05/2025	3	6
EditDelete	7	Prototype	02/10/2025	4	7
EditDelete	10	Production	05/15/2025	7	10
EditDelete	14	Final Demo	07/15/2025	11	14

Figure 57 Successfully deleted from the milestone table

8.6 Project Milestone

8.6.1 Selecting Project

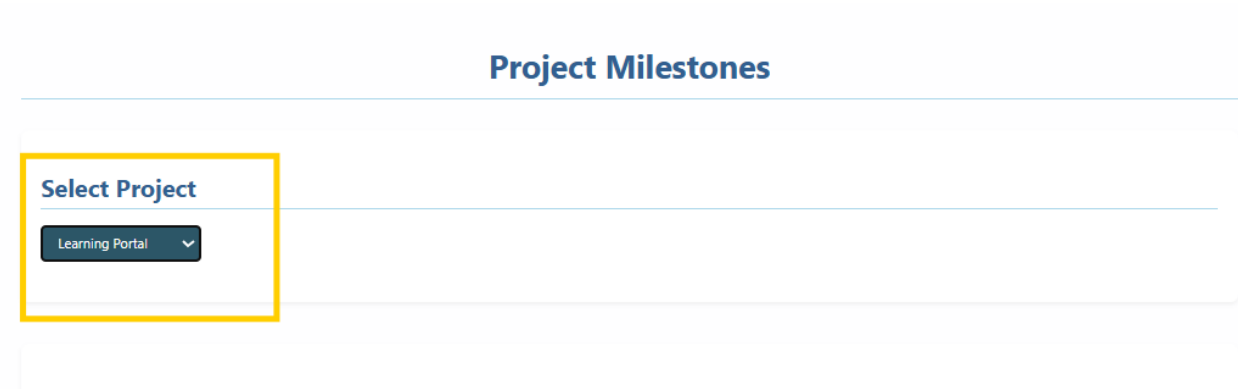


Figure 58 selecting the project

8.6.2 Details of the selected project

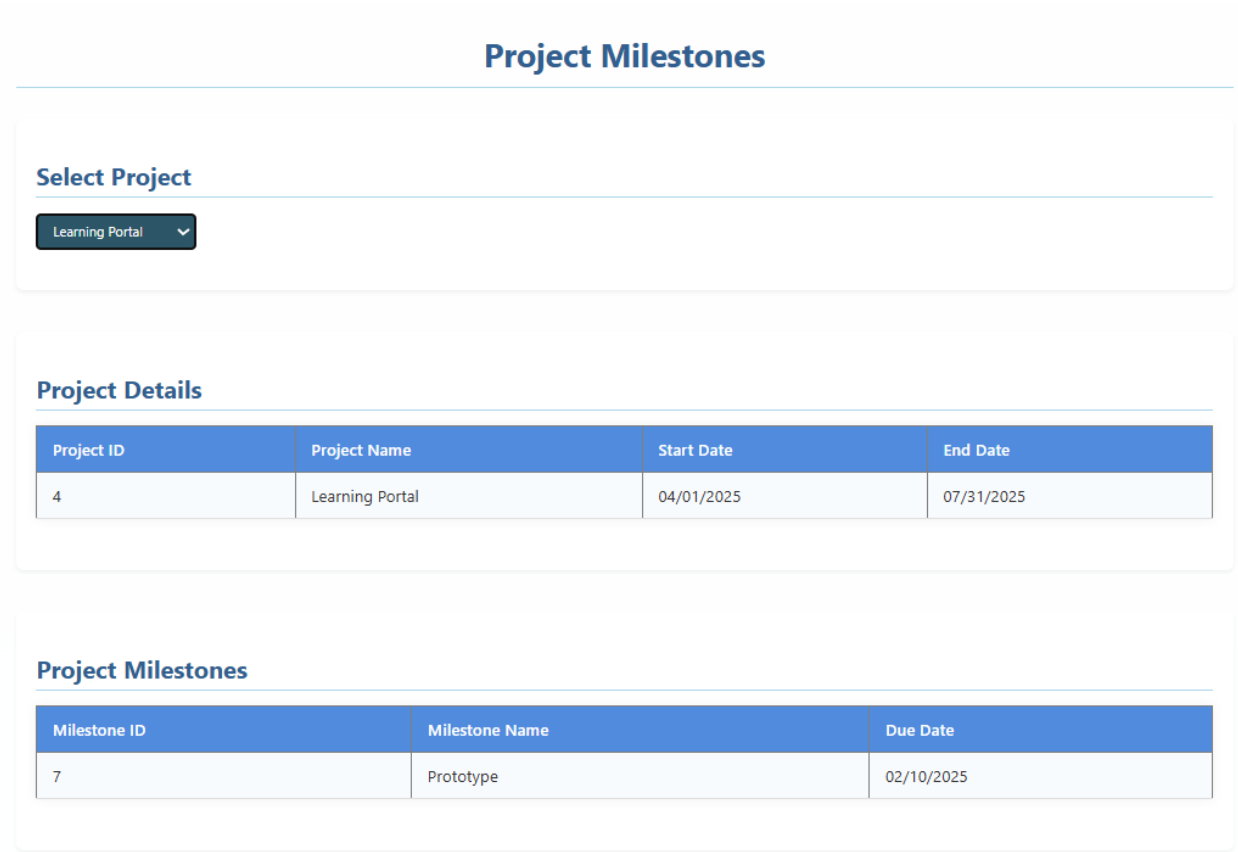


Figure 59 Details of the selected project

8.7 Top-Performer

8.7.1 Selecting the project

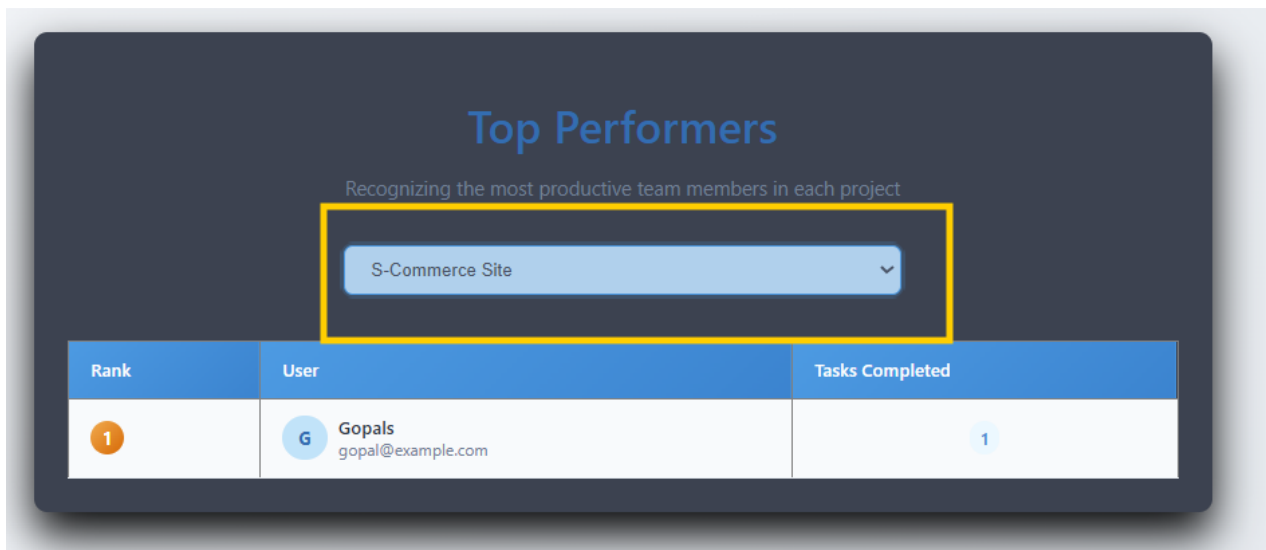


Figure 60 project selected to see the top performer

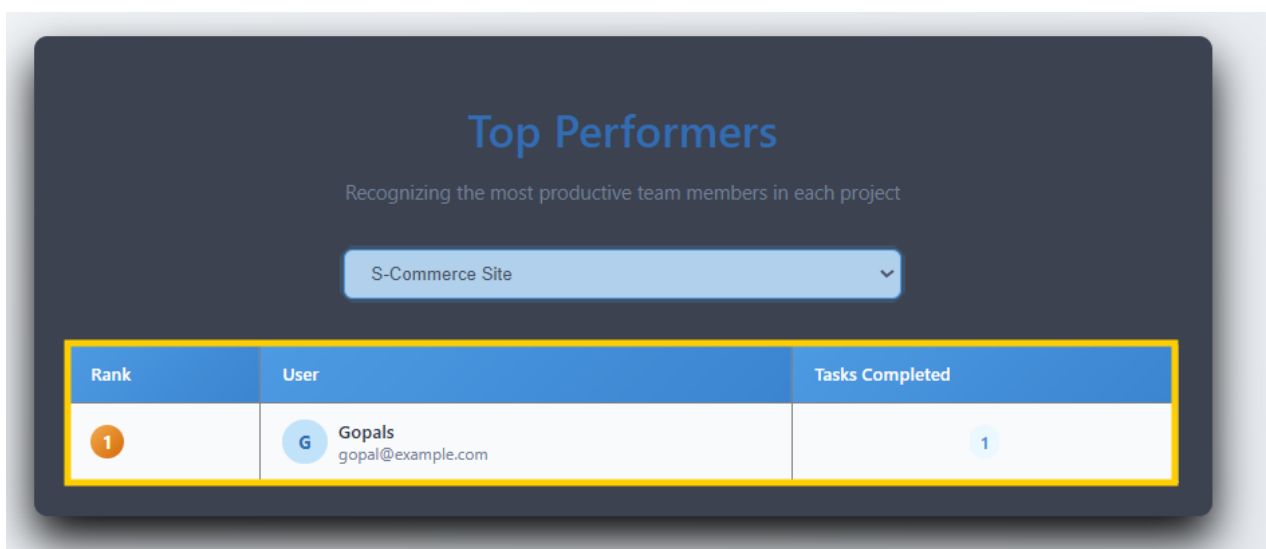


Figure 61 top performer displayed for the selected project

9 Test

9.1 Test Case 1 for user table

Action	Result
Objective	Implement CRUD functionality for the User table.
Steps	Enter details in the user form, modify existing data, and remove data from the table.
Expected Outcome	All functionalities should operate correctly.
Actual Outcome	CRUD functionality is successfully implemented.

Table 1 of test case 1

Figure 62: Inserting sujan user

User Management				
	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
<button>Edit</button> <button>Delete</button>	2	Sujan	sujan12@gmail.com	9811028269

Figure 63: Sujan User Inserted Successfully

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
<button>Update</button> <button>Cancel</button>	2	Suka	sujan12@gmail.com	9811028269

Figure 64: editing name

	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	2	Sukal	sujan12@gmail.com	9811028269

Figure 65: Name Updated Successfully

User Management				
	USER_ID	USER_NAME	USER_EMAIL	USER_CONTACT
Edit Delete	3	Gopals	gopal@example.com	9861234567
Edit Delete	4	Krishna	krishna@example.com	9801234567
Edit Delete	5	Sita	sita@example.com	9811234567
Edit Delete	6	Radha	radha@example.com	9843456789
Edit Delete	7	Ramesh	ramesh@example.com	9854567890
Edit Delete	8	Bishal	bishal@example.com	9865678901
Edit Delete	9	Manoj	manoj@example.com	9806789012
Edit Delete	10	Sujan	sujan@example.com	9817890123
Edit Delete	11	Sarita	sarita@example.com	9848901234
Edit Delete	12	Dipesh	dipesh@example.com	9859012345
Edit Delete	13	Anita	anita@example.com	9860123456
Edit Delete	14	Kumar	kumar@example.com	9801234567
Edit Delete	15	Raj	raj@example.com	9812345678
Edit Delete	16	Sulav	sulav@gmail.com	8123818318312

Figure 66: User 17 Deleted Successfully

9.2 Test Case 2 for project table

Action	Result
Objective	CRUD functionality of Project table.
Steps	Create: Inserting a new project Update: Updating the name of project Delete: Deleting project
Expected Outcome	All the functionalities should work.
Actual Outcome	CRUD functionality is successful.

Table 2 of test case 2

Add New Project

Project ID	14
Project Name	hello world
Start Date	1/2/3
End Date	2/3/4
Add Project Cancel	

Figure 67: Inserting new project

Project Management

	Project ID	Project Name	Start Date	End Date
Edit Delete	1	S-Commerce Site	01/01/2025	03/31/2025
Edit Delete	2	HR Management	02/01/2025	04/30/2025
Edit Delete	3	Inventory System	03/01/2025	06/30/2025
Edit Delete	4	Learning Portal	04/01/2025	07/31/2025
Edit Delete	5	Mobile App	05/01/2025	08/31/2025
Edit Delete	7	AI Chatbot	07/01/2025	10/31/2025
Edit Delete	8	Data Analytics	08/01/2025	11/30/2025
Edit Delete	9	Travel Planner	09/01/2025	12/31/2025
Edit Delete	10	Hospital System U	10/01/2025	01/31/2026
Edit Delete	11	Online Forum	11/01/2025	02/28/2026
Edit Delete	12	IoT Dashboard	12/01/2025	03/31/2026
Edit Delete	13	Gaming Platform	01/01/2026	04/30/2026
Edit Delete	14	hello world	01/02/2003	02/03/2004

Figure 54: Project Inserted Successfully

Update	14	hospital app	1/2/2003 12:00:00 AM	2/3/2004 12:00:00 AM
Cancel				

Figure 55: Updating project

Edit Delete	14	hospital app	01/02/2003	02/03/2004
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Figure 56: Project 10 Updated Successfully

Project Management

	Project ID	Project Name	Start Date	End Date
EditDelete	1	S-Commerce Site	01/01/2025	03/31/2025
EditDelete	2	HR Management	02/01/2025	04/30/2025
EditDelete	3	Inventory System	03/01/2025	06/30/2025
EditDelete	4	Learning Portal	04/01/2025	07/31/2025
EditDelete	5	Mobile App	05/01/2025	08/31/2025
EditDelete	7	AI Chatbot	07/01/2025	10/31/2025
EditDelete	8	Data Analytics	08/01/2025	11/30/2025
EditDelete	9	Travel Planner	09/01/2025	12/31/2025
EditDelete	10	Hospital System U	10/01/2025	01/31/2026
EditDelete	11	Online Forum	11/01/2025	02/28/2026
EditDelete	12	IoT Dashboard	12/01/2025	03/31/2026
EditDelete	13	Gaming Platform	01/01/2026	04/30/2026

Figure 57: Project Deleted Successfully

9.3 Test Case 3 for task table

Action	Result
Objective	Implement CRUD functionality for the Task table.
Steps	Enter details in the Task form, modify existing data, and remove data from the table.
Expected Outcome	All functionalities should operate correctly.
Actual Outcome	CRUD functionality is successfully implemented.

Table 3 of test case 3

Add New Task

Task ID:

16

Title:

Designing

Status:

planned

Description:

Collect all requirements

Start Date:

03/25/2025

Project ID:

9

Add Task

Figure 68 adding a task

Task Management

Actions	Task ID	Title	Status	Description	Start Date	Project ID
EditDelete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1
EditDelete	2	UI Design	In Progress	Create wireframes	01/15/2025	1
EditDelete	3	Backend API	Completed	Setup backend services	01/10/2025	1
EditDelete	4	Testing	Not Started	Test application modules	02/01/2025	2
EditDelete	5	Deployment	Planned	Deploy application	02/15/2025	2
EditDelete	6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3
EditDelete	7	Code Review	In Progress	Review codebase	01/20/2025	3
EditDelete	8	Documentation	Not Started	Prepare documentation	02/05/2025	4
EditDelete	9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4
EditDelete	10	Code Optimization	Completed	Optimize backend code	01/25/2025	5
EditDelete	12	Security Testing	Completed	Perform security tests	01/30/2025	7
EditDelete	13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8
EditDelete	14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9
EditDelete	15	User Training	Planned	Train users on new system	03/10/2025	10
EditDelete	16	Designing	planned	Collect all requirements	03/25/2025	9

Figure 69 successfully added a task in the table

Task ID	Title	Status	Description	Start Date	Project ID
1	Database Design	Completed	Design schema for Project A	01/05/2025	1
2	UI Design	In Progress	Create wireframes	01/15/2025	1
3	Backend API	Completed	Setup backend services	01/10/2025	1
4	Testing	Not Started	Test application modules	02/01/2025	2
5	Deployment	Planned	Deploy application	02/15/2025	2
6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3
7	Code Review	In Progress	Review codebase	01/20/2025	3
8	Documentation	Not Started	Prepare documentation	02/05/2025	4
9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4
10	Code Optimization	Completed	Optimize backend code	01/25/2025	5
12	Security Testing	Completed	Perform security tests	01/30/2025	7
13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8
14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9
15	User Training	Planned	Train users on new system	03/10/2025	10
16	Designing	Notstarted	Collect all requirements	3/25/2025 12:00:00 AM	9

Figure 70 editing the task

Task Management							
Actions	Task ID	Title	Status	Description	Start Date	Project ID	
Edit Delete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1	
Edit Delete	2	UI Design	In Progress	Create wireframes	01/15/2025	1	
Edit Delete	3	Backend API	Completed	Setup backend services	01/10/2025	1	
Edit Delete	4	Testing	Not Started	Test application modules	02/01/2025	2	
Edit Delete	5	Deployment	Planned	Deploy application	02/15/2025	2	
Edit Delete	6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3	
Edit Delete	7	Code Review	In Progress	Review codebase	01/20/2025	3	
Edit Delete	8	Documentation	Not Started	Prepare documentation	02/05/2025	4	
Edit Delete	9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4	
Edit Delete	10	Code Optimization	Completed	Optimize backend code	01/25/2025	5	
Edit Delete	12	Security Testing	Completed	Perform security tests	01/30/2025	7	
Edit Delete	13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8	
Edit Delete	14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9	
Edit Delete	15	User Training	Planned	Train users on new system	03/10/2025	10	
Edit Delete	16	Designing	Notstarted	Collect all requirements	3/25/2025 12:00:00 AM	9	

Figure 71 successfully updated the task

Task Management

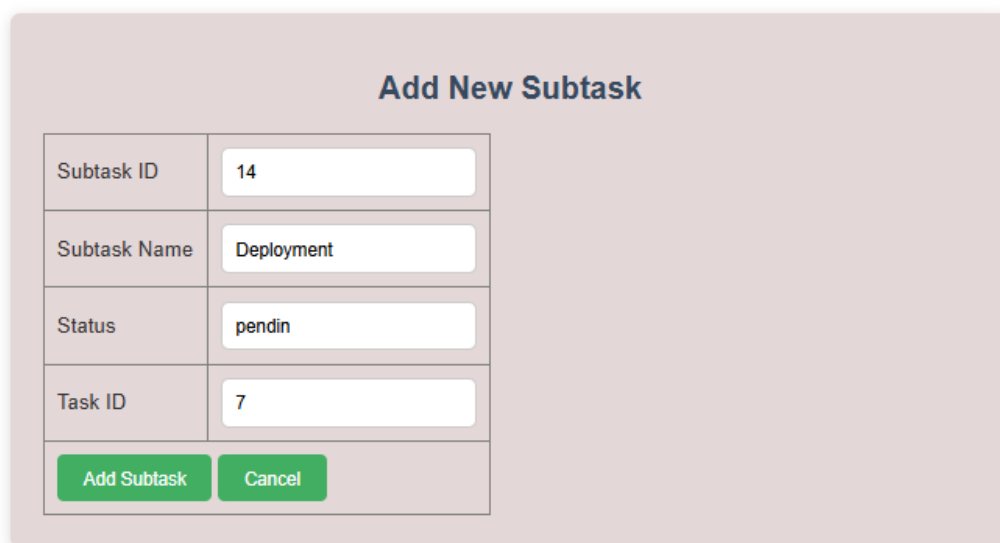
Actions	Task ID	Title	Status	Description	Start Date	Project ID
EditDelete	1	Database Design	Completed	Design schema for Project A	01/05/2025	1
EditDelete	2	UI Design	In Progress	Create wireframes	01/15/2025	1
EditDelete	3	Backend API	Completed	Setup backend services	01/10/2025	1
EditDelete	4	Testing	Not Started	Test application modules	02/01/2025	2
EditDelete	5	Deployment	Planned	Deploy application	02/15/2025	2
EditDelete	6	Requirement Gathering	Completed	Collect all requirements	01/03/2025	3
EditDelete	7	Code Review	In Progress	Review codebase	01/20/2025	3
EditDelete	8	Documentation	Not Started	Prepare documentation	02/05/2025	4
EditDelete	9	Bug Fixing	In Progress	Fix known issues	02/10/2025	4
EditDelete	10	Code Optimization	Completed	Optimize backend code	01/25/2025	5
EditDelete	12	Security Testing	Completed	Perform security tests	01/30/2025	7
EditDelete	13	Final Presentation	Planned	Present project to stakeholders	02/25/2025	8
EditDelete	14	Data Migration	Not Started	Migrate data to new system	03/01/2025	9
EditDelete	15	User Training	Planned	Train users on new system	03/10/2025	10

Figure 72 successfully deleted the task

9.4 Test 4 for subtask table

Action	Result
Objective	implement CRUD functionality for the Subtask table.
Steps	Enter details in the Subtask form, modify existing data, and remove data from the table.
Expected Outcome	All functionalities should operate correctly.
Actual Outcome	CRUD functionality is successfully implemented.

Table 4 of test case 4



Add New Subtask

Subtask ID	14
Subtask Name	Deployment
Status	pendin
Task ID	7
<button>Add Subtask</button> <button>Cancel</button>	

Figure 73 adding a new subtask

	Subtask ID	Subtask Name	Status	Task ID
EditDelete	1	Wireframe Design	In Progress	1
EditDelete	2	Backend Setup	Completed	1
EditDelete	3	Database Schema	In Progress	2
EditDelete	4	User Authentication	Pending	2
EditDelete	5	Frontend Development	Completed	3
EditDelete	6	API Integration	In Progress	3
EditDelete	7	Content Writing	Completed	4
EditDelete	8	UI/UX Design	In Progress	4
EditDelete	9	Testing	Pending	5
EditDelete	10	Payment Gateway Integration	In Progress	5
EditDelete	11	Data Visualization	Pending	6
EditDelete	12	API Development	Completed	6
EditDelete	13	Market Research	In Progress	7
EditDelete	14	Deployment	Pending	7

Figure 74 successfully added the subtask

UpdateCancel	14	Edit	Pending	7
-------------------------	----	-----------------	--------------------	---

Figure 75 successfully edited the sub task

EditDelete	14	Edit	Pending	7
-----------------------	----	------	---------	---

Figure 76 successfully edited and updated the information

Subtask Management

	Subtask ID	Subtask Name	Status	Task ID
EditDelete	1	Wireframe Design	In Progress	1
EditDelete	2	Backend Setup	Completed	1
EditDelete	3	Database Schema	In Progress	2
EditDelete	4	User Authentication	Pending	2
EditDelete	5	Frontend Development	Completed	3
EditDelete	6	API Integration	In Progress	3
EditDelete	7	Content Writing	Completed	4
EditDelete	8	UI/UX Design	In Progress	4
EditDelete	9	Testing	Pending	5
EditDelete	10	Payment Gateway Integration	In Progress	5
EditDelete	11	Data Visualization	Pending	6
EditDelete	12	API Development	Completed	6
EditDelete	13	Market Research	In Progress	7

Figure 77 successfully deleted information from the table

9.5 Test Case 5 for milestone

Action	Result
Objective	Implement CRUD functionality for the Milestone table.
Steps	Enter details in the Milestone form, modify existing data, and remove data from the table.
Expected Outcome	All functionalities should operate correctly.
Actual Outcome	CRUD functionality is successfully implemented.

Table 5 of test case 5

Add New Milestone

Milestone ID

1

Name

Project Demo

Due Date

4/12/3

Project ID

5

User ID

1

Add Milestone

Cancel

Figure 78 adding a new milestone

Milestone Management

	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	1	project demo	04/12/2003	5	8

Figure 79 successfully added the milestone in the table

Update

Cancel

Milestone ID

1

Name

App Demo

Due Date

4/12/2003 12:00:00 AM

Project ID

5

User ID

8

Figure 80 editing the milestone name

Milestone Management

	Milestone ID	Name	Due Date	Project ID	User ID
EditDelete	1	project demo	04/12/2003	5	8

Figure 81 update the milestone name

Milestone Management						
	Milestone ID	Name	Due Date	Project ID	User ID	
EditDelete	3	Phase 3	03/01/2025	2	3	
EditDelete	4	Completion	03/31/2025	2	4	
EditDelete	5	Review	04/15/2025	3	5	
EditDelete	6	Kickoff	01/05/2025	3	6	
EditDelete	7	Prototype	02/10/2025	4	7	
EditDelete	10	Production	05/15/2025	7	10	
EditDelete	14	Final Demo	07/15/2025	11	14	

Figure 82 successfully deleted the milestone from the table

9.6 Test Case 6 for project Milestone

Action	Result
Objective	implement CRUD functionality for the Project Milestone table.
Steps	Select the project that you wanted to see the details
Expected Outcome	Selected Project details of the project should be visible
Actual Outcome	Selected Project details of the project is visible

Table 6 of test case 6

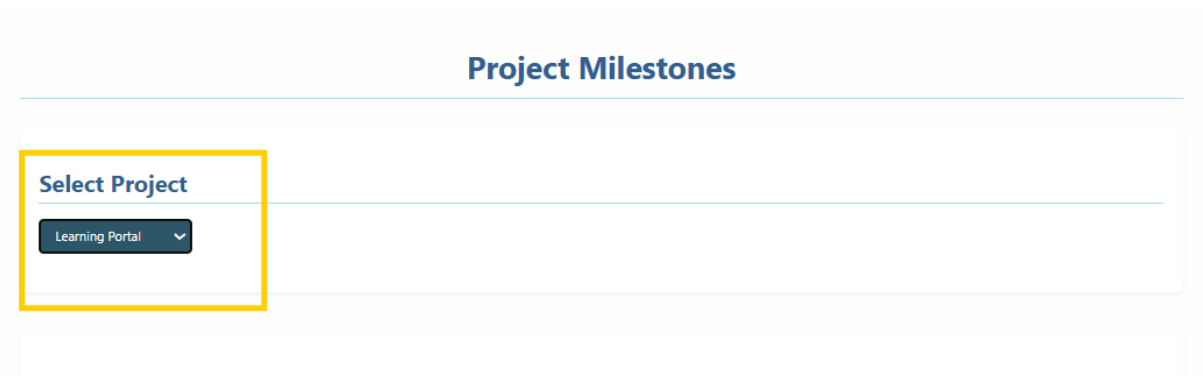


Figure 83 selecting the project

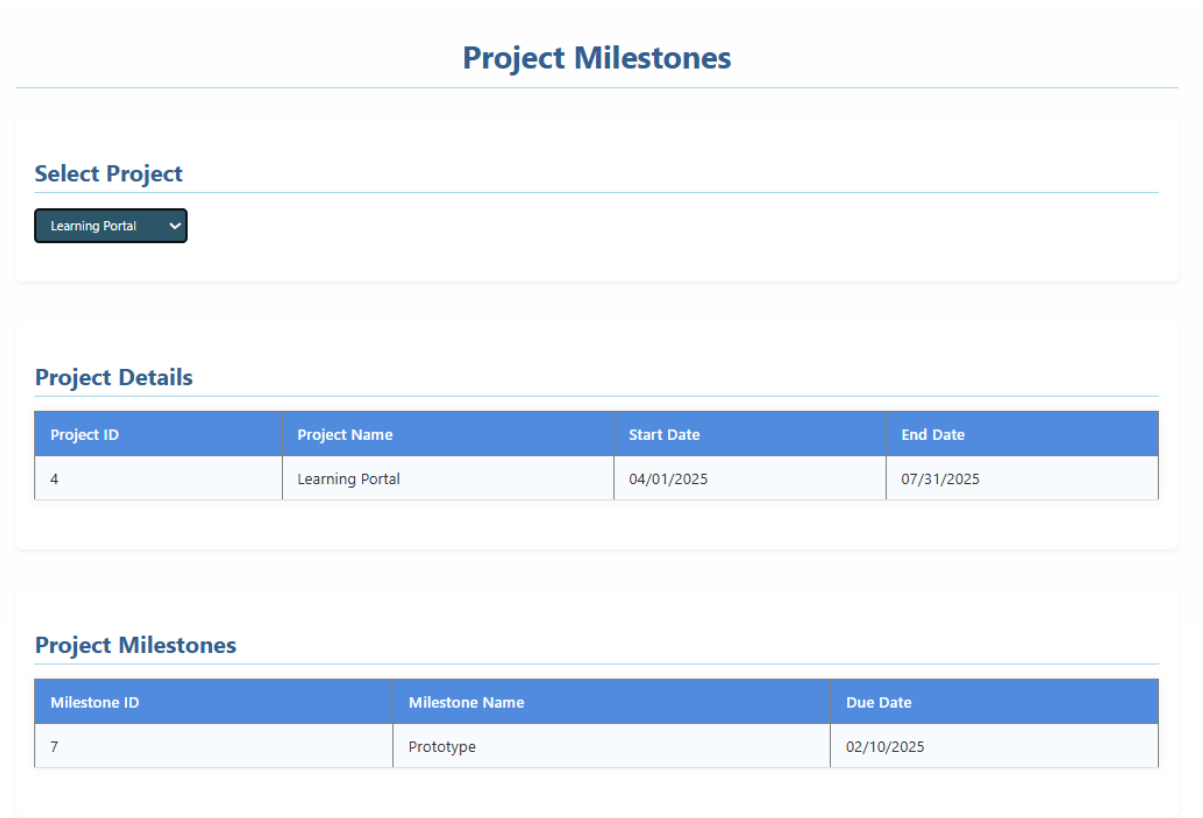


Figure 84 details shown of the selected project

9.7 Test Case 7 for user-project table

Action	Result
Objective	Implement CRUD functionality for the user- project table.
Steps	Select the user that you wanted to see the details
Expected Outcome	Selected user details will be shown
Actual Outcome	Selected user details are shown

Table 7 of test case 7

The screenshot shows a web interface titled "User Projects". On the left, there is a dropdown menu with "Manoj" selected, highlighted by a yellow box. To the right of the dropdown is a table displaying user details for the selected user:

User ID	9
Name	Manoj
Email	manoj@example.com
Contact	9806789012

Below the user details table is a table of projects:

Project ID	Project Name	Start Date	End Date
1	S-Commerce Site	01/01/2025	03/31/2025
4	Learning Portal	04/01/2025	07/31/2025

Figure 85 selected user details are shown

9.8 Test case 8 for top-performer

Action	Result
Objective	Implement CRUD functionality for the top-performer table.
Steps	Select the project that you wanted to see the best performer
Expected Outcome	Selected user details will be shown
Actual Outcome	Selected user details are shown

Table 8 of top performer

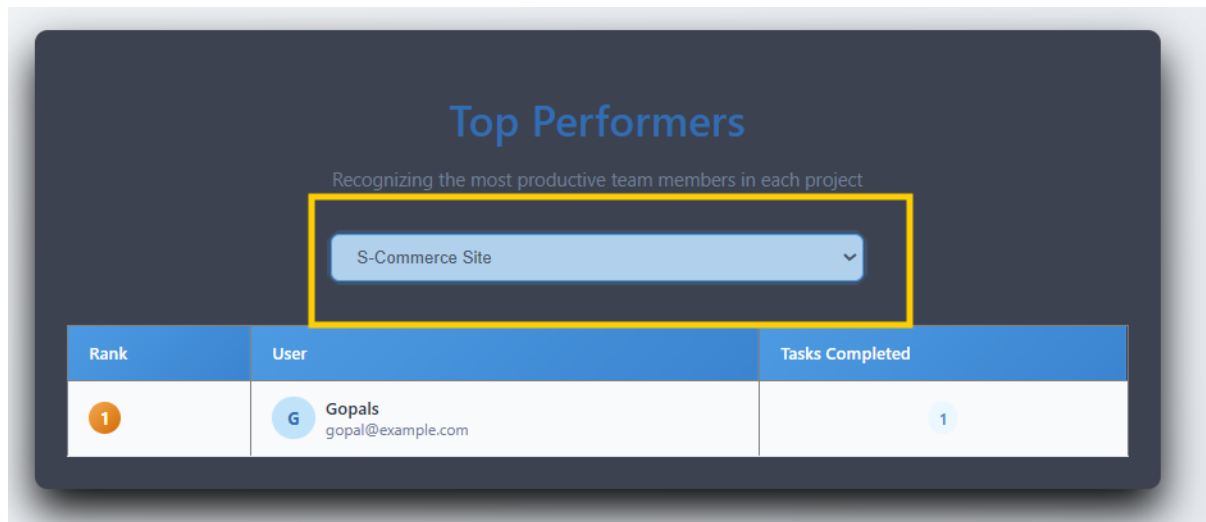


Figure 86 selected project top performer is shown

10 Further Discussion

This coursework taught me how to design a database and build a web application using ASP.NET with C#. I started by normalizing the database to remove redundancy, then created an ERD using Oracle SQL Developer Data Modeler and converted it into tables. I practiced writing SQL queries to insert, update, and manage data efficiently.

For the web application, I used Visual Studio 2022 to develop interactive forms with GridView and DetailsView controls, allowing users to perform CRUD operations. The most interesting part was implementing features like user-project tracking and top performer filtering, which helped me understand dynamic data handling.

Overall, this project improved my skills in database design and web development, giving me real-world experience in building functional software.

11 Conclusion

This project helped me learn database design and web development. I faced challenges with time management and complex concepts, but with the support of my teacher, Mr. Sagar Basnet, and my friends, I completed it successfully.

I improved my skills in Oracle SQL, ASP.NET, and database normalization and gained valuable experience for future projects.

12 References

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