

CC6012NP



Module Code & Module Title

CC6012NP Data and Web Development

Assessment Type

Milestone 4

Semester-

2024/25 Autumn

Student Name: Achyut Tamang

London Met ID: 22068943

College ID: NP04CP4A220011

Assignment Due Date: Thursday, December 19, 2024

Assignment Submission Date: Friday, March 16, 2025

Submitted To:

Ms. Pratibha Gurung

Declaration

I confirm that I understand my coursework needs to be submitted online via My second teacher under the relevant module page before the deadline for my assignment to be accepted and marked. I am fully aware that late submission will be treated as non-submission and a mark of zero will be awarded

Table of Contents:

1. Introduction:	1
2. Initial ERD:.....	2
3. Normalization:.....	3
4. Database Implementation:	6
4.1 Granting user and creating tables:	6
4.2 Data Insertion:.....	12
5. Final ERD:	14
6. Data Dictionary:	15
7. Basic Webforms:.....	19
8. CRUD of basic form:	22
9. Complex Webform:	27
10. CRUD of advance webform:	Error! Bookmark not defined.

Table of Figures:

Figure 1: Initial ERD	2
Figure 2: Unnormalized Table	3
Figure 3: Creating new user	6
Figure 4: Grant All Privileges.....	7
Figure 5: Connecting to Database.....	7
Figure 6: Creating Table for roles.....	8
Figure 7: Creating Tables for Users	8
Figure 8: Creating Table for projects	9
Figure 9: Creating Tables for Milestones.....	9
Figure 10: Creating Tables for Tasks	10
Figure 11: Creating tables for Subtask	10
Figure 12: Creating Table for resources	11
Figure 13: Creating Tables for comments	11
Figure 14: Inserting Values in roles table	12
Figure 15: Inserting Values in users table	12
Figure 16: Inserting values in Project table.....	12
Figure 17: Inserting values in milestone table	12
Figure 18: Inserting values in task table	13
Figure 19: Inserting Values in Subtask table	13
Figure 20: Inserting values into resource table.....	13
Figure 21: Inserting values in comments tables	13
Figure 22: Final ERD	14
Figure 23: Data Dictionary of Users table.....	15
Figure 24: Data Dictionary of Project table.....	15
Figure 25: Data Dictionary of roles	16
Figure 26: Data Dictionary for tasks	16
Figure 27: Data Dictionary of Subtask table	17
Figure 28: Data Dictionary of Milestone	17
Figure 29: Data Dictionary of comments	18
Figure 30: Data Dictionary for resources	18
Figure 31: Home Page	19
Figure 32: user details	19
Figure 33: Project Details	20
Figure 34: Task Details.....	20
Figure 35: Sub-Task Details	21
Figure 36: Milestone details.....	21
Figure 37: CRUD for User Details	22
Figure 38: CRUD Project Details	23
Figure 39: CRUD Task Details	24
Figure 40: CRUD of Sub Task.....	25

1. Introduction:

The coursework assignment is an individual project that accounts for 40% of the module's overall grade. Its primary purpose is to evaluate students' practical problemsolving abilities and their skills in critical thinking and evaluation when designing and developing database systems. For this assignment, I was required to analyze, design, and implement a web-based database application tailored to a specific business case study. The task involved not only creating a functional software solution but also preparing detailed documentation that explained the design and implementation process of the system. This approach ensured a comprehensive understanding of both the technical and theoretical aspects of database development.

LS Corporation, a mid-sized technology firm, struggled with managing multiple projects due to fragmented systems, leading to inefficiencies, poor communication, and difficulty tracking progress. To address these issues, the company decided to implement a robust project management system to centralize data, streamline task assignments, and improve project visibility.

2. Initial ERD:

An Entity Relationship Diagram (ERD) is a visual representation of the relationships between entities within a database. It serves as a crucial tool in database design, helping to illustrate how different data elements interact with one another.

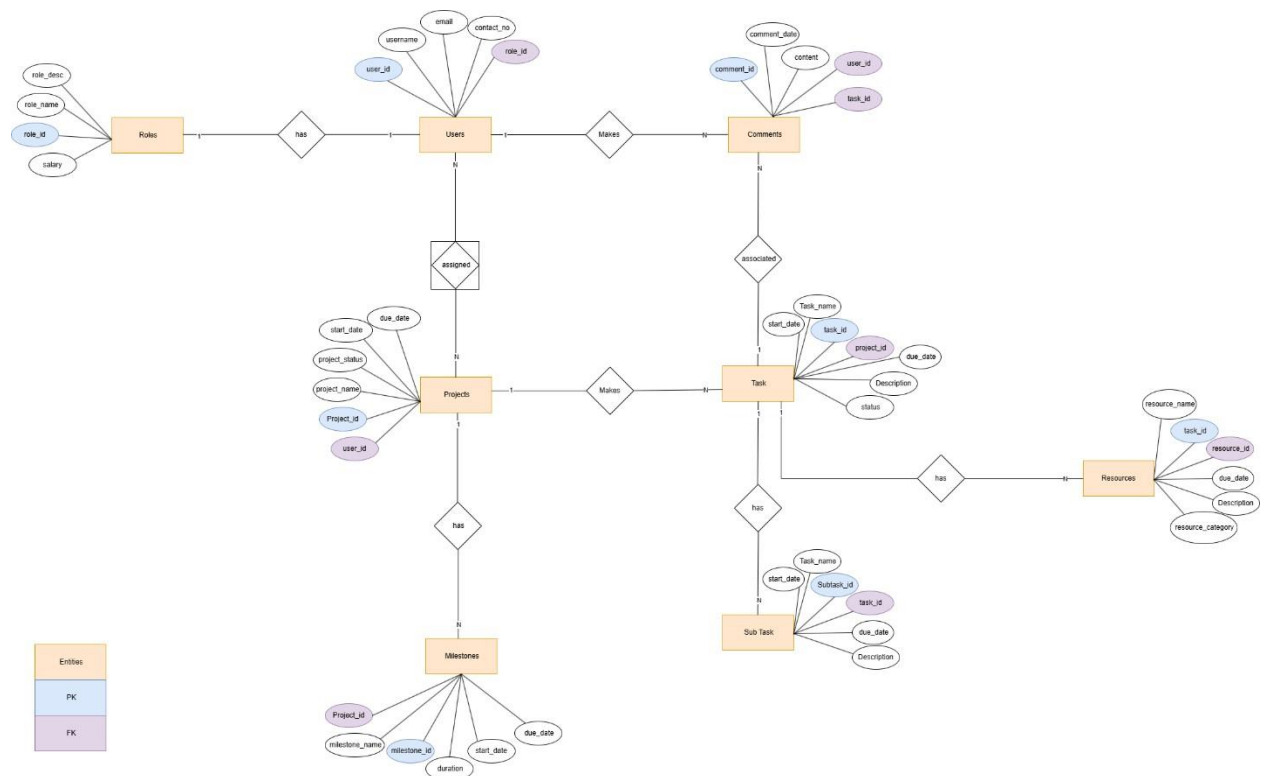


Figure 1: Initial ERD

3. Normalization:

Normalization is the process of organizing data in a database to minimize redundancy and eliminate undesirable characteristics such as insertion, update, and deletion anomalies. It involves dividing larger tables into smaller ones and linking them using relationships. The goal of normalization is to reduce redundancy and ensure a more efficient and consistent database structure by applying normal forms to the tables.

User ID: U-01
User Name: Sam Smith
User Email: Smith@gmail.com
User contact: +9779859697989

Project ID	Project Name	Project Start Date	Project Due Date	Project Status	Task ID	Task Name	Start Date	Due Date	Status
P-01	Enrolment System	2024-01-01	2024-10-23	On going	T-01	Student Registration	2024-01-01	2024-02-20	Completed
P-01	Enrolment System	2024-01-01	2024-10-23	On going	T-02	Student Counselling Form	2024-01-05	2024-06-15	On going
P-02	Attendance System	2024-03-01	2024-12-12	On going	T-03	Biometric Registration	2024-03-10	2024-03-20	Completed

Figure 2: Unnormalized Table

I will be performing normalization on the given unnormalized table by following these steps:

UNF

Unnormalized form (UNF or ONF), also known as an unnormalized relation or nonfirst normal form (N1NF or NF2), is a database data model (organization of

data in a database) which does not meet any of the conditions of database normalization defined by the relational model.

Users (user_id, user_name, user_email, user_contact, role_id, role_name, role_desc, role_salary, {project_id, project_name, project_start_date, project_due_date, project_status}, {task_id, task_name, task_status, task_start_date, task_due_date} })

1NF

- Users1 (user_id, user_name, user_email, user_contact, role_id, role_name, role_desc, role_salary)
- Projects1 (user_id*, project_id, project_name, project_start_date, project_due_date, project_status)
- Tasks1 (project_id*, task_id, task_name, task_status, task_start_date, task_due_date)

2NF:

Partial dependency:

Project_id -> project_name, project_start_date, project_due_date, project_status
Task_id -> task_name, task_start_date, task_due_date, task_status

The second normalized form for the system is given below:

- Users2 (user_id, user_name, user_email, user_contact, role_id, role_name, role_desc, role_salary)
- User_project2 (user_id*, project_id*)
- Projects2 (project_id, project_name, project_start_date, project_due_date, project_status)

- Project_task2 (project_id*, task_id*)
- Tasks2 (task_id, task_name, task_start_date, task_due_date, task_status)

3NF:**Transitive Dependency:**

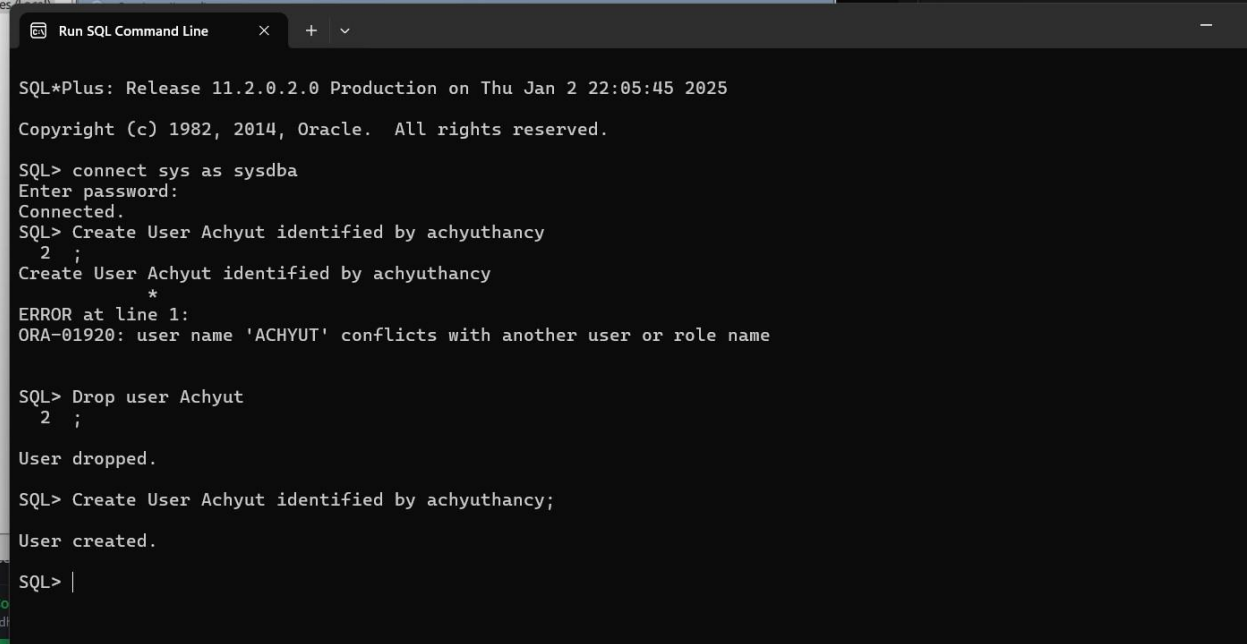
user_id -> role_id -> role_name, role_desc, role_salary

The third normalized form for the system is given below:

- Users3 (user_id, user_name, user_email, user_contact, role_id*)
- Roles3(role_id, role_name, role_desc, role_salary)
- User_project(user_id*, project_id*)
- Projects2 (project_id, project_name, project_start_date, project_due_date, project_status)
- Project_task3(project_id*, task_id*)
- Tasks2 (task_id, task_name, task_status, task_start_date, task_due_date)

4. Database Implementation:

4.1 Granting user and creating tables:



```
Run SQL Command Line
SQL*Plus: Release 11.2.0.2.0 Production on Thu Jan 2 22:05:45 2025
Copyright (c) 1982, 2014, Oracle. All rights reserved.

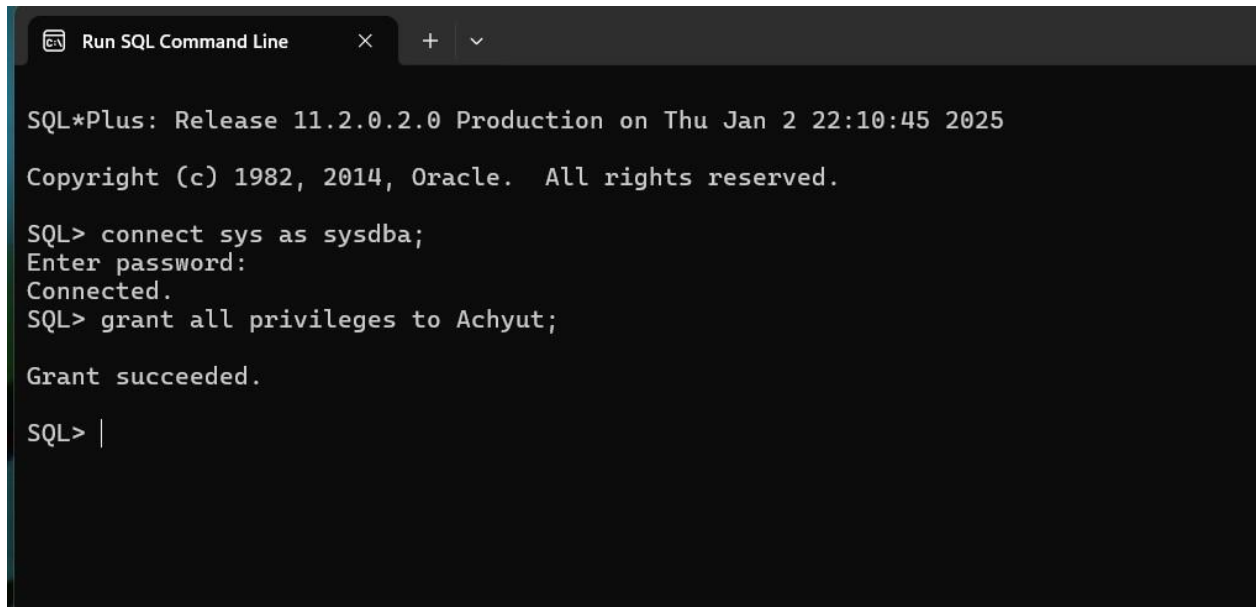
SQL> connect sys as sysdba
Enter password:
Connected.
SQL> Create User Achyut identified by achyuthancy
2 ;
Create User Achyut identified by achyuthancy
*
ERROR at line 1:
ORA-01920: user name 'ACHYUT' conflicts with another user or role name

SQL> Drop user Achyut
2 ;
User dropped.

SQL> Create User Achyut identified by achyuthancy;
User created.

SQL> |
```

Figure 3: Creating new user



```
Run SQL Command Line

SQL*Plus: Release 11.2.0.2.0 Production on Thu Jan 2 22:10:45 2025

Copyright (c) 1982, 2014, Oracle. All rights reserved.

SQL> connect sys as sysdba;
Enter password:
Connected.
SQL> grant all privileges to Achyut;

Grant succeeded.

SQL> |
```

Figure 4: Grant All Privileges

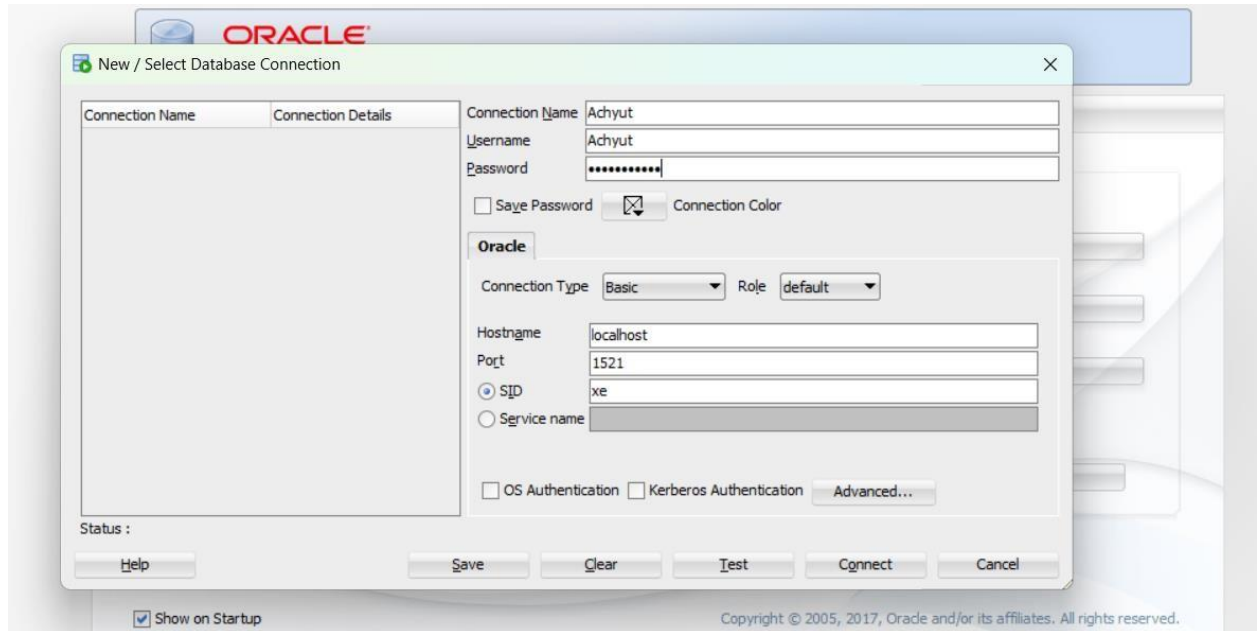


Figure 5: Connecting to Database

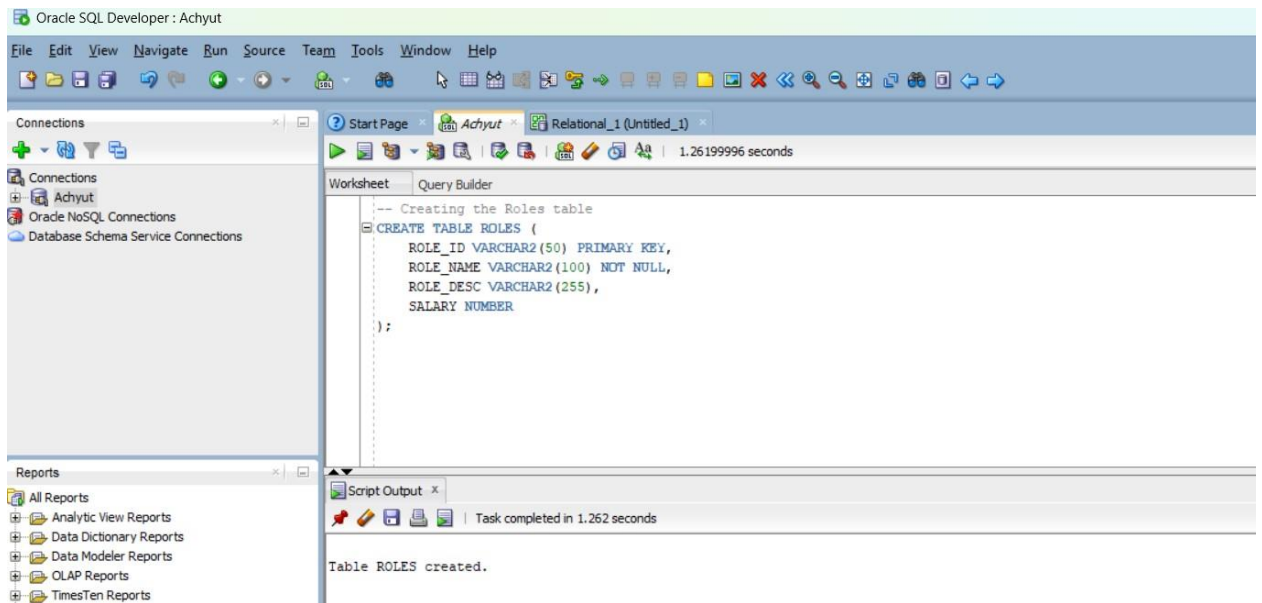


Figure 6: Creating Table for roles

```
-- Creating the Users table
CREATE TABLE USERS (
  USER_ID VARCHAR2(50) PRIMARY KEY,
  ROLE_ID VARCHAR2(50),
  USERNAME VARCHAR2(100) NOT NULL,
  EMAIL VARCHAR2(100) UNIQUE NOT NULL,
  CONTACT_NO VARCHAR2(15),
  FOREIGN KEY (ROLE_ID) REFERENCES ROLES(ROLE_ID)
);
```

Figure 7: Creating Tables for Users

```
-- Creating the Projects table
CREATE TABLE PROJECTS (
    PROJECT_ID VARCHAR2(50) PRIMARY KEY,
    USER_ID VARCHAR2(50),
    PROJECT_NAME VARCHAR2(100) NOT NULL,
    PROJECT_STATUS VARCHAR2(50),
    START_DATE DATE NOT NULL,
    DUE_DATE DATE,
    FOREIGN KEY (USER_ID) REFERENCES USERS (USER_ID)
);
```

Figure 8: Creating Table for projects

```
-- Creating the Milestones table
CREATE TABLE MILESTONES (
    MILESTONE_ID VARCHAR2(50) PRIMARY KEY,
    PROJECT_ID VARCHAR2(50),
    MILESTONE_NAME VARCHAR2(100) NOT NULL,
    DURATION NUMBER,
    START_DATE DATE NOT NULL,
    DUE_DATE DATE,
    FOREIGN KEY (PROJECT_ID) REFERENCES PROJECTS (PROJECT_ID)
);
```

Figure 9: Creating Tables for Milestones

```
-- Creating the Tasks table
CREATE TABLE TASKS (
    TASK_ID VARCHAR2(50) PRIMARY KEY,
    PROJECT_ID VARCHAR2(50),
    TASK_NAME VARCHAR2(100) NOT NULL,
    DESCRIPTION VARCHAR2(255),
    STATUS VARCHAR2(50),
    START_DATE DATE NOT NULL,
    DUE_DATE DATE,
    FOREIGN KEY (PROJECT_ID) REFERENCES PROJECTS(PROJECT_ID)
);
```

Figure 10: Creating Tables for Tasks

```
-- Creating the Subtasks table
CREATE TABLE SUBTASKS (
    SUBTASK_ID VARCHAR2(50) PRIMARY KEY,
    TASK_ID VARCHAR2(50),
    DESCRIPTION VARCHAR2(255),
    START_DATE DATE NOT NULL,
    DUE_DATE DATE,
    FOREIGN KEY (TASK_ID) REFERENCES TASKS(TASK_ID)
);
```

Figure 11: Creating tables for Subtask

```
-- Creating the Resources table
CREATE TABLE RESOURCES (
    RESOURCE_ID VARCHAR2(50) PRIMARY KEY,
    RESOURCE_NAME VARCHAR2(100) NOT NULL,
    TASK_ID VARCHAR2(50),
    DESCRIPTION VARCHAR2(255),
    RESOURCE_CATEGORY VARCHAR2(50),
    DUE_DATE DATE,
    FOREIGN KEY (TASK_ID) REFERENCES TASKS (TASK_ID)
);
```

Figure 12: Creating Table for resources

```
-- Creating the Comments table
CREATE TABLE COMMENTS (
    COMMENT_ID VARCHAR2(50) PRIMARY KEY,
    COMMENT_DATE DATE DEFAULT SYSDATE,
    CONTENT CLOB NOT NULL,
    USER_ID VARCHAR2(50),
    TASK_ID VARCHAR2(50),
    FOREIGN KEY (USER_ID) REFERENCES USERS (USER_ID),
    FOREIGN KEY (TASK_ID) REFERENCES TASKS (TASK_ID)
);
```

Figure 13: Creating Tables for comments

4.2 Data Insertion:

```
-- Insert values into Roles table
INSERT INTO ROLES (ROLE_ID, ROLE_NAME, ROLE_DESC, SALARY) VALUES ('R001', 'Manager', 'Oversees projects and teams', 80000);
INSERT INTO ROLES (ROLE_ID, ROLE_NAME, ROLE_DESC, SALARY) VALUES ('R002', 'Developer', 'Writes and maintains code', 60000);
INSERT INTO ROLES (ROLE_ID, ROLE_NAME, ROLE_DESC, SALARY) VALUES ('R003', 'Tester', 'Tests and ensures quality', 50000);
```

Script Output X

Task completed in 1.094 seconds

1 row inserted.

Figure 14: Inserting Values in roles table

```
-- Insert values into Users table
INSERT INTO USERS (USER_ID, ROLE_ID, USERNAME, EMAIL, CONTACT_NO) VALUES ('U001', 'R001', 'Achyut', 'achyut@gmail.com', '9847730555');
INSERT INTO USERS (USER_ID, ROLE_ID, USERNAME, EMAIL, CONTACT_NO) VALUES ('U002', 'R002', 'Simmi', 'simranpak@gmail.com', '9856247056');
INSERT INTO USERS (USER_ID, ROLE_ID, USERNAME, EMAIL, CONTACT_NO) VALUES ('U003', 'R003', 'Muskan', 'muskangmail.com', '9785102305');

-- Insert values into Projects table
```

Figure 15: Inserting Values in users table

```
-- Insert values into Projects table
INSERT INTO PROJECTS (PROJECT_ID, USER_ID, PROJECT_NAME, PROJECT_STATUS, START_DATE, DUE_DATE) VALUES ('P001', 'U001', 'Project Alpha', 'Active', TO_DATE('2025-01-01', 'YYYY-MM-DD'), TO_DATE('2025-01-01', 'YYYY-MM-DD'));
INSERT INTO PROJECTS (PROJECT_ID, USER_ID, PROJECT_NAME, PROJECT_STATUS, START_DATE, DUE_DATE) VALUES ('P002', 'U002', 'Project Beta', 'Completed', TO_DATE('2024-01-01', 'YYYY-MM-DD'), TO_DATE('2024-01-01', 'YYYY-MM-DD'));
INSERT INTO PROJECTS (PROJECT_ID, USER_ID, PROJECT_NAME, PROJECT_STATUS, START_DATE, DUE_DATE) VALUES ('P003', 'U003', 'Project Gamma', 'Planned', TO_DATE('2025-07-01', 'YYYY-MM-DD'), TO_DATE('2025-07-01', 'YYYY-MM-DD'));

-- Insert values into Milestones table
```

Figure 16: Inserting values in Project table

```
-- Insert values into Milestones table
INSERT INTO MILESTONES (MILESTONE_ID, PROJECT_ID, MILESTONE_NAME, DURATION, START_DATE, DUE_DATE) VALUES ('M001', 'P001', 'Initial Setup', 30, TO_DATE('2025-01-01', 'YYYY-MM-DD'), TO_DATE('2025-01-01', 'YYYY-MM-DD'));
INSERT INTO MILESTONES (MILESTONE_ID, PROJECT_ID, MILESTONE_NAME, DURATION, START_DATE, DUE_DATE) VALUES ('M002', 'P002', 'Testing Phase', 60, TO_DATE('2024-10-01', 'YYYY-MM-DD'), TO_DATE('2024-10-01', 'YYYY-MM-DD'));
INSERT INTO MILESTONES (MILESTONE_ID, PROJECT_ID, MILESTONE_NAME, DURATION, START_DATE, DUE_DATE) VALUES ('M003', 'P003', 'Planning Stage', 15, TO_DATE('2025-07-01', 'YYYY-MM-DD'), TO_DATE('2025-07-01', 'YYYY-MM-DD'));

-- Insert values into Tasks table
```

Figure 17: Inserting values in milestone table


```
-- Insert values into Tasks table
INSERT INTO TASKS (TASK_ID, PROJECT_ID, TASK_NAME, DESCRIPTION, STATUS, START_DATE, DUE_DATE) VALUES ('T001', 'P001', 'Design UI', 'Create user interface', 'In Progress',
TO_DATE('2025-01-01', 'YYYY-MM-DD'), TO_DATE('2025-02-01', 'YYYY-MM-DD'));
INSERT INTO TASKS (TASK_ID, PROJECT_ID, TASK_NAME, DESCRIPTION, STATUS, START_DATE, DUE_DATE) VALUES ('T002', 'P002', 'Code Backend', 'Develop API endpoints', 'Completed',
TO_DATE('2024-01-01', 'YYYY-MM-DD'), TO_DATE('2024-03-01', 'YYYY-MM-DD'));
INSERT INTO TASKS (TASK_ID, PROJECT_ID, TASK_NAME, DESCRIPTION, STATUS, START_DATE, DUE_DATE) VALUES ('T003', 'P003', 'Plan Architecture', 'Define system architecture', 'Planned',
TO_DATE('2025-07-01', 'YYYY-MM-DD'), TO_DATE('2025-07-15', 'YYYY-MM-DD'));
```

Figure 18: Inserting values in task table

```
-- Insert values into Subtasks table
INSERT INTO SUBTASKS (SUBTASK_ID, TASK_ID, DESCRIPTION, START_DATE, DUE_DATE) VALUES ('ST001', 'T001', 'Design homepage',
TO_DATE('2025-01-01', 'YYYY-MM-DD'), TO_DATE('2025-01-15', 'YYYY-MM-DD'));
INSERT INTO SUBTASKS (SUBTASK_ID, TASK_ID, DESCRIPTION, START_DATE, DUE_DATE) VALUES ('ST002', 'T002', 'Develop login API',
TO_DATE('2024-01-05', 'YYYY-MM-DD'), TO_DATE('2024-01-20', 'YYYY-MM-DD'));
INSERT INTO SUBTASKS (SUBTASK_ID, TASK_ID, DESCRIPTION, START_DATE, DUE_DATE) VALUES ('ST003', 'T003', 'Research tech stack',
TO_DATE('2025-07-01', 'YYYY-MM-DD'), TO_DATE('2025-07-05', 'YYYY-MM-DD'));
```

Figure 19: Inserting Values in Subtask table

```
-- Insert values into Resources table
INSERT INTO RESOURCES (RESOURCE_ID, RESOURCE_NAME, TASK_ID, DESCRIPTION, RESOURCE_CATEGORY, DUE_DATE) VALUES ('R001', 'Laptop', 'T001', 'High-performance laptop', 'Hardware',
TO_DATE('2025-02-01', 'YYYY-MM-DD'));
INSERT INTO RESOURCES (RESOURCE_ID, RESOURCE_NAME, TASK_ID, DESCRIPTION, RESOURCE_CATEGORY, DUE_DATE) VALUES ('R002', 'API Documentation', 'T002', 'Guidelines for API use', 'Document',
TO_DATE('2024-03-01', 'YYYY-MM-DD'));
INSERT INTO RESOURCES (RESOURCE_ID, RESOURCE_NAME, TASK_ID, DESCRIPTION, RESOURCE_CATEGORY, DUE_DATE) VALUES ('R003', 'Database', 'T003', 'PostgreSQL setup', 'Software',
TO_DATE('2025-07-15', 'YYYY-MM-DD'));
```

Figure 20: Inserting values into resource table

```
-- Insert values into Comments table
INSERT INTO COMMENTS (COMMENT_ID, COMMENT_DATE, CONTENT, USER_ID, TASK_ID) VALUES ('C001', SYSDATE, 'Great progress so far!', 'U001', 'T001');
INSERT INTO COMMENTS (COMMENT_ID, COMMENT_DATE, CONTENT, USER_ID, TASK_ID) VALUES ('C002', SYSDATE, 'Please review the API documentation.', 'U002', 'T002');
INSERT INTO COMMENTS (COMMENT_ID, COMMENT_DATE, CONTENT, USER_ID, TASK_ID) VALUES ('C003', SYSDATE, 'Architecture looks solid.', 'U003', 'T003');
```

Figure 21: Inserting values in comments tables

5. Final ERD:

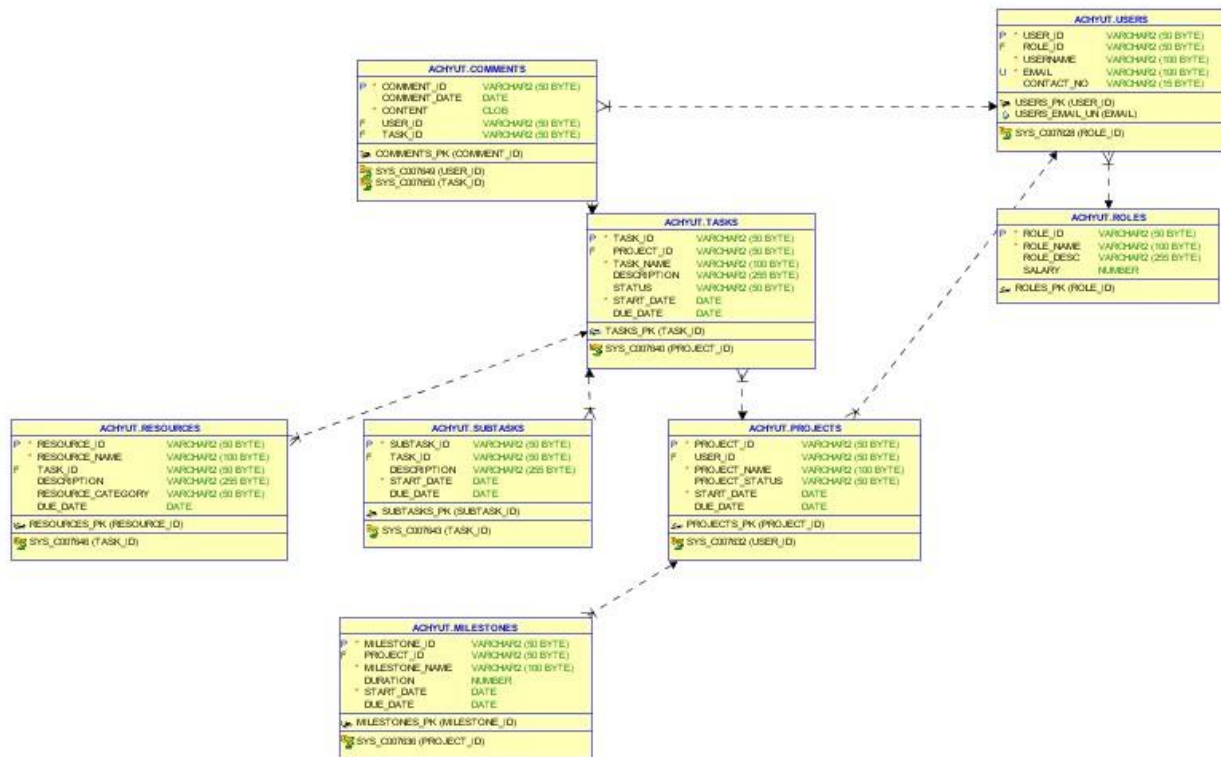
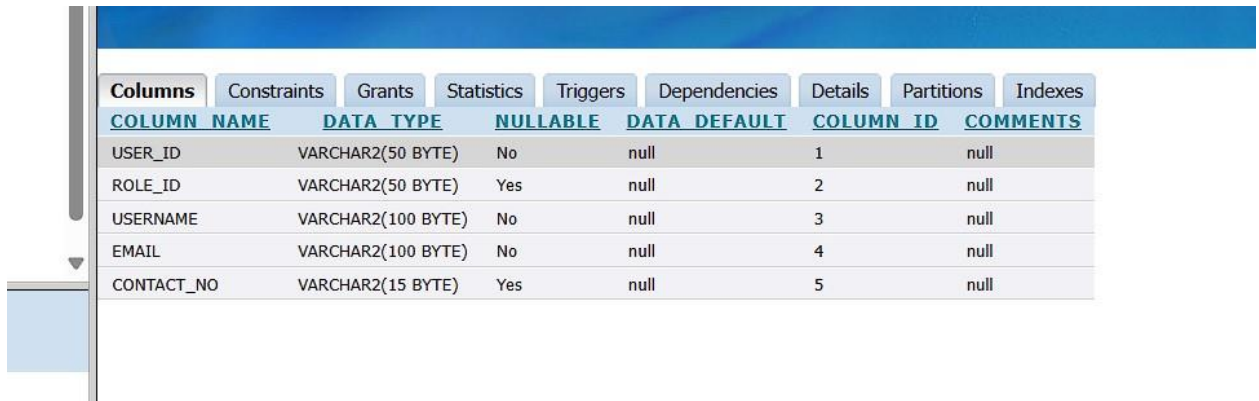


Figure 22: Final ERD

6. Data Dictionary:

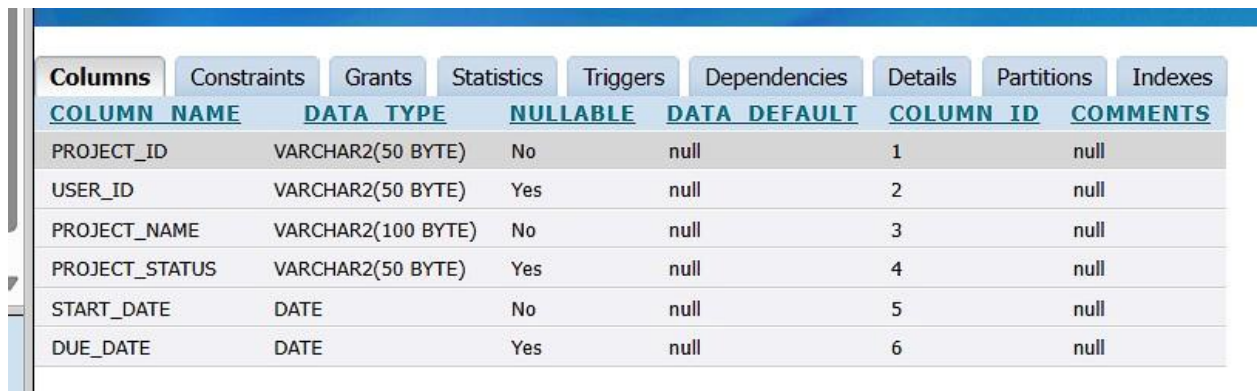
1. Users:



COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
USER_ID	VARCHAR2(50 BYTE)	No	null	1	null
ROLE_ID	VARCHAR2(50 BYTE)	Yes	null	2	null
USERNAME	VARCHAR2(100 BYTE)	No	null	3	null
EMAIL	VARCHAR2(100 BYTE)	No	null	4	null
CONTACT_NO	VARCHAR2(15 BYTE)	Yes	null	5	null

Figure 23: Data Dictionary of Users table

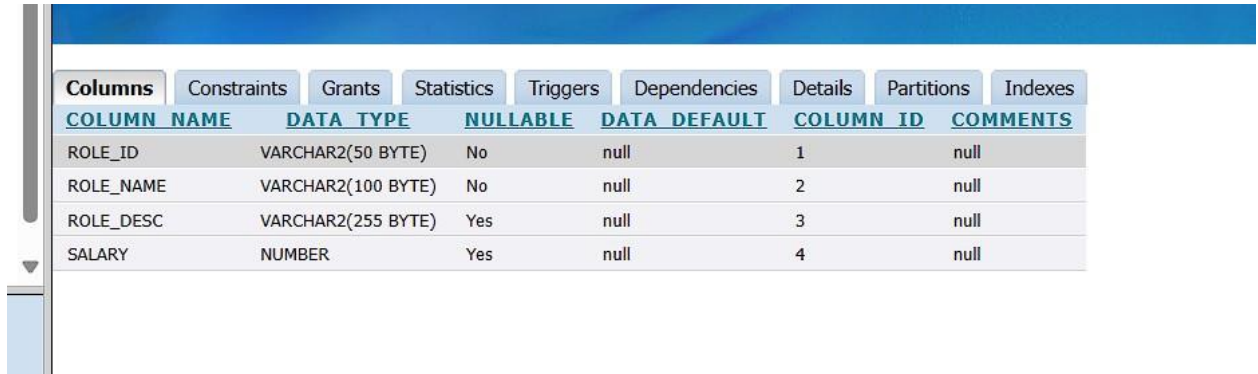
2. Project:



COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
PROJECT_ID	VARCHAR2(50 BYTE)	No	null	1	null
USER_ID	VARCHAR2(50 BYTE)	Yes	null	2	null
PROJECT_NAME	VARCHAR2(100 BYTE)	No	null	3	null
PROJECT_STATUS	VARCHAR2(50 BYTE)	Yes	null	4	null
START_DATE	DATE	No	null	5	null
DUE_DATE	DATE	Yes	null	6	null

Figure 24: Data Dictionary of Project table

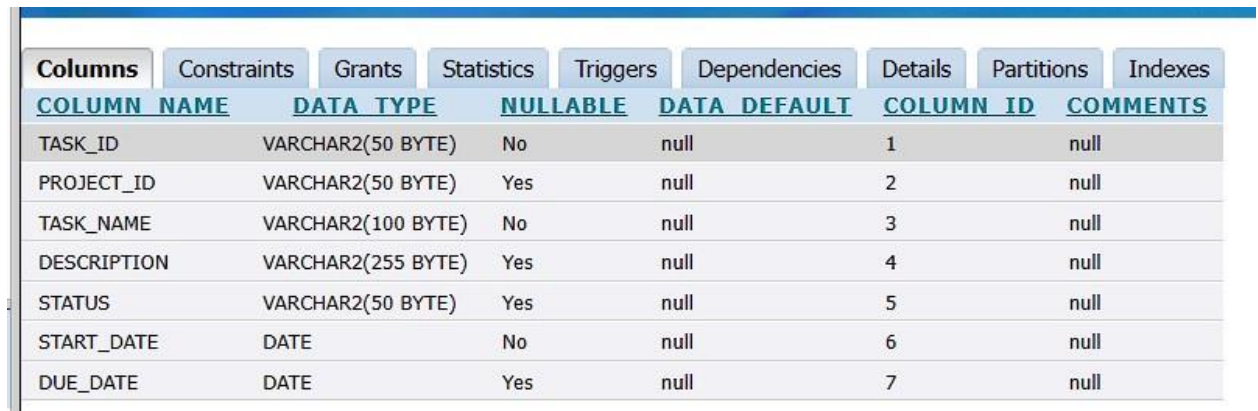
3. Roles:



COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS
ROLE_ID	VARCHAR2(50 BYTE)	No	null	1	null
ROLE_NAME	VARCHAR2(100 BYTE)	No	null	2	null
ROLE_DESC	VARCHAR2(255 BYTE)	Yes	null	3	null
SALARY	NUMBER	Yes	null	4	null

Figure 25: Data Dictionary of roles

4. Tasks:



COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS
TASK_ID	VARCHAR2(50 BYTE)	No	null	1	null
PROJECT_ID	VARCHAR2(50 BYTE)	Yes	null	2	null
TASK_NAME	VARCHAR2(100 BYTE)	No	null	3	null
DESCRIPTION	VARCHAR2(255 BYTE)	Yes	null	4	null
STATUS	VARCHAR2(50 BYTE)	Yes	null	5	null
START_DATE	DATE	No	null	6	null
DUE_DATE	DATE	Yes	null	7	null

Figure 26: Data Dictionary for tasks

5. Subtask:

Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details	Partitions	Indexes
COLUMN NAME	DATA TYPE	NULLABLE	DATA	DEFAULT	COLUMN ID	COMMENTS		
SUBTASK_ID	VARCHAR2(50 BYTE)	No	null		1	null		
TASK_ID	VARCHAR2(50 BYTE)	Yes	null		2	null		
DESCRIPTION	VARCHAR2(255 BYTE)	Yes	null		3	null		
START_DATE	DATE	No	null		4	null		
DUE_DATE	DATE	Yes	null		5	null		

Figure 27: Data Dictionary of Subtask table

6. Milestone:

Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details	Partitions	Indexes
COLUMN NAME	DATA TYPE	NULLABLE	DATA	DEFAULT	COLUMN ID	COMMENTS		
MILESTONE_ID	VARCHAR2(50 BYTE)	No	null		1	null		
PROJECT_ID	VARCHAR2(50 BYTE)	Yes	null		2	null		
MILESTONE_NAME	VARCHAR2(100 BYTE)	No	null		3	null		
DURATION	NUMBER	Yes	null		4	null		
START_DATE	DATE	No	null		5	null		
DUE_DATE	DATE	Yes	null		6	null		

Figure 28: Data Dictionary of Milestone

7. Comments:

Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details	Partitions	Indexes
COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS			
COMMENT_ID	VARCHAR2(50 BYTE)	No	null	1	null			
COMMENT_DATE	DATE	Yes	SYSDATE	2	null			
CONTENT	CLOB	No	null	3	null			
USER_ID	VARCHAR2(50 BYTE)	Yes	null	4	null			
TASK_ID	VARCHAR2(50 BYTE)	Yes	null	5	null			

Figure 29: Data Dictionary of comments

8. Resources:

Columns	Constraints	Grants	Statistics	Triggers	Dependencies	Details	Partitions	Indexes
COLUMN NAME	DATA TYPE	NULLABLE	DATA DEFAULT	COLUMN ID	COMMENTS			
RESOURCE_ID	VARCHAR2(50 BYTE)	No	null	1	null			
RESOURCE_NAME	VARCHAR2(100 BYTE)	No	null	2	null			
TASK_ID	VARCHAR2(50 BYTE)	Yes	null	3	null			
DESCRIPTION	VARCHAR2(255 BYTE)	Yes	null	4	null			
RESOURCE_CATEGORY	VARCHAR2(50 BYTE)	Yes	null	5	null			
DUE_DATE	DATE	Yes	null	6	null			

Figure 30: Data Dictionary for resources

7. Basic Webforms:

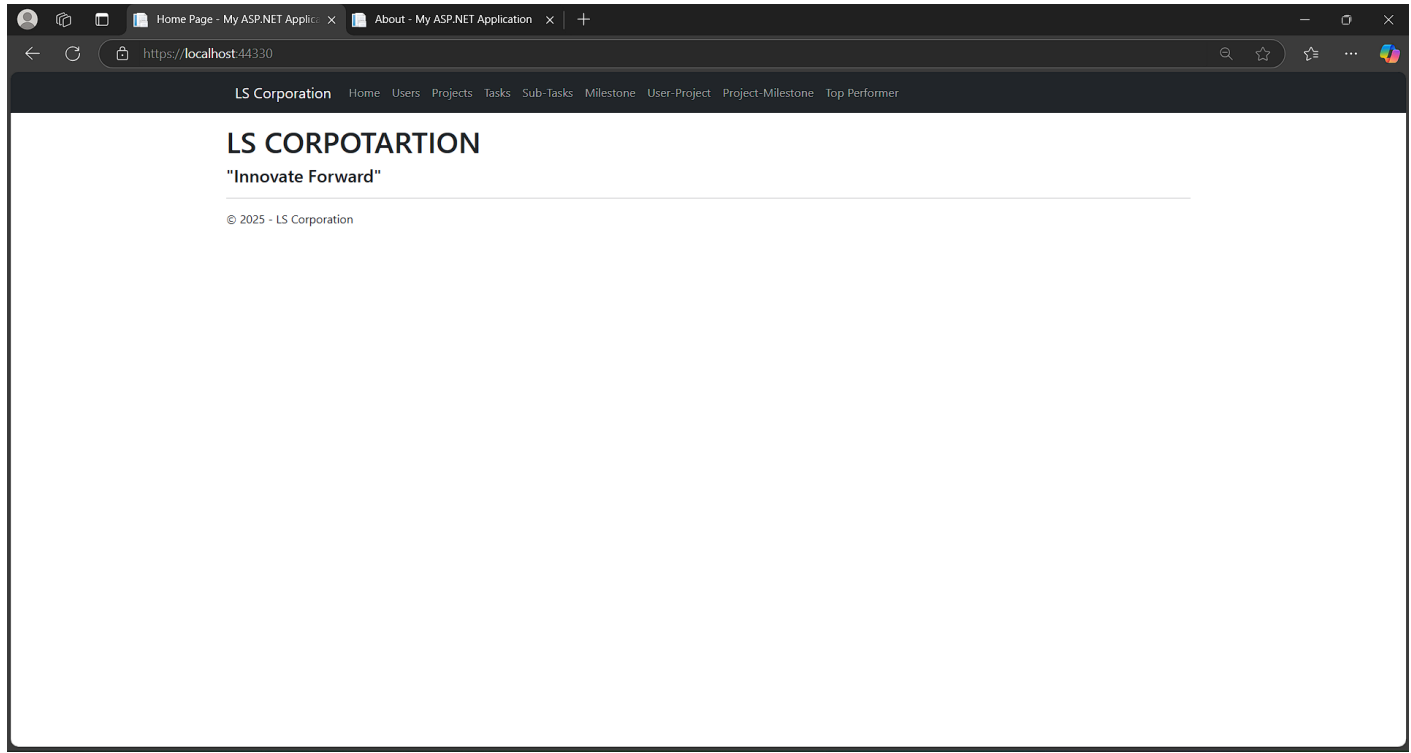


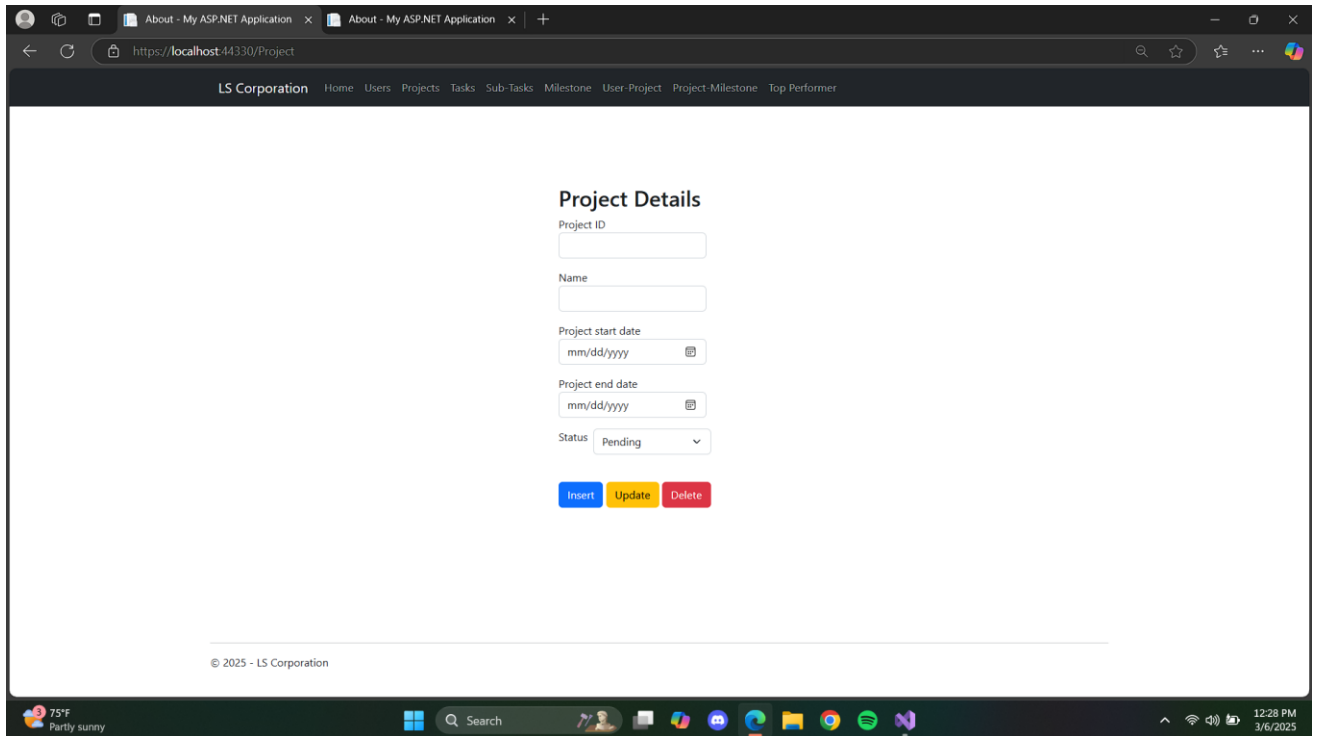
Figure 31:Home Page

1. User Details:

A screenshot of a web browser displaying the 'User Details' form. The browser's address bar shows 'https://localhost:44330/User'. The page has a dark header with the text 'LS Corporation' and a navigation menu with links: Home, Users, Projects, Tasks, Sub-Tasks, Milestone, User-Project, Project-Milestone, and Top Performer. The main content area is white and contains the title 'User Details' in a bold font. Below the title, there are four input fields labeled 'User ID', 'Name', 'Email', and 'Role'. At the bottom of the form, there are three buttons: 'Insert' (blue), 'Update' (yellow), and 'Delete' (red).

Figure 32: user details

2. Project Details:



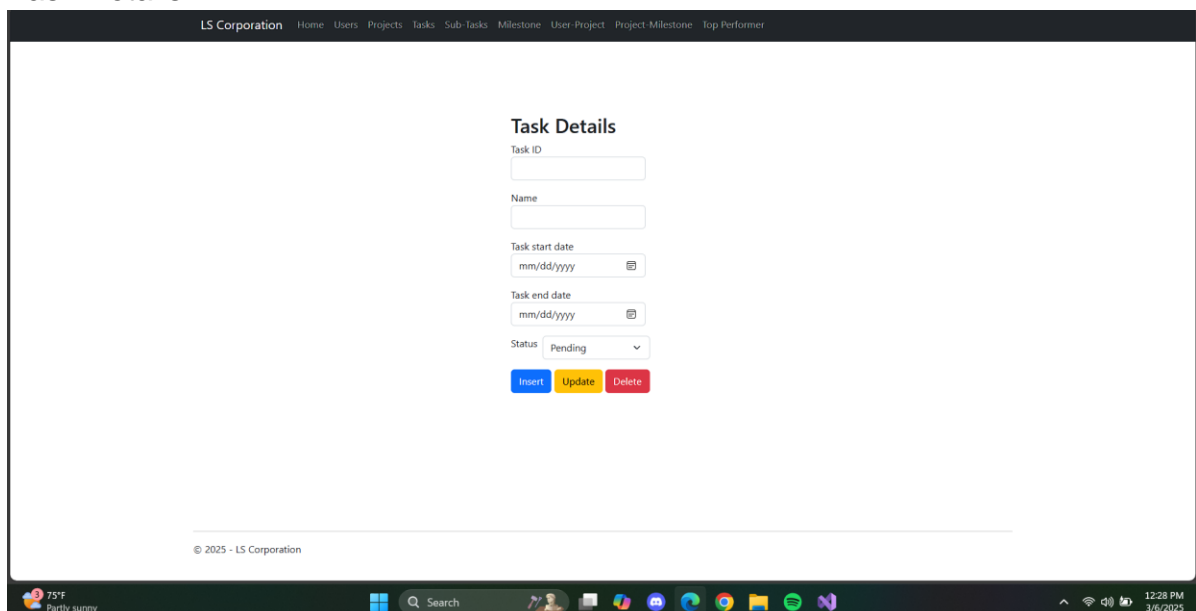
The screenshot shows a web browser window with the URL `https://localhost:44330/Project`. The application is titled "LS Corporation" and has a navigation menu with links: Home, Users, Projects, Tasks, Sub-Tasks, Milestone, User-Project, Project-Milestone, and Top Performer. The main content area displays the "Project Details" form. The form includes the following fields and controls:

- Project ID:
- Name:
- Project start date: (with a calendar icon)
- Project end date: (with a calendar icon)
- Status: (with a dropdown arrow)
- Buttons: (blue), (yellow), (red)

At the bottom of the form, there is a copyright notice: "© 2025 - LS Corporation". The Windows taskbar at the bottom shows the date and time as 12:28 PM on 3/6/2025.

Figure 33: Project Details

3. Task Details:



The screenshot shows the "Task Details" form in the same web application. The form includes the following fields and controls:

- Task ID:
- Name:
- Task start date: (with a calendar icon)
- Task end date: (with a calendar icon)
- Status: (with a dropdown arrow)
- Buttons: (blue), (yellow), (red)

At the bottom of the form, there is a copyright notice: "© 2025 - LS Corporation". The Windows taskbar at the bottom shows the date and time as 12:28 PM on 3/6/2025.

Figure 34: Task Deatils

4. SubTask Details:

The screenshot shows a web application interface for 'LS Corporation'. The top navigation bar includes links for Home, Users, Projects, Tasks, Sub-Tasks, Milestone, User-Project, Project-Milestone, and Top Performer. The main content area is titled 'Sub-Task Details' and contains a form with the following fields: 'Sub-Task ID' (text input), 'Name' (text input), 'Task start date' (date picker with 'mm/dd/yyyy' format), 'Task end date' (date picker with 'mm/dd/yyyy' format), and 'Status' (dropdown menu currently set to 'Pending'). Below the form are three buttons: 'Insert' (blue), 'Update' (yellow), and 'Delete' (red). The footer of the application shows '© 2025 - LS Corporation'. The Windows taskbar at the bottom indicates a temperature of 75°F and the time is 12:30 PM.

Figure 35: Sub-Task Details

5. Milestone Details:

The screenshot shows a web application interface for 'LS Corporation'. The top navigation bar includes links for Home, Users, Projects, Tasks, Sub-Tasks, Milestone, User-Project, Project-Milestone, and Top Performer. The main content area is titled 'Milestone Details' and contains a form with the following fields: 'Milestone ID' (text input), 'Name' (text input), 'Milestone Date' (date picker with 'mm/dd/yyyy' format), and 'Status' (dropdown menu currently set to 'Pending'). Below the form are three buttons: 'Insert' (blue), 'Update' (yellow), and 'Delete' (red). The footer of the application shows '© 2025 - LS Corporation'.

Figure 36: Milestone details

8. CRUD of basic form:

User Details

User ID

Name

Email

Role

	USER_ID	ROLE_ID	USERNAME	EMAIL	CONTACT_NO
Edit Delete	U001	R001	Achyut	achyut@gmail.com	9847730555
Edit Delete	U002	R002	Simmi	simranpak@gmail.com	9856247056
Edit Delete	U003	R003	Muskan	muskangmail.com	9785102305


Figure 37: CRUD for User Details

Project Details


Project ID

Name

Project start date

Project end date

Status

Pending



Insert

Update

Delete

		PROJECT_ID	USER_ID	PROJECT_NAME	PROJECT_STATUS	START_DATE	DUE_DATE
Edit	Delete	P001	U001	Project Alpha	Active	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM
Edit	Delete	P002	U002	Project Beta	Completed	1/1/2024 12:00:00 AM	12/31/2024 12:00:00 AM
Edit	Delete	P003	U003	Project Gamma	Planned	7/1/2025 12:00:00 AM	12/31/2025 12:00:00 AM


Figure 38: CRUD Project Details

Task Details


Task ID

Name

Task start date

Task end date

Status

Pending



Insert

Update

Delete

	TASK_ID	PROJECT_ID	TASK_NAME	DESCRIPTION	STATUS	START_DATE	DUE_DATE
Edit Delete	T001	P001	Design UI	Create user interface	In Progress	1/1/2025 12:00:00 AM	2/1/2025 12:00:00 AM
Edit Delete	T002	P002	Code Backend	Develop API endpoints	Completed	1/1/2024 12:00:00 AM	3/1/2024 12:00:00 AM
Edit Delete	T003	P003	Plan Architecture	Define system architecture	Planned	7/1/2025 12:00:00 AM	7/15/2025 12:00:00 AM


Figure 39: CRUD Task Details

Sub-Task Details


Sub-Task ID

Name

Task start date

Task end date

Status

Pending



Insert

Update

Delete

	SUBTASK_ID	TASK_ID	DESCRIPTION	START_DATE	DUE_DATE
Edit Delete	ST001	T001	Design homepage	1/1/2025 12:00:00 AM	1/15/2025 12:00:00 AM
Edit Delete	ST002	T002	Develop login API	1/5/2024 12:00:00 AM	1/20/2024 12:00:00 AM
Edit Delete	ST003	T003	Research tech stack	7/1/2025 12:00:00 AM	7/5/2025 12:00:00 AM

Figure 40: CRUD of Sub Task

Milestone Details

Milestone ID

Name

Milestone Date

mm/dd/yyyy

Status

Pending

Insert

Update

Delete

MILESTONE_ID	PROJECT_ID	MILESTONE_NAME	DURATION	START_DATE	DUE_DATE
M001	P001	Initial Setup	30	1/1/2025 12:00:00 AM	1/31/2025 12:00:00 AM
M002	P002	Testing Phase	60	10/1/2024 12:00:00 AM	12/1/2024 12:00:00 AM
M003	P003	Planning Stage	15	7/1/2025 12:00:00 AM	7/15/2025 12:00:00 AM

© 2025 - LS Corporation

Figure 41: CRUD of Milestone

9. Testing Basic webform:

User Details

User ID

Name

Email

Role

	USER_ID	ROLE_ID	USERNAME	EMAIL	CONTACT_NO
Edit Delete	U001	R001	Achyut	achyut@gmail.com	9847730555
Edit Delete	U002	R002	Simmi	simranpak@gmail.com	9856247056
Edit Delete	U003	R003	Muskan	muskangmail.com	9785102305

Figure 42: Before Updating contact number of users

User Details

User ID

Name

Email

Role

Insert

Update

Delete

	USER_ID	ROLE_ID	USERNAME	EMAIL	CONTACT_NO
Edit Delete	U001	R001	Achyut	achyut@gmail.com	9785102305
Edit Delete	U002	R002	Simmi	simranpak@gmail.com	9856204680
Edit Delete	U003	R003	Muskan	muskangmail.com	9847730555

Figure 43: After Updating Contact numbers of users