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40% Individual Coursework

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1. Introduction

LS Corporation is a mid-size tech-company which is struggling working with multiple project due to bad systems leading to ineffectiveness, poor communication and difficulty tracking progress. This project is designed to solve these issues by implementing a robust project management system to centralize data, assign task and improve project visibility. This coursework focusses on using ASP.NET with C# and Oracle SQL Developer Data Modeller to design and Program a web-based database system. The system will facilitate easy communication, task allocation, project management, and milestone tracking.

In this Coursework (Database design, ER modelling, and a data dictionary) are all covered. It describes how the technology process timely task completion, helps project tracking, and enhances workflow. Additionally, this project would enable users to effectively allocate resources and monitor project progress in real time. Teams can stay organised and achieve deadlines by segmenting work into milestones. Team members will communicate more effectively if they leave comments on tasks. Accuracy and consistency of data are guaranteed by an organized database. The overall goal of this project is to increase productivity and simplify project management for LS Corporation.

This report explains the whole process of creating the project management system, which includes (database design, ER modelling, and building a data dictionary. Database normalization). It all helps to keep the data organized by removing unnecessary repetition and making sure everything is stored correctly. The ER model shows how different parts of the system connect, while the data dictionary defines tables, attributes, and their rules.

With this system, LS Corporation will be able to improve teamwork, keep track of projects better, and finish tasks on time. This report will provide a detail explanation of how the system was designed and built.

2. Textual Analysis

1. User and Project Relationship

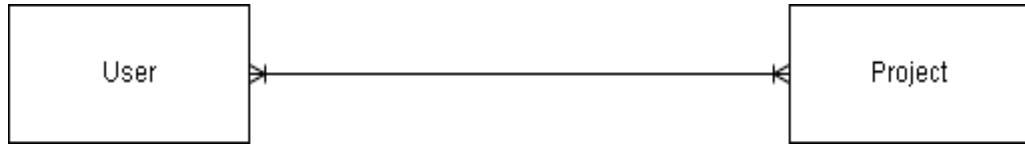


Figure 1 Textual Analysis of User and Project

Description: A user can be part of multiple projects, and a project can have multiple users. A bridge table (Project-User) is used to associate users with projects.

2. Project and Task Relationship

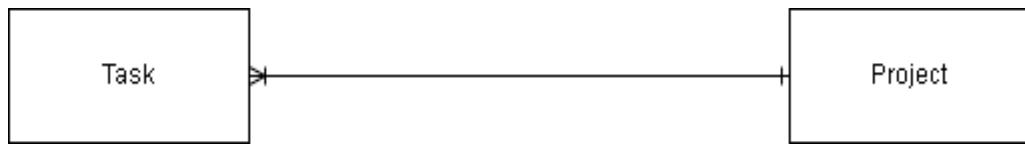


Figure 2 Textual Analysis of Project and Task

Description: Each project consists of multiple tasks, but each task belongs to only one project.

3. User and Task Relationship



Figure 3 Textual Analysis of User and Task

Description: A user can be assigned to multiple tasks, and each task can have multiple users (developers, designers, project managers, etc.). A bridge table (Task-Project-User) manages task assignments.

4. Task and Task Status Relationship



Figure 4 Textual Analysis of User and Task Status

Description: Each task has a status that depends on the user and project it belongs to. Taskstatus is maintained in the Task-Project-User table to track status per user-task.

3. ERD from Case Study

A visual depiction of the relationships between entries in a database is called an entity relationship diagram (ER diagram or ERD). ERDs are a specific kind of flowchart that illustrates the kinds of relationships that exist between various elements in a system. They employ a predetermined collection of symbols, such as diamonds, ovals, and rectangles, and connect them with connecting lines (IBM, 2024) .

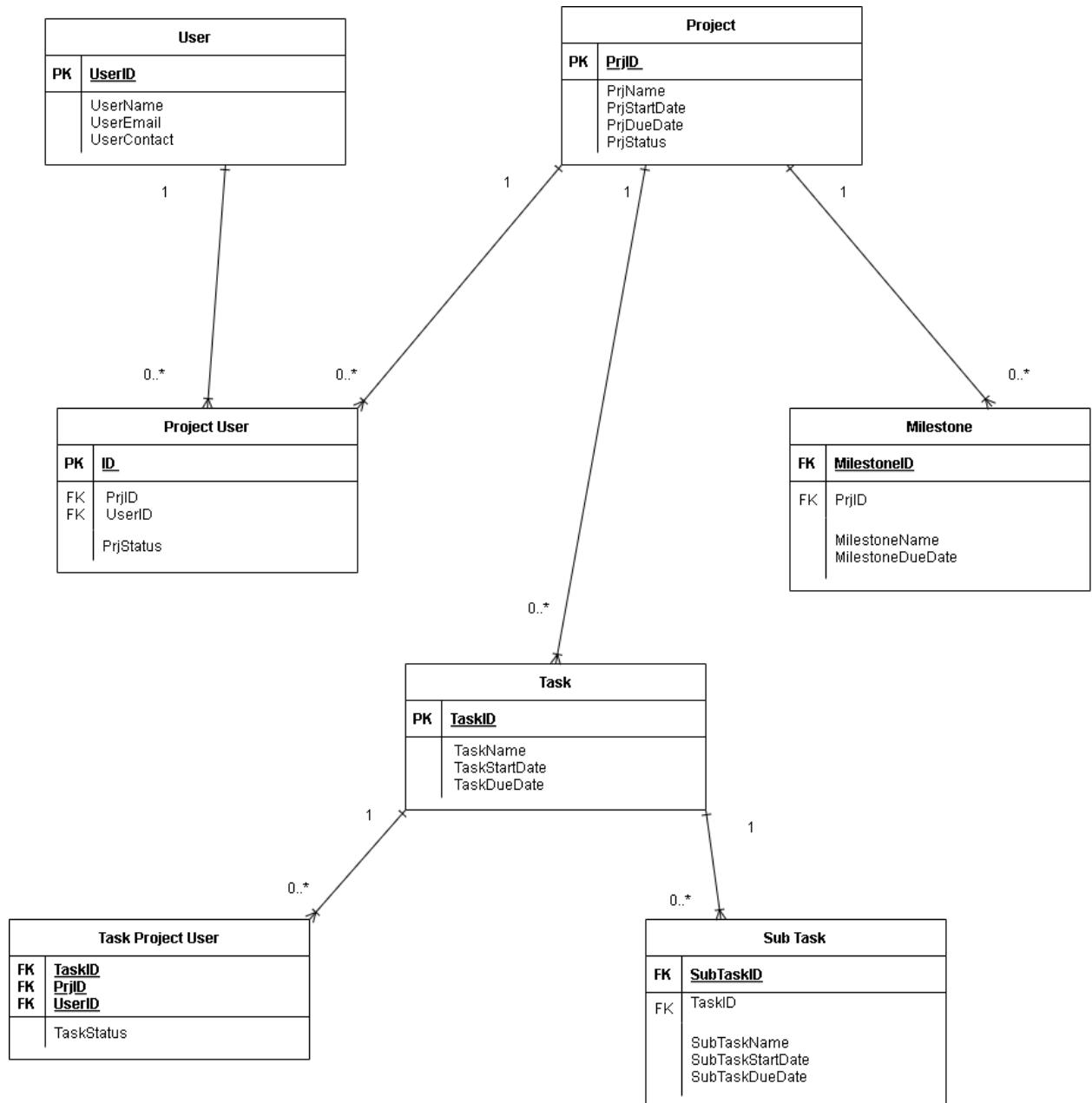


Figure 5 ERD from Case Study

4. Normalization

4.1. UNF (Un-normalized form):

User- (UserID, UserName, UserEmail, UserContact, { PrjID, PrjName, PrjStartDate, PrjDueDate, PrjStatus{ TaskID, TaskName, TaskStartDate, TaskDueDate, TaskStatus}})

In this table it doesn't meet the 1NF rules because of repeating groups contain nested projects and tasks so we have to eliminate repeating groups.

4.2. 1NF (First Normal Form):

Each record should have atomic values.

User- (UserID, UserName, UserEmail, UserContact)

Project - (PrjID, UserID*, PrjName, PrjStartDate, PrjDueDate, PrjStatus)

Task - (TaskID, PrjID*, UserID*, TaskName, TaskStartDate, TaskDueDate,
TaskStatus)

4.3. 2NF (Second Normalize Form):

In second normalization form we eliminate partial dependencies and all non-key attributes are fully functional dependent on primary key.

Checking Functional Dependency - Project

PrjID → PrjName, PrjStartDate, PrjDueDate

UserID → X

PrjID, UserID → status

Project 2 - (PrjID, PrjName, PrjStartDate, PrjDueDate)

Project User2 - (ID, PrjID*, UserID*, PrjStatus)

Checking Functional Dependency - Task

Task - 1

TaskID -> TaskName, TaskStartDate, TaskDueDate

TaskID, PrjID, UserID -> TaskStatus

PrjID, UserID -> X

Task - 2

TaskID - (TaskID, TaskName, TaskStartDate, TaskDueDate)

Task-Project-User 2 - (TaskID, PrjID, UserID, status)

Final 2NF table:

User - 2 : (UserID, UserName, UserEmail, UserContact)

Project - 2 : (PrjID, PrjName, PrjStartDate, PrjDueDate)

Project-User - 2 : (ID, PrjID*, UserID*, Prjstatus)

Task - 2 : (TaskID, TaskName, TaskStartDate, TaskDueDate)

Task-Project-User - 2 : (TaskID*, PrjID*, UserID*, Taskstatus)

4.4. 3NF (Third Normal Form):

In third normal form we need to eliminate any transitive dependencies.

transitive dependencies mostly occur when a non-key attribute depends on another non-key attribute, which means indirectly dependent on the primary key.

User Table:

UserID → UserName, UserEmail, UserContact

No transitive dependencies.

Project Table:

PrjID → PrjName, PrjStartDate, PrjDueDate

No transitive dependencies.

Project-User Table:

Composite dependency: PrjID, UserID → PrjStatus

No transitive dependencies.

Task Table:

TaskID → TaskName, TaskStartDate, TaskDueDate

No transitive dependencies.

since there are no transitive dependencies in the second normalization form(2NF), it is already in third normal form (3NF). every attribute of the table is dependent on Primary key. Here is the final list of 3NF table.

Final 3NF table:

User - 3: (UserID, UserName, UserEmail, UserContact)

Project - 3: (PrjID, PrjName, PrjStartDate, PrjDueDate)

Project-User - 3: (ID, PrjID*, UserID*, Prjstatus)

Task - 3 :(TaskID, TaskName, TaskStartDate, TaskDueDate)

Task-Project-User - 3: (TaskID*, PrjID*, UserID*, Taskstatus)

5. Integration and Assumption

5.1. Integration:

1. Remove Many-to-Many relationships: many-to-many relationships have been resolved using associative entities.
2. All relationships from the initial ERD are preserved: Ensuring that essential relationships like User-Project, User-Task, and Project-Task are properly represented.
3. PK and FK are properly assigned: Each entity has a Primary Key (PK), and relationships are handled using Foreign Keys (FK).

5.2. Assumption:

1. A project may have more than one user, and a user may work on more than one project.
2. A task is allocated to one or more users and is a part of a certain project. Each User-Task combination determines the Task's Status, which is recorded in the Task-Project-User database.
3. The Project-User table contains the status of a project so that users' engagement in various projects may be tracked.
4. There must be at least one task associated with each project, and each task must be connected to a project.
5. To create or manage tasks, a user must be assigned to a minimum of one project.

5.3. Final Entities and Attributes:

1. User Table

UserID (PK)

UserName

UserEmail

UserContact

2. Project Table

PrjID (PK)

PrjName

PrjStartDate

PrjDueDate

3. Project-User Table

ID (PK)

PrjID (FK → Project.PrjID)

UserID (FK → User.UserID)

PrjStatus

4. Task Table

TaskID (PK)

TaskName

TaskStartDate

TaskDueDate

5. Task-Project-User Table

TaskID (FK → Task.TaskID)

PrjID (FK → Project.PrjID)

UserID (FK → User.UserID)

TaskStatus

6. Final ERD (Entity Relation Diagram)

Final Entity Relation Diagram created from SQL Data Modeler.

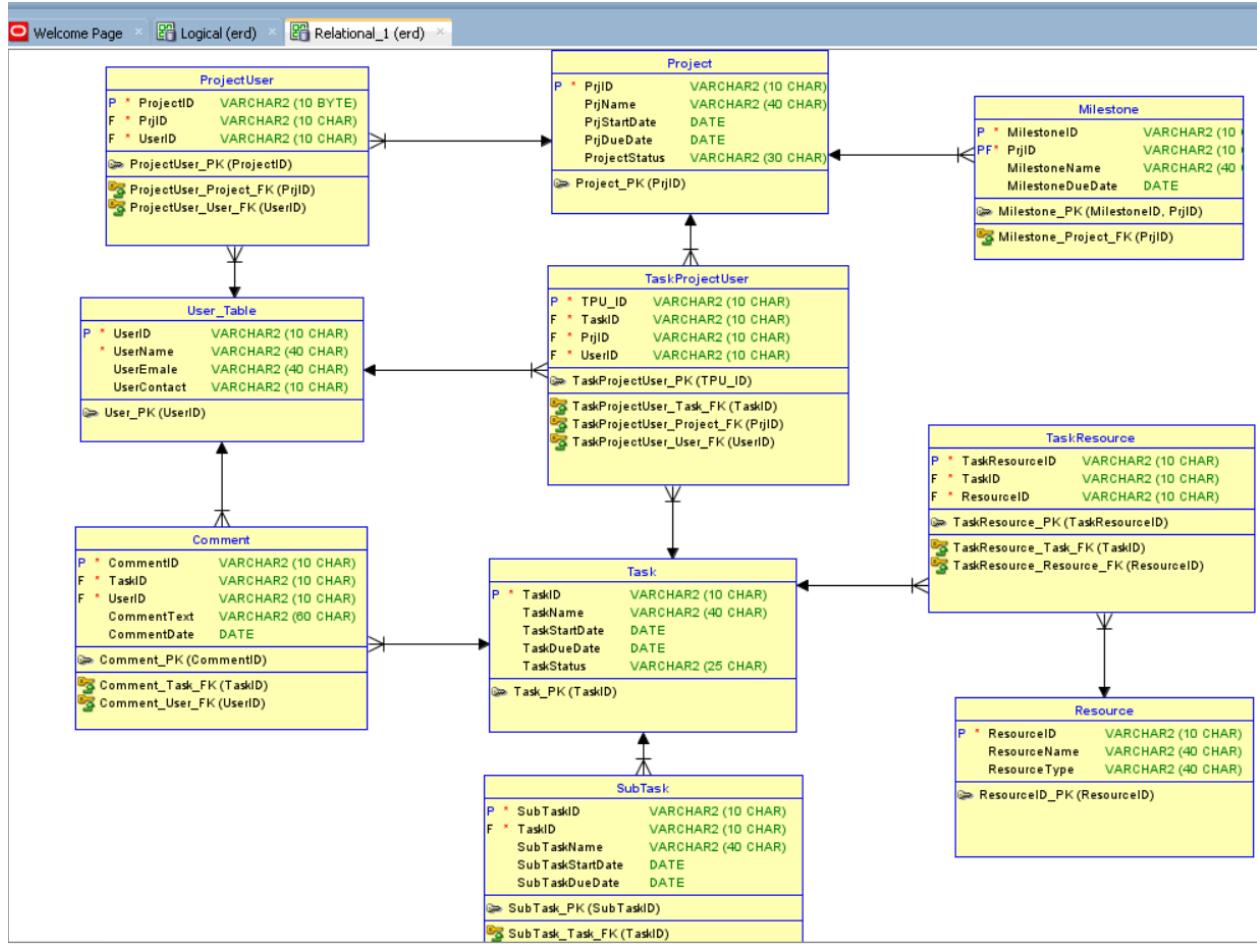


Figure 6 Final ERD

7. Data Dictionary

7.1. User Table:

Column Name	Data Type	Size	Constraint	Reference Table	Reference Column	Description	Example Data
UserID	Varchar	10	Primary Key	-	-	Uniquely identifies each user	U001
UserName	Varchar	50	Not Null	-	-	Stores the user's name	ikshit
UserEmail	Varchar	50	Unique	-	-	Stores the user's email	ikshitmh@email.com
UserContact	Varchar	15	Not Null	-	-	Stores the user's contact number	9812345678

Table 1User Table

7.2. Project Table:

Column Name	Data Type	Size	Constraint	Reference Table	Reference Column	Description	Example Data
PrjID	Varchar	10	Primary Key	-	-	Uniquely identifies each project	P001
PrjName	Varchar	50	Not Null	-	-	Stores project names	Expense Tracker
PrjStartDate	Date	-	Not Null	-	-	Stores project start date	2025-01-01
PrjDueDate	Date	-	Not Null	-	-	Stores the project's due date	2025-06-30

Table 2 Project Table

7.3. Project User Table:

Column Name	Data Type	Size	Constraint	Reference Table	Reference Column	Description	Example Data
ID	Int	-	Primary Key	-	-	Uniquely identifies each Project-User association	1
PrjID	Varchar	10	Foreign Key	Project	PrjID	Links project to a user	Prj1
UserID	Varchar	10	Foreign Key	User	UserID	Links user to a project	U1
PrjStatus	Varchar	30	Not Null	-	-	Stores project status for a user	Active

Table 3 Project User Table

7.4. Task:

Column Name	Data Type	Size	Constraint	Reference Table	Reference Column	Description	Example Data
TaskID	Varchar	10	Primary Key	-	-	Uniquely identifies each task	T1
TaskName	Varchar	30	Not Null	-	-	Stores the task's name	UI Design
TaskStartDate	Date	-	Not Null	-	-	Stores the task's start date	2025-01-05
TaskDueDate	Date	-	Not Null	-	-	Stores the task's due date	2025-02-10

Table 4 Task Table

7.5. Task Project User:

Column Name	Data Type	Size	Constraint	Reference Table	Reference Column	Description	Example Data
TaskID	Varchar	10	Foreign Key	Task	TaskID	Links task to a project and user	T1
PrjID	Varchar	10	Foreign Key	Project	PrjID	Links project to a task and user	Prj1
UserID	Varchar	10	Foreign Key	User	UserID	Links user to a task and project	U1
TaskStatus	Varchar	30	Not Null	-	-	Stores task status per user	In Progress

Table 5 Task Project User Table

8. Script

8.1. DDL Script of Project Table:

```
CREATE TABLE project (
    prjid      VARCHAR2(10 CHAR) NOT NULL,
    prjname    VARCHAR2(40 CHAR),
    prjstartdate DATE,
    prjduedate  DATE,
    projectstatus VARCHAR2(30 CHAR)
);
```

```
ALTER TABLE project ADD CONSTRAINT project_pk PRIMARY KEY ( prjid );
```

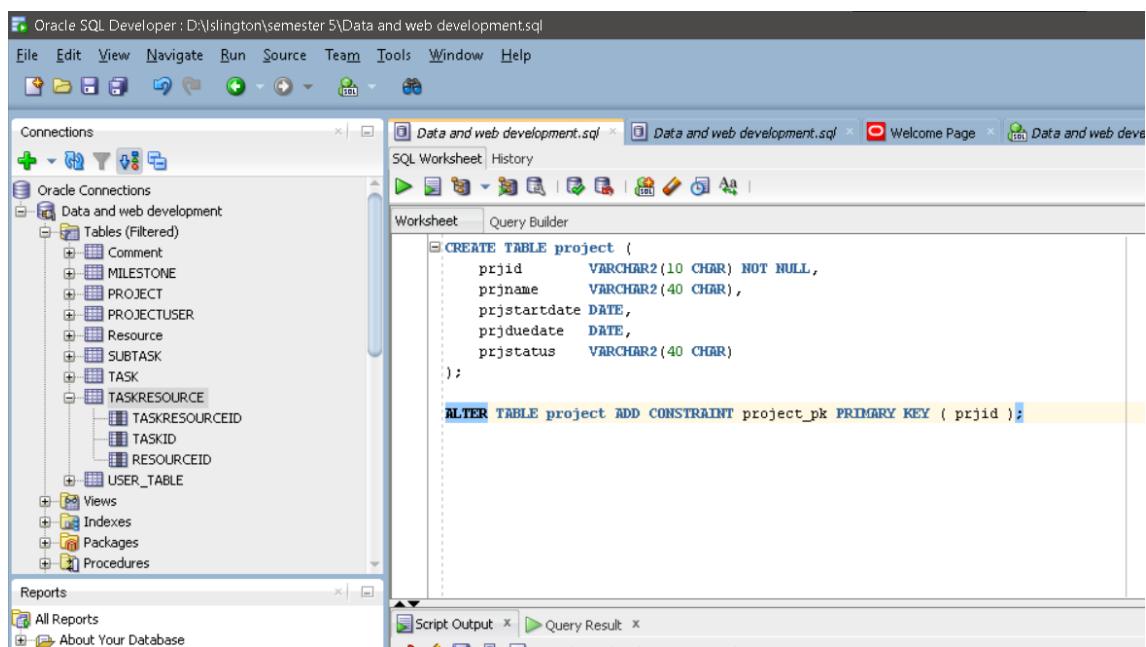


Figure 7 DDL Script of Project Table

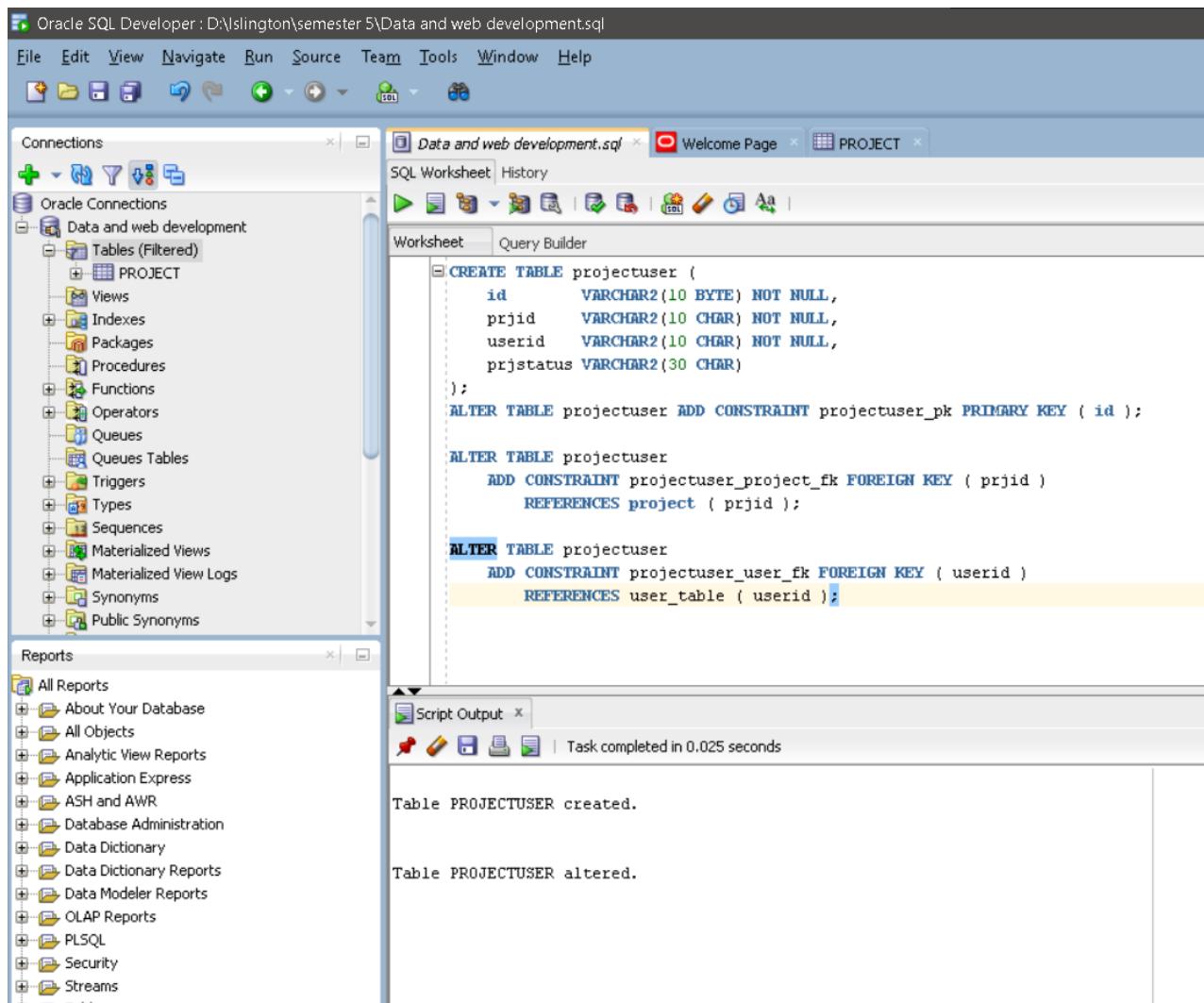
8.2. DDL Script of Project User Table:

```
CREATE TABLE projectuser (  
    projectid VARCHAR2(10 BYTE) NOT NULL,  
    prjid     VARCHAR2(10 CHAR) NOT NULL,  
    userid    VARCHAR2(10 CHAR) NOT NULL  
);
```

```
ALTER TABLE projectuser ADD CONSTRAINT projectuser_pk PRIMARY KEY ( projectid );
```

```
ALTER TABLE projectuser  
    ADD CONSTRAINT projectuser_project_fk FOREIGN KEY ( prjid )  
        REFERENCES project ( prjid );
```

```
ALTER TABLE projectuser  
    ADD CONSTRAINT projectuser_user_fk FOREIGN KEY ( userid )  
        REFERENCES user_table ( userid );
```



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes 'Oracle Connections' and a 'Data and web development' project node. Under 'Data and web development', there are nodes for Tables (Filtered), Views, Indexes, Packages, Procedures, Functions, Operators, Queues, Sequences, Materialized Views, Materialized View Logs, Synonyms, and Public Synonyms. Below these are 'Reports' and 'Script Output' sections.

The main workspace contains a 'SQL Worksheet' tab with the following DDL script:

```

CREATE TABLE projectuser (
    id      VARCHAR2(10 BYTE) NOT NULL,
    prjid   VARCHAR2(10 CHAR) NOT NULL,
    userid  VARCHAR2(10 CHAR) NOT NULL,
    prjstatus VARCHAR2(30 CHAR)
);
ALTER TABLE projectuser ADD CONSTRAINT projectuser_pk PRIMARY KEY ( id );

ALTER TABLE projectuser
    ADD CONSTRAINT projectuser_project_fk FOREIGN KEY ( prjid )
        REFERENCES project ( prjid );

ALTER TABLE projectuser
    ADD CONSTRAINT projectuser_user_fk FOREIGN KEY ( userid )
        REFERENCES user_table ( userid );

```

The 'Script Output' section at the bottom shows the results of the execution:

```

Table PROJECTUSER created.

Table PROJECTUSER altered.

```

Figure 8 DDL Script of Project User Table

8.3. DDL Script of User Table:

```
CREATE TABLE user_table (
    userid      VARCHAR2(10 CHAR) NOT NULL,
    username    VARCHAR2(40 CHAR) NOT NULL,
    useremail   VARCHAR2(40 CHAR),
    usercontact VARCHAR2(10 CHAR)
);
```

```
ALTER TABLE user_table ADD CONSTRAINT user_pk PRIMARY KEY ( userid );
```

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the project structure under 'Data and web development' with a 'Tables (Filtered)' node expanded, showing tables like PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, and PRJSTATUS. The main workspace contains two SQL statements in the 'Worksheet' tab:

```
CREATE TABLE user_table (
    userid      VARCHAR2(10 CHAR) NOT NULL,
    username    VARCHAR2(40 CHAR) NOT NULL,
    useremail   VARCHAR2(40 CHAR),
    usercontact VARCHAR2(10 CHAR)
);

ALTER TABLE user_table ADD CONSTRAINT user_pk PRIMARY KEY ( userid );
```

The 'Script Output' window at the bottom shows the execution results:

```
Task completed in 0.029 seconds

ALL_TABLES and ALL_VIEWS data dictionary views. Certain
privileges may be required to access the table. If an
application returned this message, then the table that the
application tried to access did not exist in the database, or
the application did not have access to it.

*Action:
Check each of the following
- The spelling of the table or view name is correct.
- The referenced table or view name does exist.
- The synonym points to an existing table or view.

Table USER_TABLE created.

Table USER_TABLE altered.
```

Figure 9 DDL Script of User Table

8.4. DDL Script of Comment Table:

```
CREATE TABLE "Comment" (
    commentid  VARCHAR2(10 CHAR) NOT NULL,
    taskid     VARCHAR2(10 CHAR) NOT NULL,
    userid     VARCHAR2(10 CHAR) NOT NULL,
    commenttext VARCHAR2(60 CHAR),
    commentdate DATE
);
```

```
ALTER TABLE "Comment" ADD CONSTRAINT comment_pk PRIMARY KEY (
    commentid );
```

```
ALTER TABLE "Comment"
    ADD CONSTRAINT comment_task_fk FOREIGN KEY ( taskid )
        REFERENCES task ( taskid );
```

```
ALTER TABLE "Comment"
    ADD CONSTRAINT comment_user_fk FOREIGN KEY ( userid )
        REFERENCES user_table ( userid );
```

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the database structure under 'Data and web development' connection, including tables like MILESTONE, PROJECT, PROJECTUSER, Resource, SUBTASK, TASK, TASKPROJECTUSER, TASKRESOURCE, and USER_TABLE. Below this is the 'Reports' section with various report types. The main workspace is titled 'Data and web development.sql' and contains the following DDL script:

```

CREATE TABLE "Comment" (
    commentid  VARCHAR2(10 CHAR) NOT NULL,
    taskid     VARCHAR2(10 CHAR) NOT NULL,
    userid     VARCHAR2(10 CHAR) NOT NULL,
    commenttext VARCHAR2(60 CHAR),
    commentdate DATE
);

ALTER TABLE "Comment" ADD CONSTRAINT comment_pk PRIMARY KEY (commentid);

ALTER TABLE "Comment"
    ADD CONSTRAINT comment_task_fk FOREIGN KEY (taskid)
        REFERENCES task (taskid);

ALTER TABLE "Comment"
    ADD CONSTRAINT comment_user_fk FOREIGN KEY (userid)
        REFERENCES user_table (userid);

```

The 'Script Output' tab at the bottom shows the execution results:

```

Table "Comment" created.

Table "Comment" altered.

Table "Comment" altered.

Table "Comment" altered.

```

Figure 10 DDL Script of Comment Table

8.5. DDL Script of Task Project User Table:

```
CREATE TABLE taskprojectuser (
    tpu_id VARCHAR2(10 CHAR) NOT NULL,
    taskid VARCHAR2(10 CHAR) NOT NULL,
    prjid VARCHAR2(10 CHAR) NOT NULL,
    userid VARCHAR2(10 CHAR) NOT NULL
);
```

```
ALTER TABLE taskprojectuser ADD CONSTRAINT taskprojectuser_pk PRIMARY
KEY ( tpu_id );
```

```
ALTER TABLE taskprojectuser
    ADD CONSTRAINT taskprojectuser_project_fk FOREIGN KEY ( prjid )
        REFERENCES project ( prjid );
```

```
ALTER TABLE taskprojectuser
    ADD CONSTRAINT taskprojectuser_task_fk FOREIGN KEY ( taskid )
        REFERENCES task ( taskid );
```

```
ALTER TABLE taskprojectuser
    ADD CONSTRAINT taskprojectuser_user_fk FOREIGN KEY ( userid )
        REFERENCES user_table ( userid );
```

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes an 'Oracle Connections' node and a 'Data and web development' database node. Under 'Data and web development', there are several objects: MILESTONE, PROJECT, PROJECTUSER, and USER_TABLE. The 'Reports' section is also visible.

The main workspace contains a 'Worksheet' tab where the DDL script for the 'taskprojectuser' table is being written. The script creates the table with columns tpid, taskid, prjid, userid, and taskstatus, and adds three foreign key constraints: taskprojectuser_pk (primary key on tpid), taskprojectuser_project_fk (foreign key on prjid referencing project.prjid), and taskprojectuser_task_fk (foreign key on taskid referencing task.taskid). The last constraint, ALTER TABLE taskprojectuser ADD CONSTRAINT taskprojectuser_user_fk FOREIGN KEY (userid) REFERENCES user_table (userid);, is highlighted in yellow.

Below the worksheet is a 'Script Output' tab showing the results of the execution. It indicates that the table was created successfully and then altered, but it also shows an error message from Oracle's error help system:

```

https://docs.oracle.com/error-help/db/ora-00955/00955. 00000 - "name is already used by an existing object"
*Cause: An attempt was made to create a database object (such
as a table, view, cluster, index, or synonym) that already
existed. A user's database objects must have distinct names.
*Action: Enter a unique name for the database object or modify
or drop the existing object so it can be reused.

Table TASKPROJECTUSER created.

Table TASKPROJECTUSER altered.

```

Figure 11 DDL Script of Task Project User Table

8.6. DDL Script of Task Table:

```

CREATE TABLE task (
    taskid      VARCHAR2(10 CHAR) NOT NULL,
    taskname    VARCHAR2(40 CHAR),
    taskstartdate DATE,
    taskduedate  DATE,
    taskstatus   VARCHAR2(25 CHAR)
);

ALTER TABLE task ADD CONSTRAINT task_pk PRIMARY KEY ( taskid );

```

The screenshot shows the Oracle SQL Developer interface. On the left, the Connections pane shows an Oracle connection named 'Data and web development'. The central workspace contains two SQL statements in a worksheet tab:

```

CREATE TABLE task (
    taskid      VARCHAR2(10 CHAR) NOT NULL,
    taskname    VARCHAR2(40 CHAR),
    taskstartdate DATE,
    taskduedate  DATE,
    taskstatus   VARCHAR2(25 CHAR)
);

ALTER TABLE task ADD CONSTRAINT task_pk PRIMARY KEY ( taskid );

```

The second statement is highlighted in blue. Below the worksheet is a 'Script Output' window showing the execution results:

```

application returned this message, then the table that the
application tried to access did not exist in the database, or
the application did not have access to it.

*Action:
Check each of the following
- The spelling of the table or view name is correct.
- The referenced table or view name does exist.
- The synonym points to an existing table or view.

Table TASK created.

Table TASK altered.

```

Figure 12 DDL Script of Task Table

8.7. DDL Script of Sub Task Table:

```
CREATE TABLE subtask (
    subtaskid      VARCHAR2(10 CHAR) NOT NULL,
    taskid         VARCHAR2(10 CHAR) NOT NULL,
    subtaskname    VARCHAR2(40 CHAR),
    subtaskstartdate DATE,
    subtaskduedate DATE
);
```

```
ALTER TABLE subtask ADD CONSTRAINT subtask_pk PRIMARY KEY (
    subtaskid );
```

```
ALTER TABLE subtask
    ADD CONSTRAINT subtask_task_fk FOREIGN KEY ( taskid )
        REFERENCES task ( taskid );
```

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a connection named 'Data and web development' containing tables like MILESTONE, PROJECT, and USER_TABLE. Below this is the 'Reports' section. The main workspace is a 'Worksheet' tab in the 'SQL Worksheet' tab bar. It contains the following DDL script:

```

CREATE TABLE subtask (
    subtaskid      VARCHAR2(10 CHAR) NOT NULL,
    taskid         VARCHAR2(10 CHAR) NOT NULL,
    subtaskname    VARCHAR2(40 CHAR),
    subtaskstartdate DATE,
    subtaskduedate DATE
);

ALTER TABLE subtask ADD CONSTRAINT subtask_pk PRIMARY KEY ( subtaskid );

ALTER TABLE subtask
    ADD CONSTRAINT subtask_task_fk FOREIGN KEY ( taskid )
        REFERENCES task ( taskid );

```

The 'Script Output' tab at the bottom shows the results of the execution:

```

Table "Resource" altered.

Table SUBTASK created.

Table SUBTASK altered.

Table SUBTASK altered.

```

Figure 13 DDL Script of Sub Task Table

8.8. DDL Script of Milestone Table:

```
CREATE TABLE milestone (
    milestoneid      VARCHAR2(10 CHAR) NOT NULL,
    prjid           VARCHAR2(10 CHAR) NOT NULL,
    milestonesname  VARCHAR2(40 CHAR),
    milestonesduedate DATE
);
```

```
ALTER TABLE milestone ADD CONSTRAINT milestone_pk PRIMARY KEY (
    milestoneid,
    prjid );
```

```
ALTER TABLE milestone
    ADD CONSTRAINT milestone_project_fk FOREIGN KEY ( prjid )
        REFERENCES project ( prjid );
```

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a project named 'Data and web development' containing tables, views, indexes, packages, procedures, functions, operators, queues, triggers, types, sequences, materialized views, materialized view logs, synonyms, and public synonyms. Below this is the 'Reports' section with various report categories like All Reports, About Your Database, All Objects, Analytic View Reports, Application Express, ASH and AWR, Database Administration, Data Dictionary, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, PLSQL, Security, Streams, Table, TimesTen Reports, User Defined Reports, and XML.

The main workspace contains a 'SQL Worksheet' tab with the following DDL script:

```

CREATE TABLE milestone (
    milestoneid      VARCHAR2(10 CHAR) NOT NULL,
    prjid            VARCHAR2(10 CHAR) NOT NULL,
    milestonesname   VARCHAR2(40 CHAR),
    milestonesduedate DATE
);

ALTER TABLE milestone ADD CONSTRAINT milestone_pk PRIMARY KEY ( milestoneid );

ALTER TABLE milestone
    ADD CONSTRAINT milestone_project_fk FOREIGN KEY ( prjid )
        REFERENCES project ( prjid );
  
```

Below the worksheet is a 'Script Output' window showing the results of the executed commands:

```

Table PROJECTUSER created.

Table PROJECTUSER altered.

Table MILESTONE created.

Table MILESTONE altered.
  
```

Figure 14 DDL Script of Milestone Table

8.9. DDL Script of Task Resource Table:

```
CREATE TABLE taskresource (
    taskresourceid VARCHAR2(10 CHAR) NOT NULL,
    taskid         VARCHAR2(10 CHAR) NOT NULL,
    resourceid    VARCHAR2(10 CHAR) NOT NULL
);
```

```
ALTER TABLE taskresource ADD CONSTRAINT taskresource_pk PRIMARY
KEY ( taskresourceid );
```

```
ALTER TABLE taskresource
    ADD CONSTRAINT taskresource_resource_fk FOREIGN KEY ( resourceid )
        REFERENCES "Resource" ( resourceid );
```

```
ALTER TABLE taskresource
    ADD CONSTRAINT taskresource_task_fk FOREIGN KEY ( taskid )
        REFERENCES task ( taskid );
```

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' and 'Reports' panes. The 'Connections' pane shows an 'Oracle Connections' tree with a node for 'Data and web development' containing tables like Comment, MILESTONE, PROJECT, PROJECTUSER, Resource, SUBTASK, TASK, and TASKRESOURCE. The 'Reports' pane lists various database reports. The main workspace contains a 'SQL Worksheet' tab with the following DDL script:

```
CREATE TABLE taskresource (
    taskresourceid VARCHAR2(10 CHAR) NOT NULL,
    taskid         VARCHAR2(10 CHAR) NOT NULL,
    resourceid    VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE taskresource ADD CONSTRAINT taskresource_pk PRIMARY KEY ( taskresourceid );

ALTER TABLE taskresource
ADD CONSTRAINT taskresource_resource_fk FOREIGN KEY ( resourceid )
    REFERENCES "Resource" ( resourceid );

ALTER TABLE taskresource
ADD CONSTRAINT taskresource_task_fk FOREIGN KEY ( taskid )
    REFERENCES task ( taskid );
```

Below the worksheet, the 'Script Output' tab shows the execution results:

TASKRESOUR	TASKID	RESOURCEID
TR30	T26	R15

45 rows selected.

Figure 15 DDL Script of Task Resource Table

8.10. DDL Script of Resource Table:

```
CREATE TABLE "Resource" (
    resourceid VARCHAR2(10 CHAR) NOT NULL,
    resourcename VARCHAR2(40 CHAR),
    resourctype VARCHAR2(40 CHAR)
);
```

```
ALTER TABLE "Resource" ADD CONSTRAINT resourceid_pk PRIMARY KEY (
    resourceid );
```

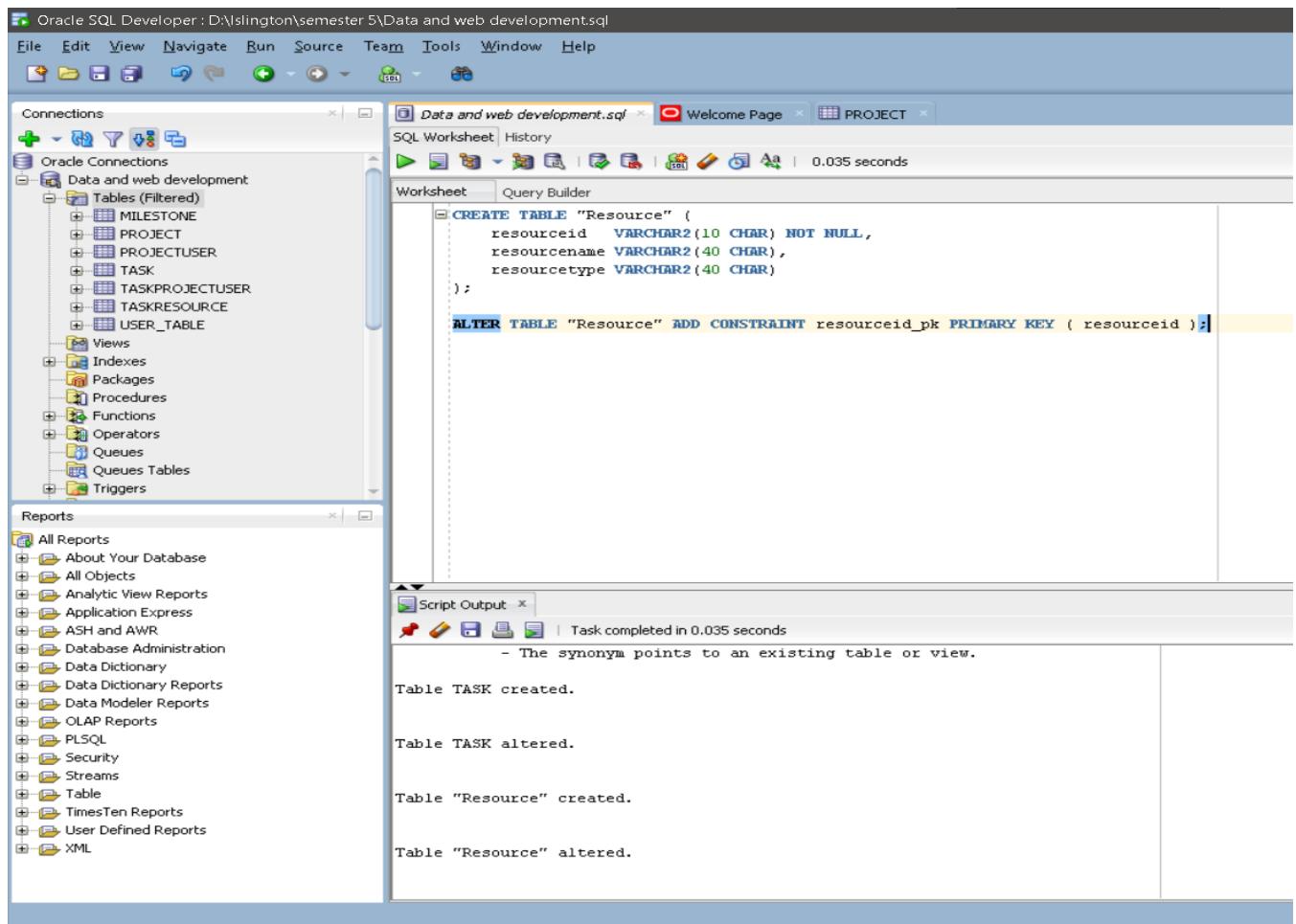
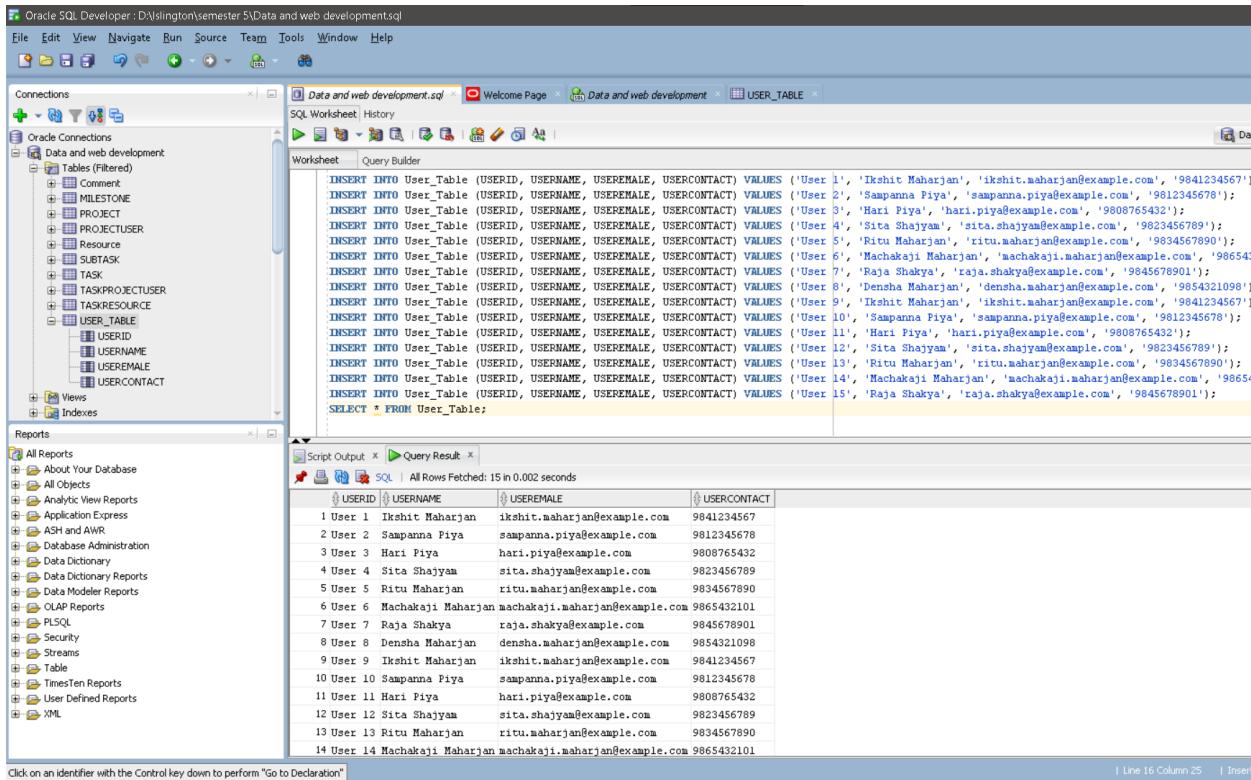


Figure 16 DDL Script of Resource Table

9. Insert Statement

Execution of Insert statement in SQL Developer.

9.1. Insert into User Table:



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a 'Data and web development' connection with a 'Tables (Filtered)' node containing 'USER_TABLE'. The 'USER_TABLE' node has columns: USERID, USERNAME, USEREMAIL, and USERCONTACT. The 'Script Output' tab at the bottom shows the executed SQL code, and the 'Query Result' tab shows the resulting 14 rows of data.

```

INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 1', 'Ikshit Maharjan', 'ikshit.maharjan@example.com', '9841234567');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 2', 'Sampanna Piya', 'sampanna.piya@example.com', '9812345678');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 3', 'Hari Piya', 'hari.piya@example.com', '9808765432');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 4', 'Sita Shayam', 'sita.shayam@example.com', '9823456789');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 5', 'Ritu Maharjan', 'ritu.maharjan@example.com', '9834567890');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 6', 'Machakaji Maharjan', 'machakaji.maharjan@example.com', '986543');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 7', 'Raja Shakya', 'raja.shakya@example.com', '9845678901');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 8', 'Densha Maharjan', 'densha.maharjan@example.com', '9854321098');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 9', 'Ikshit Maharjan', 'ikshit.maharjan@example.com', '9841234567');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 10', 'Sampanna Piya', 'sampanna.piya@example.com', '9812345678');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 11', 'Hari Piya', 'hari.piya@example.com', '9808765432');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 12', 'Sita Shayam', 'sita.shayam@example.com', '9823456789');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 13', 'Ritu Maharjan', 'ritu.maharjan@example.com', '9834567890');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 14', 'Machakaji Maharjan', 'machakaji.maharjan@example.com', '986543');
INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 15', 'Raja Shakya', 'raja.shakya@example.com', '9845678901');

SELECT * FROM User_Table;

```

USERID	USERNAME	USEREMAIL	USERCONTACT
1 User 1	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
2 User 2	Sampanna Piya	sampanna.piya@example.com	9812345678
3 User 3	Hari Piya	hari.piya@example.com	9808765432
4 User 4	Sita Shayam	sita.shayam@example.com	9823456789
5 User 5	Ritu Maharjan	ritu.maharjan@example.com	9834567890
6 User 6	Machakaji Maharjan	machakaji.maharjan@example.com	9865432101
7 User 7	Raja Shakya	raja.shakya@example.com	9845678901
8 User 8	Densha Maharjan	densha.maharjan@example.com	9854321098
9 User 9	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
10 User 10	Sampanna Piya	sampanna.piya@example.com	9812345678
11 User 11	Hari Piya	hari.piya@example.com	9808765432
12 User 12	Sita Shayam	sita.shayam@example.com	9823456789
13 User 13	Ritu Maharjan	ritu.maharjan@example.com	9834567890
14 User 14	Machakaji Maharjan	machakaji.maharjan@example.com	9865432101

Figure 17 Insert into User Table

9.2. Insert into Task Table:

The screenshot shows the Oracle SQL Developer interface with the following details:

- Connections:** Oracle Connections, Data and web development.
- Tables (Filtered):** Comment, MILESTONE, PROJECT, PROJECTUSER, Resource (ResourceID, RESOURCENAME, RESOURCETYPE), SUBTASK, TASK, TASKPROJECTUSER, TASKRESOURCE, USER_TABLE.
- Reports:** All Reports, About Your Database, All Objects, Analytic View Reports, Application Express, ASH and AWR, Database Administration, Data Dictionary, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, PLSQL, Security, Streams, Table, Table.
- SQL Worksheet:** History tab is selected. The code entered is:

```
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T1', 'Fee Management', TO_DATE('2024-04-15', 'YYYY-MM-DD'), TO_DATE('2024-05-20', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T2', 'Mobile App Development', TO_DATE('2024-05-01', 'YYYY-MM-DD'), TO_DATE('2024-06-20', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T3', 'Student Management', TO_DATE('2024-06-05', 'YYYY-MM-DD'), TO_DATE('2024-07-15', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T4', 'Library Management', TO_DATE('2024-07-10', 'YYYY-MM-DD'), TO_DATE('2024-08-20', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T5', 'Attendance Registration', TO_DATE('2024-08-15', 'YYYY-MM-DD'), TO_DATE('2024-09-25', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T6', 'Fee Management', TO_DATE('2024-09-01', 'YYYY-MM-DD'), TO_DATE('2024-10-15', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T7', 'Student Management', TO_DATE('2024-12-01', 'YYYY-MM-DD'), TO_DATE('2025-01-15', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T8', 'Library Management', TO_DATE('2025-01-01', 'YYYY-MM-DD'), TO_DATE('2025-02-10', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T9', 'Attendance Registration', TO_DATE('2025-02-15', 'YYYY-MM-DD'), TO_DATE('2025-03-20', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T10', 'Fee Management', TO_DATE('2025-03-05', 'YYYY-MM-DD'), TO_DATE('2025-04-10', 'YYYY-MM-DD'));
INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T11', 'Mobile App Development', TO_DATE('2025-04-01', 'YYYY-MM-DD'), TO_DATE('2025-05-20', 'YYYY-MM-DD'));
```
- Script Output:** All Rows Fetched: 15 in 0.008 seconds.
- Query Result:** Shows the inserted data in a table format:

TaskID	TaskName	TaskStartDate	TaskDueDate	TaskStatus
T1	Student Management	01-JAN-24	20-FEB-24	(null)
T2	Library Management	01-FEB-24	15-MAR-24	(null)
T3	Attendance Registration	10-MAR-24	10-APR-24	(null)
T4	Fee Management	15-APR-24	25-MAY-24	(null)
T5	Mobile App Development	01-MAY-24	20-JUN-24	(null)
T6	Student Management	05-JUN-24	15-JUL-24	(null)
T7	Library Management	10-JUL-24	20-AUG-24	(null)
T8	Attendance Registration	15-AUG-24	25-SEP-24	(null)
T9	Fee Management	01-SEP-24	15-OCT-24	(null)
T10	Mobile App Development	05-OCT-24	30-NOV-24	(null)
T11	Student Management	01-DEC-24	15-JAN-25	(null)
T12	Library Management	01-JAN-25	10-FEB-25	(null)
T13	Attendance Registration	15-FEB-25	20-MAR-25	(null)
T14	Fee Management	05-MAR-25	10-APR-25	(null)
T15	Mobile App Development	01-APR-25	20-MAY-25	(null)

Figure 18 Insert into Task Table

9.3. Insert into Milestone Table:

The screenshot shows the Oracle SQL Developer interface with the following details:

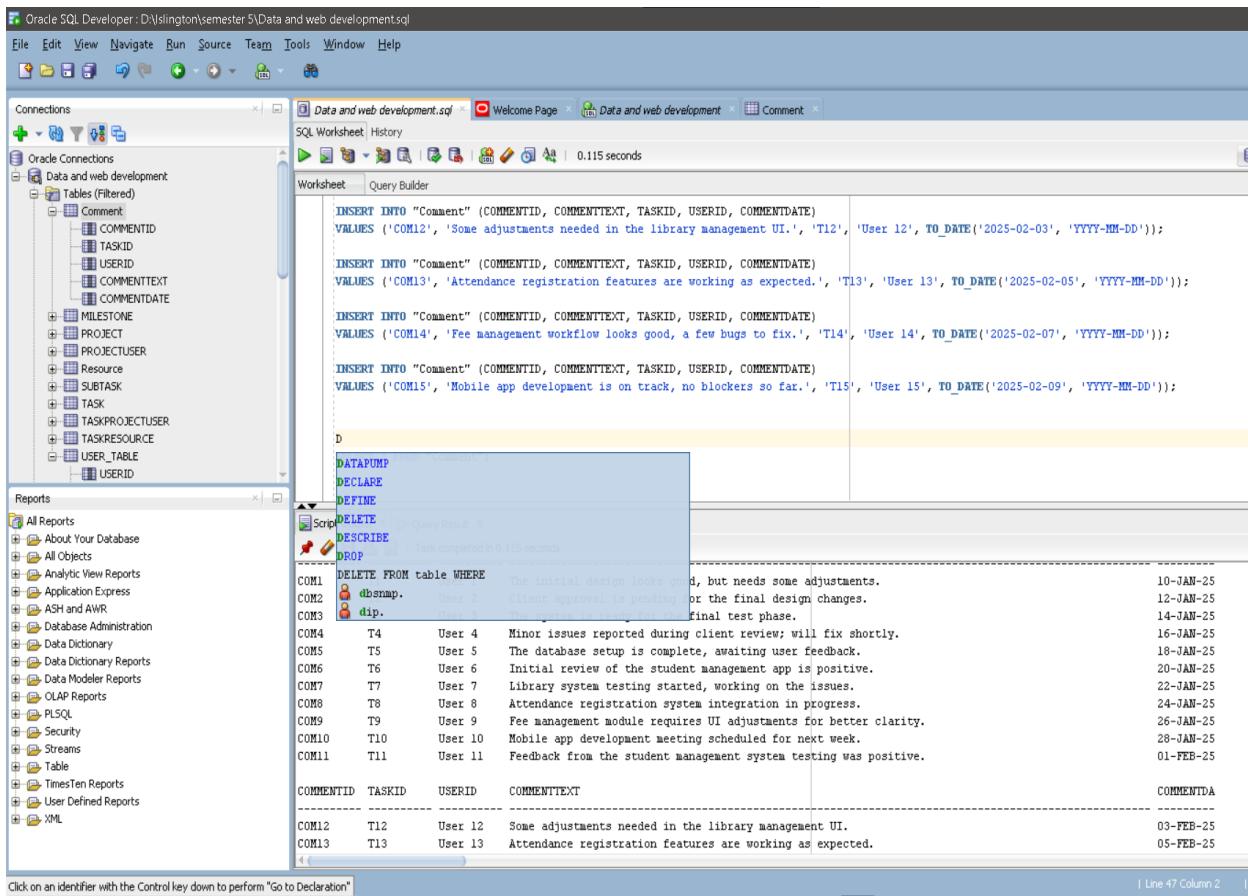
- Connections:** Oracle Connections, Data and web development.
- Tables (Filtered):** Comment, MILESTONE, PROJECT (PRJID, PRJSTARTDATE, PRJEDUEDATE, PRJSTATUS), PROJECTUSER, Resource, SUBTASK, TASK, TASKPROJECTUSER, TASKRESOURCE, USER_TABLE, USERID.
- Reports:** All Reports, About Your Database, All Objects, Analytic View Reports, Application Express, ASH and AWR, Database Administration, Data Dictionary, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, PLSQL, Security, Streams, Table, Table.
- SQL Worksheet:** History tab is selected. The code entered is:

```
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M16', 'Alpha Testing', 1, TO_DATE('2025-02-01', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M17', 'User Feedback Collection', 2, TO_DATE('2025-02-20', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M18', 'Database Migration', 3, TO_DATE('2025-03-15', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M19', 'Cloud Setup', 4, TO_DATE('2025-01-30', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M20', 'Code Review', 5, TO_DATE('2025-02-28', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M21', 'Environment Setup', 6, TO_DATE('2025-03-20', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M22', 'Performance Testing', 7, TO_DATE('2025-03-31', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M23', 'System Design Completion', 8, TO_DATE('2025-04-12', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M24', 'API Integration', 9, TO_DATE('2025-02-25', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M25', 'Testing Completion', 10, TO_DATE('2025-03-25', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M26', 'User Training', 11, TO_DATE('2025-04-15', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M27', 'Documentation', 12, TO_DATE('2025-03-18', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M28', 'Project Closure', 13, TO_DATE('2025-04-20', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M29', 'Final Presentation', 14, TO_DATE('2025-05-10', 'YYYY-MM-DD'));
INSERT INTO Milestone (MilestoneID, MilestoneName, PRJID, MilestoneDueDate) VALUES ('M30', 'Post-Launch Support', 15, TO_DATE('2025-05-25', 'YYYY-MM-DD'));
```
- Script Output:** All Rows Fetched: 31 in 0.011 seconds.
- Query Result:** Shows the inserted data in a table format:

MilestoneID	PRJID	MilestoneName	MilestoneDueDate
M16	1	User Feedback Collection	20-FEB-25
M17	2	Database Migration	15-MAR-25
M18	3	Cloud Setup	30-JAN-25
M19	4	Code Review	28-FEB-25
M20	5	Environment Setup	20-MAR-25
M21	6	Performance Testing	31-MAR-25
M22	7	System Design Completion	12-APR-25
M23	8	API Integration	25-FEB-25
M24	9	Testing Completion	25-MAR-25
M25	10	User Training	15-APR-25
M26	11	Documentation	18-MAR-25
M27	12	Project Closure	20-APR-25
M28	13	Final Presentation	10-MAY-25
M29	14	Post-Launch Support	25-MAY-25
M30	15		

Figure 19 Insert into Milestone Table

9.4. Insert into Comment Table:



The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' sidebar lists 'Data and web development' and its tables, including 'Comment'. The 'Comment' table is expanded, showing columns: COMMENTID, COMMENTTEXT, TASKID, USERID, and COMMENTDATE. Below this, the 'Reports' sidebar lists various database reports.

In the center, the 'SQL Worksheet' tab is active, showing a query builder window. The code entered is:

```

INSERT INTO "Comment" (COMMENTID, COMMENTTEXT, TASKID, USERID, COMMENTDATE)
VALUES ('COM12', 'Some adjustments needed in the library management UI.', 'T12', 'User 12', TO_DATE('2025-02-03', 'YYYY-MM-DD'));

INSERT INTO "Comment" (COMMENTID, COMMENTTEXT, TASKID, USERID, COMMENTDATE)
VALUES ('COM13', 'Attendance registration features are working as expected.', 'T13', 'User 13', TO_DATE('2025-02-05', 'YYYY-MM-DD'));

INSERT INTO "Comment" (COMMENTID, COMMENTTEXT, TASKID, USERID, COMMENTDATE)
VALUES ('COM14', 'Fee management workflow looks good, a few bugs to fix.', 'T14', 'User 14', TO_DATE('2025-02-07', 'YYYY-MM-DD'));

INSERT INTO "Comment" (COMMENTID, COMMENTTEXT, TASKID, USERID, COMMENTDATE)
VALUES ('COM15', 'Mobile app development is on track, no blockers so far.', 'T15', 'User 15', TO_DATE('2025-02-09', 'YYYY-MM-DD'));

```

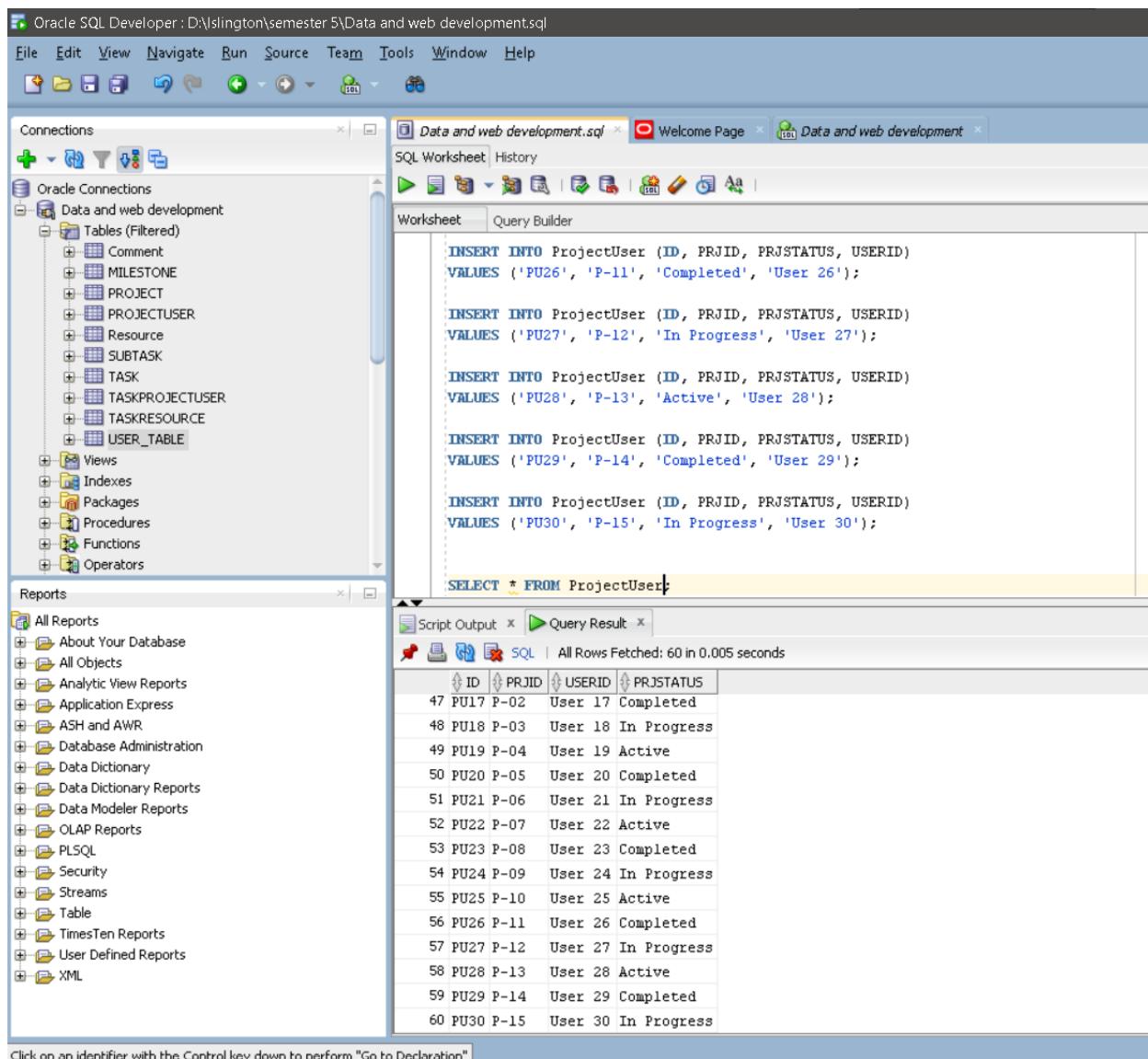
Below the code, the 'Script' tab is open, showing a script for a 'DATAUMP' job. The script includes declarations for 'dbsnmp' and 'dip', and a delete statement from the 'comment' table where the comment text contains specific keywords.

The bottom of the interface shows a table of comments with columns: COMMENTID, TASKID, USERID, COMMENTTEXT, and COMMENTDATE. The data is as follows:

COMMENTID	TASKID	USERID	COMMENTTEXT	COMMENTDATE
COM1	DELETE FROM table WHERE		The initial design looks good, but needs some adjustments.	10-JAN-25
COM2	dbsnmp.	User 5	Client approval is pending for the final design changes.	12-JAN-25
COM3	dip.	User 6	Minor issues reported during client review; will fix shortly.	14-JAN-25
COM4	T4	User 4	The database setup is complete, awaiting user feedback.	16-JAN-25
COM5	T5	User 5	Initial review of the student management app is positive.	18-JAN-25
COM6	T6	User 6	Library system testing started, working on the issues.	20-JAN-25
COM7	T7	User 7	Attendance registration system integration in progress.	22-JAN-25
COM8	T8	User 8	Fee management module requires UI adjustments for better clarity.	24-JAN-25
COM9	T9	User 9	Mobile app development meeting scheduled for next week.	26-JAN-25
COM10	T10	User 10	Feedback from the student management system testing was positive.	28-JAN-25
COM11	T11	User 11		01-FEB-25
			COMMENTID	
COM12	T12	User 12	Some adjustments needed in the library management UI.	03-FEB-25
COM13	T13	User 13	Attendance registration features are working as expected.	05-FEB-25

Figure 20 Insert into Comment Table

9.5. Insert into Project User Table:



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a connection named 'Data and web development' containing tables like Comment, MILESTONE, PROJECT, PROJECTUSER, Resource, SUBTASK, TASK, TASKPROJECTUSER, TASKRESOURCE, and USER_TABLE. Below this is the 'Reports' section with various report categories.

The main workspace has three tabs: 'Data and web development.sql', 'Welcome Page', and 'Data and web development'. The 'Data and web development' tab is active, showing an SQL Worksheet with the following code:

```

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU26', 'P-11', 'Completed', 'User 26');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU27', 'P-12', 'In Progress', 'User 27');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU28', 'P-13', 'Active', 'User 28');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU29', 'P-14', 'Completed', 'User 29');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU30', 'P-15', 'In Progress', 'User 30');

SELECT * FROM ProjectUser

```

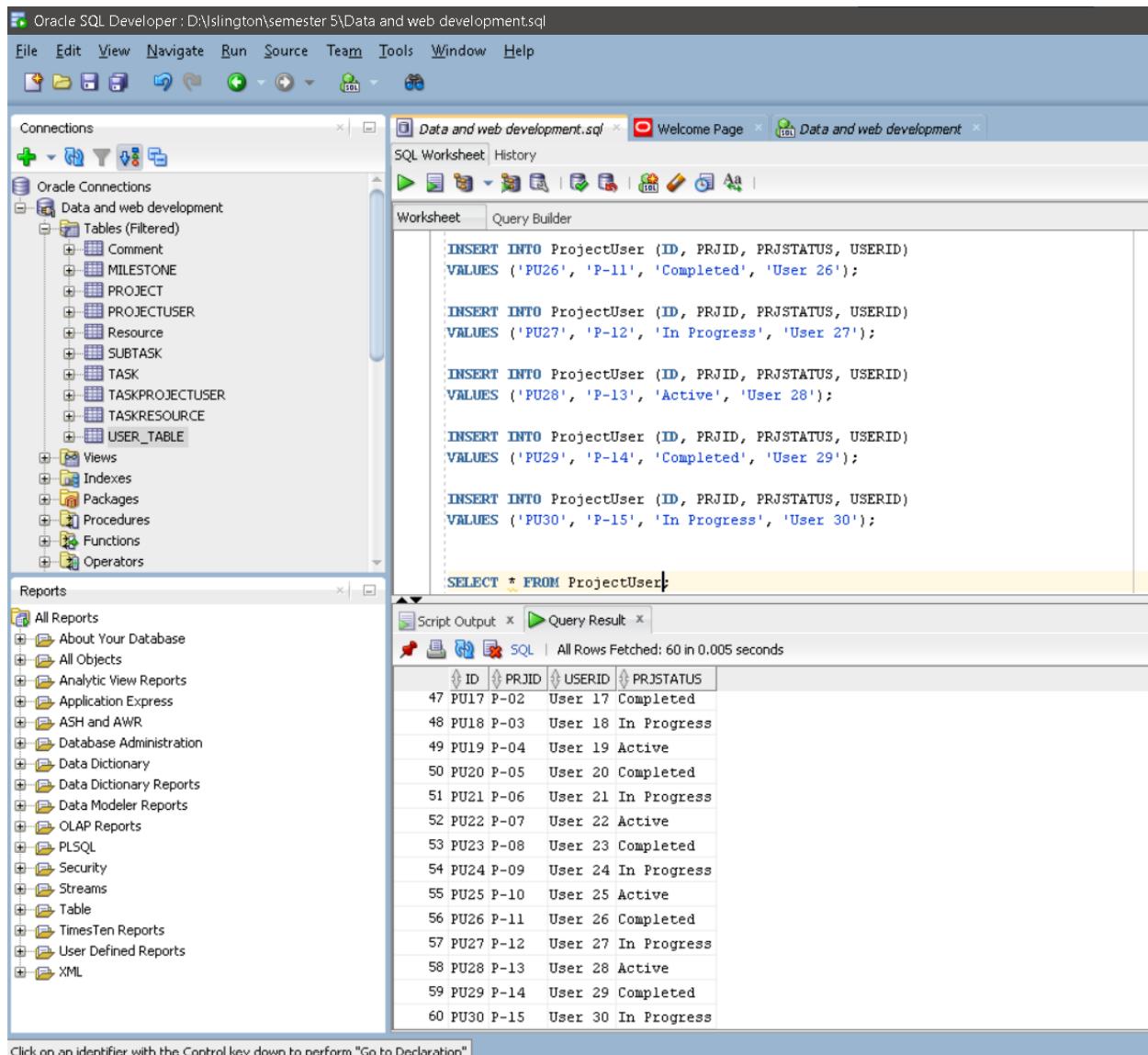
Below the worksheet is a 'Script Output' tab showing the results of the last query:

ID	PRJID	USERID	PRJSTATUS
47	PU17	User 17	Completed
48	PU18	User 18	In Progress
49	PU19	User 19	Active
50	PU20	User 20	Completed
51	PU21	User 21	In Progress
52	PU22	User 22	Active
53	PU23	User 23	Completed
54	PU24	User 24	In Progress
55	PU25	User 25	Active
56	PU26	User 26	Completed
57	PU27	User 27	In Progress
58	PU28	User 28	Active
59	PU29	User 29	Completed
60	PU30	User 30	In Progress

A status message at the bottom of the output tab says 'All Rows Fetched: 60 in 0.005 seconds'.

Figure 21 Insert into Project User Table

9.6. Insert into Resource Table:



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a connection named 'Data and web development' containing various tables like Comment, MILESTONE, PROJECT, etc. Below it is the 'Reports' section. The main workspace has two tabs: 'SQL Worksheet' and 'Query Builder'. The 'SQL Worksheet' tab contains the following SQL code:

```

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU26', 'P-11', 'Completed', 'User 26');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU27', 'P-12', 'In Progress', 'User 27');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU28', 'P-13', 'Active', 'User 28');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU29', 'P-14', 'Completed', 'User 29');

INSERT INTO ProjectUser (ID, PRJID, PRJSTATUS, USERID)
VALUES ('PU30', 'P-15', 'In Progress', 'User 30');

SELECT * FROM ProjectUser

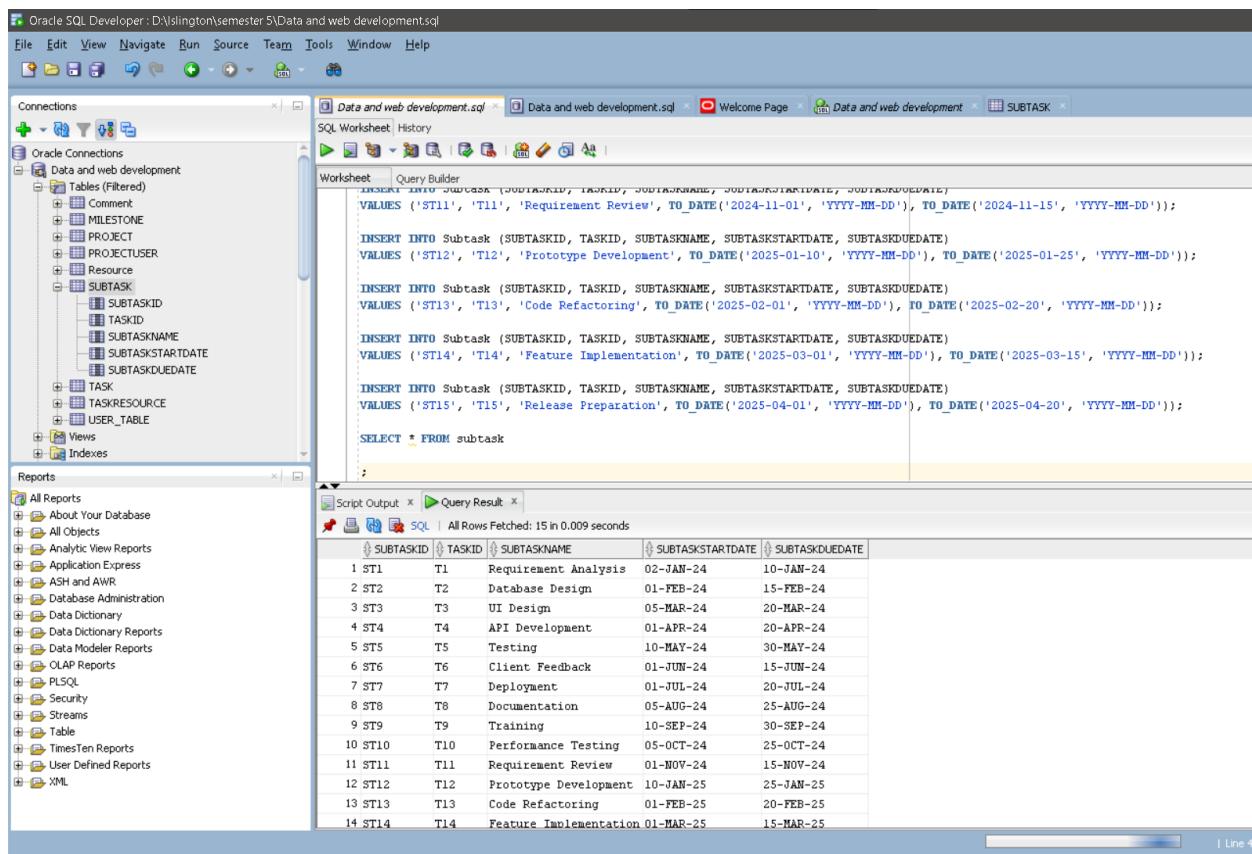
```

The 'Query Result' tab shows the output of the last query, displaying 10 rows of data:

ID	PRJID	USERID	PRJSTATUS
47	PU17	User 17	Completed
48	PU18	User 18	In Progress
49	PU19	User 19	Active
50	PU20	User 20	Completed
51	PU21	User 21	In Progress
52	PU22	User 22	Active
53	PU23	User 23	Completed
54	PU24	User 24	In Progress
55	PU25	User 25	Active
56	PU26	User 26	Completed
57	PU27	User 27	In Progress
58	PU28	User 28	Active
59	PU29	User 29	Completed
60	PU30	User 30	In Progress

Figure 22 Insert into Resource Table

9.7. Insert into Sub Task Table:



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the database schema with the 'Tables (Filtered)' section expanded, showing tables like MILESTONE, PROJECT, PROJECTUSER, Resource, SUBTASK, TASK, TASKRESOURCE, and USER_TABLE. The central workspace contains a SQL Worksheet tab with the following SQL code:

```

INSERT INTO Subtask (SUBTASKID, TASKID, SUBTASKNAME, SUBTASKSTARTDATE, SUBTASKDUEDATE)
VALUES ('ST11', 'T11', 'Requirement Review', TO_DATE('2024-11-01', 'YYYY-MM-DD'), TO_DATE('2024-11-15', 'YYYY-MM-DD'));

INSERT INTO Subtask (SUBTASKID, TASKID, SUBTASKNAME, SUBTASKSTARTDATE, SUBTASKDUEDATE)
VALUES ('ST12', 'T12', 'Prototype Development', TO_DATE('2025-01-10', 'YYYY-MM-DD'), TO_DATE('2025-01-25', 'YYYY-MM-DD'));

INSERT INTO Subtask (SUBTASKID, TASKID, SUBTASKNAME, SUBTASKSTARTDATE, SUBTASKDUEDATE)
VALUES ('ST13', 'T13', 'Code Refactoring', TO_DATE('2025-02-01', 'YYYY-MM-DD'), TO_DATE('2025-02-20', 'YYYY-MM-DD'));

INSERT INTO Subtask (SUBTASKID, TASKID, SUBTASKNAME, SUBTASKSTARTDATE, SUBTASKDUEDATE)
VALUES ('ST14', 'T14', 'Feature Implementation', TO_DATE('2025-03-01', 'YYYY-MM-DD'), TO_DATE('2025-03-15', 'YYYY-MM-DD'));

INSERT INTO Subtask (SUBTASKID, TASKID, SUBTASKNAME, SUBTASKSTARTDATE, SUBTASKDUEDATE)
VALUES ('ST15', 'T15', 'Release Preparation', TO_DATE('2025-04-01', 'YYYY-MM-DD'), TO_DATE('2025-04-20', 'YYYY-MM-DD'));

SELECT * FROM subtask

```

Below the worksheet is a Query Result tab showing the results of the SELECT query:

SUBTASKID	TASKID	SUBTASKNAME	SUBTASKSTARTDATE	SUBTASKDUEDATE
1 ST1	T1	Requirement Analysis	02-JAN-24	10-JAN-24
2 ST2	T2	Database Design	01-FEB-24	15-FEB-24
3 ST3	T3	UI Design	05-MAR-24	20-MAR-24
4 ST4	T4	API Development	01-APR-24	20-APR-24
5 ST5	T5	Testing	10-MAY-24	30-MAY-24
6 ST6	T6	Client Feedback	01-JUN-24	15-JUN-24
7 ST7	T7	Deployment	01-JUL-24	20-JUL-24
8 ST8	T8	Documentation	05-AUG-24	25-AUG-24
9 ST9	T9	Training	10-SEP-24	30-SEP-24
10 ST10	T10	Performance Testing	05-OCT-24	25-OCT-24
11 ST11	T11	Requirement Review	01-NOV-24	15-NOV-24
12 ST12	T12	Prototype Development	10-JAN-25	25-JAN-25
13 ST13	T13	Code Refactoring	01-FEB-25	20-FEB-25
14 ST14	T14	Feature Implementation	01-MAR-25	15-MAR-25

Figure 23 Insert into Sub Task Table

9.8. Insert into Resource Table:

```

File Edit View Navigate Run Source Team Tools Window Help
Connections Data and web development.sql Data and web development.sql Welcome Page Data and web development TASKRESOURCE
Data and web development
Tables (Filtered)
Comment MILESTONE PROJECT PROJECTUSER Resource SUBTASK TASK
TASKRESOURCE
TASKRESOURCEID TASKID RESOURCEID USER_TABLE
Views Indexes Packages Procedures
Reports All Reports About Your Database All Objects Analytic View Reports Application Express ASH and AWR Database Administration Data Dictionary Data Dictionary Reports Data Modeler Reports OLAP Reports PLSQL Security Streams Table TimesTen Reports User Defined Reports XML
Data and web development.sql | Data and web development.sql | Welcome Page | Data and web development | TASKRESOURCE
SQL Worksheet History
Worksheet Query Builder
VALUES ('TR26', 'T22', 'R11');

VALUES ('TR27', 'T23', 'R12');

VALUES ('TR28', 'T24', 'R13');

VALUES ('TR29', 'T25', 'R14');

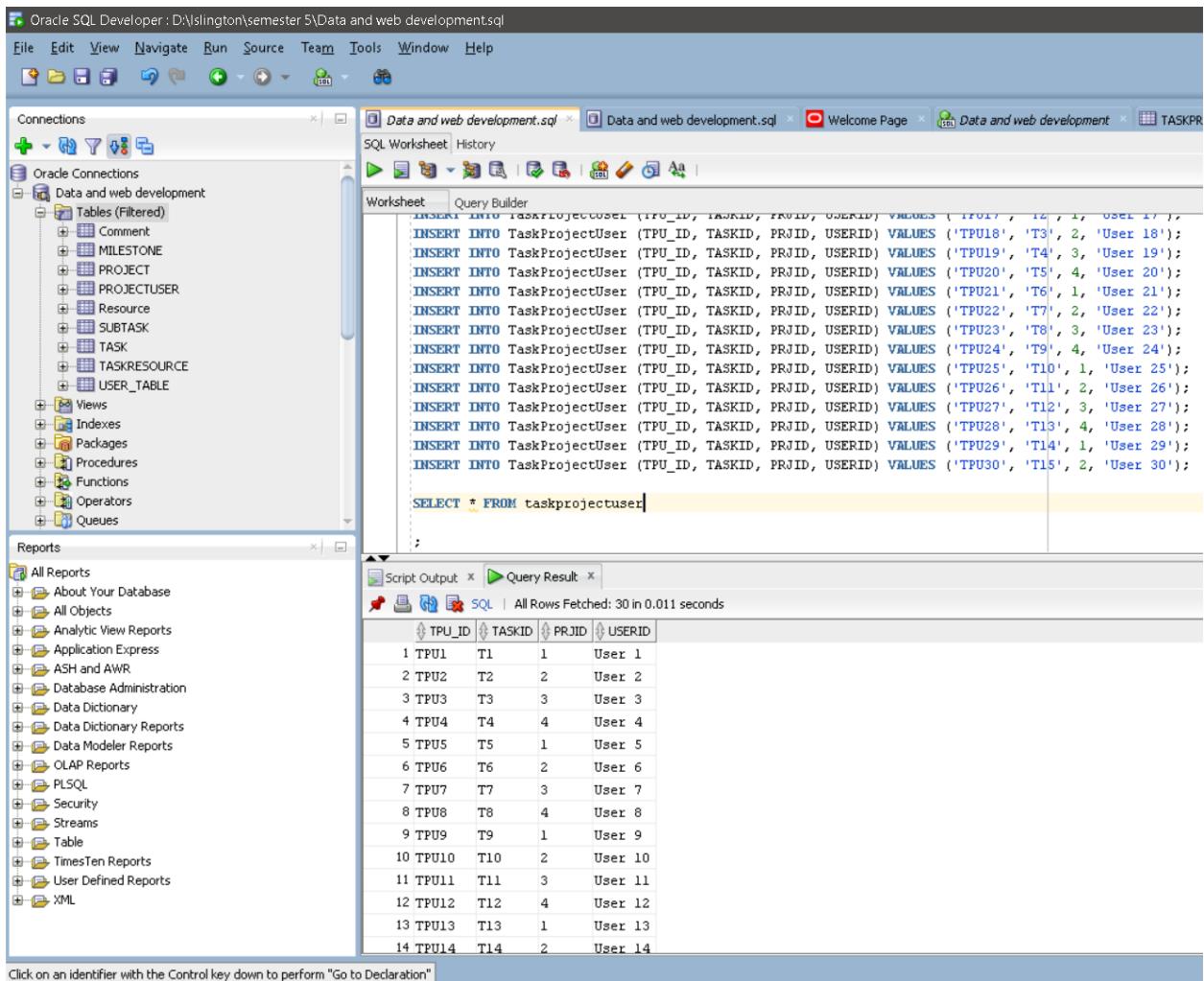
VALUES ('TR30', 'T26', 'R15');
select * from taskresource;

```

TASKRESOUR	TASKID	RESOURCEID
TR18	T15	R3
TR19	T15	R4
TR20	T16	R5
TR21	T17	R6
TR22	T18	R7
TR23	T19	R8
TR24	T20	R9
TR25	T21	R10
TR26	T22	R11
TR27	T23	R12
TR28	T24	R13
TR29	T25	R14

Figure 24 Insert into Resource Table

9.9. Insert into Task Project User Table:



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes an 'Oracle Connections' node and a 'Data and web development' node under it. The 'Tables (Filtered)' section of the tree lists several tables such as Comment, MILESTONE, PROJECT, PROJECTUSER, Resource, SUBTASK, TASK, TASKRESOURCE, and USER_TABLE. Below this is a 'Views', 'Indexes', 'Packages', 'Procedures', 'Functions', 'Operators', and 'Queues' section. The bottom-left sidebar shows a 'Reports' section with various report categories like All Reports, Application Express, ASH and AWR, Database Administration, Data Dictionary, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, PLSQL, Security, Streams, Table, TimesTen Reports, User Defined Reports, and XML.

The main workspace contains a 'Worksheet' tab where the following SQL code is written:

```

INSERT INTO taskprojectuser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU1', 'T1', 1, 'User 1');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU18', 'T3', 2, 'User 18');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU19', 'T4', 3, 'User 19');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU20', 'T5', 4, 'User 20');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU21', 'T6', 1, 'User 21');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU22', 'T7', 2, 'User 22');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU23', 'T8', 3, 'User 23');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU24', 'T9', 4, 'User 24');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU25', 'T10', 1, 'User 25');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU26', 'T11', 2, 'User 26');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU27', 'T12', 3, 'User 27');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU28', 'T13', 4, 'User 28');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU29', 'T14', 1, 'User 29');
INSERT INTO TaskProjectUser (TPU_ID, TASKID, PRJID, USERID) VALUES ('TPU30', 'T15', 2, 'User 30');

SELECT * FROM taskprojectuser
;

```

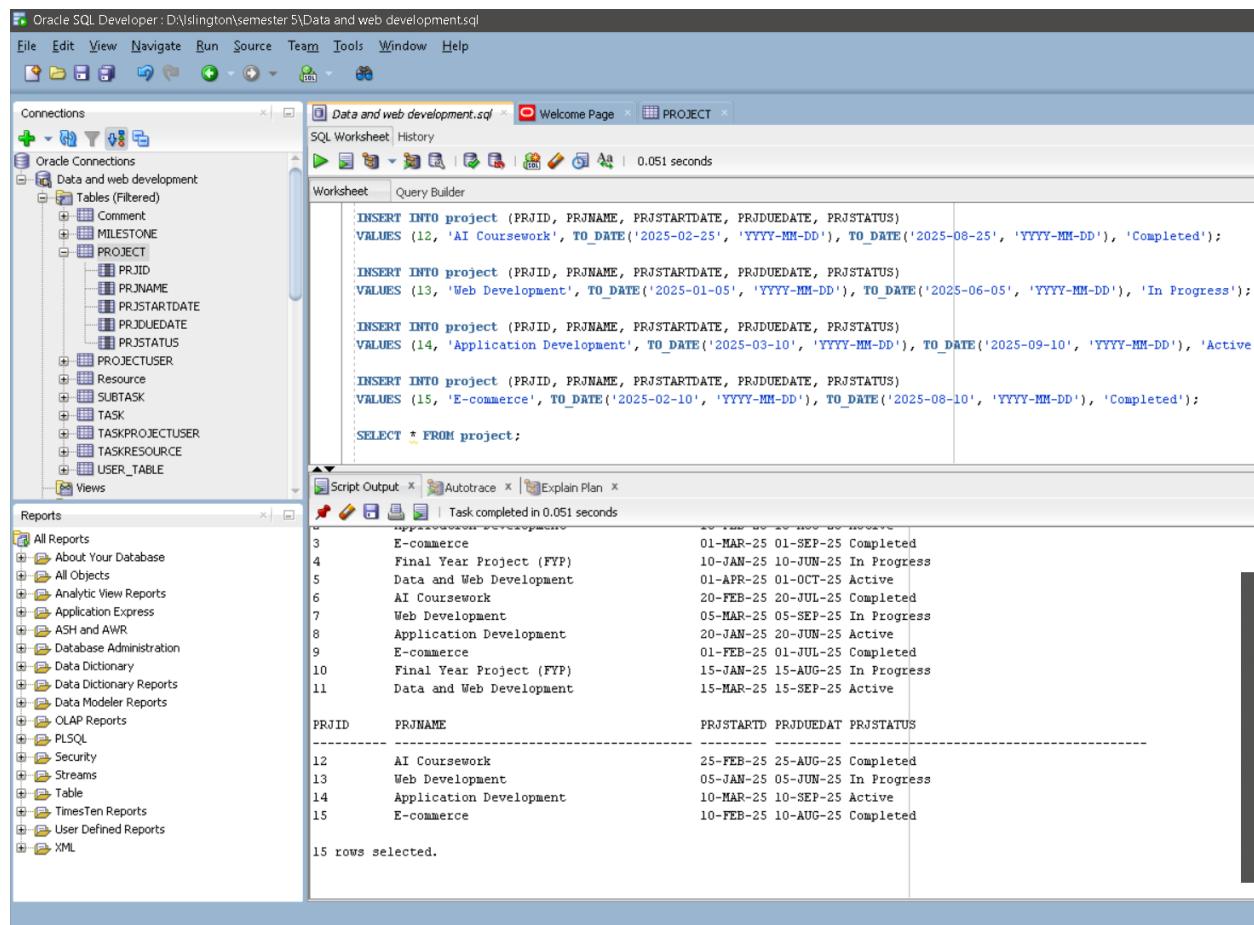
Below the worksheet is a 'Script Output' tab showing the results of the query:

TPU_ID	TASKID	PRJID	USERID
1 TPU1	T1	1	User 1
2 TPU2	T2	2	User 2
3 TPU3	T3	3	User 3
4 TPU4	T4	4	User 4
5 TPU5	T5	1	User 5
6 TPU6	T6	2	User 6
7 TPU7	T7	3	User 7
8 TPU8	T8	4	User 8
9 TPU9	T9	1	User 9
10 TPU10	T10	2	User 10
11 TPU11	T11	3	User 11
12 TPU12	T12	4	User 12
13 TPU13	T13	1	User 13
14 TPU14	T14	2	User 14

A message at the bottom of the interface says: "Click on an identifier with the Control key down to perform 'Go to Declaration'".

Figure 25 Insert into Task Project User Table

9.10. Insert into Project Table:



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes 'Oracle Connections' and a 'Data and web development' database connection. Under this connection, the 'Tables (Filtered)' section shows tables like 'Comment', 'MILESTONE', and 'PROJECT'. The 'PROJECT' table is expanded, showing columns: PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, PRJSTATUS, PRJSTARTD, PRJDUEDAT, and PRJSTATUS. The 'Views' and 'Reports' sections are also visible.

The main workspace contains a 'SQL Worksheet' tab with the following SQL code:

```

INSERT INTO project (PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, PRJSTATUS)
VALUES (12, 'AI Coursework', TO_DATE('2025-02-25', 'YYYY-MM-DD'), TO_DATE('2025-08-25', 'YYYY-MM-DD'), 'Completed');

INSERT INTO project (PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, PRJSTATUS)
VALUES (13, 'Web Development', TO_DATE('2025-01-05', 'YYYY-MM-DD'), TO_DATE('2025-06-05', 'YYYY-MM-DD'), 'In Progress');

INSERT INTO project (PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, PRJSTATUS)
VALUES (14, 'Application Development', TO_DATE('2025-03-10', 'YYYY-MM-DD'), TO_DATE('2025-09-10', 'YYYY-MM-DD'), 'Active');

INSERT INTO project (PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, PRJSTATUS)
VALUES (15, 'E-commerce', TO_DATE('2025-02-10', 'YYYY-MM-DD'), TO_DATE('2025-08-10', 'YYYY-MM-DD'), 'Completed');

SELECT * FROM project;

```

The 'Script Output' tab shows the results of the query:

PRJID	PRJNAME	PRJSTARTD	PRJDUEDAT	PRJSTATUS
3	E-commerce	01-MAR-25	01-SEP-25	Completed
4	Final Year Project (FYP)	10-JAN-25	10-JUN-25	In Progress
5	Data and Web Development	01-APR-25	01-OCT-25	Active
6	AI Coursework	20-FEB-25	20-JUL-25	Completed
7	Web Development	05-MAR-25	05-SEP-25	In Progress
8	Application Development	20-JAN-25	20-JUN-25	Active
9	E-commerce	01-FEB-25	01-JUL-25	Completed
10	Final Year Project (FYP)	15-JAN-25	15-AUG-25	In Progress
11	Data and Web Development	15-MAR-25	15-SEP-25	Active
12	AI Coursework	25-FEB-25	25-AUG-25	Completed
13	Web Development	05-JAN-25	05-JUN-25	In Progress
14	Application Development	10-MAR-25	10-SEP-25	Active
15	E-commerce	10-FEB-25	10-AUG-25	Completed

15 rows selected.

Figure 26 Insert into Project Table

10. Select Statement

10.1. Select Statement for User Table:

```

INSERT INTO User_Table (USERID, USERNAME, USEREMAIL, USERCONTACT) VALUES ('User 15', 'Raja Shakya', 'raja.shakya@example.com', '9845678901');
SELECT * FROM User_Table;

```

The screenshot shows the Oracle SQL Developer interface. On the left, the object tree displays 'USER_TABLE' under 'All Objects'. The central area has two tabs: 'Script Output' and 'Query Result'. The 'Query Result' tab shows the output of the executed SQL statements. The results are as follows:

USERID	USERNAME	USEREMAIL	USERCONTACT
1 User 1	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
2 User 2	Sampanna Piya	sampanna.piya@example.com	9812345678
3 User 3	Hari Piya	hari.piya@example.com	9808765432
4 User 4	Sita Shajyam	sita.shajyam@example.com	9823456789
5 User 5	Ritu Maharjan	ritu.maharjan@example.com	9834567890
6 User 6	Machakaji Maharjan	machakaji.maharjan@example.com	9865432101
7 User 7	Raja Shakya	raja.shakya@example.com	9845678901
8 User 8	Densha Maharjan	densha.maharjan@example.com	9854321098
9 User 9	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
10 User 10	Sampanna Piya	sampanna.piya@example.com	9812345678
11 User 11	Hari Piya	hari.piya@example.com	9808765432
12 User 12	Sita Shajyam	sita.shajyam@example.com	9823456789
13 User 13	Ritu Maharjan	ritu.maharjan@example.com	9834567890
14 User 14	Machakaji Maharjan	machakaji.maharjan@example.com	9865432101

Figure 27 Select Statement for User Table

10.2. Select Statement for Task Table:

```

INSERT INTO Task (TaskID, TaskName, TaskStartDate, TaskDueDate) VALUES ('T15', 'Mobile App Development', TO_DATE('2025-04-01', 'YYYY-MM-DD'), TO_DATE('2025-05-20', 'YYYY-MM-DD'));
SELECT * FROM Task;

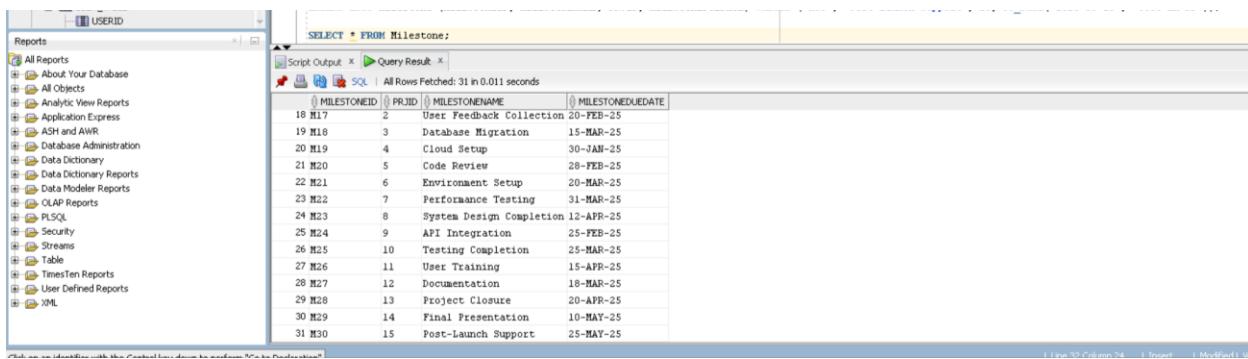
```

The screenshot shows the Oracle SQL Developer interface. On the left, the object tree displays 'TASKPROJECTUSER', 'TASKRESOURCE', and 'USER_TABLE' under 'All Objects'. The central area has two tabs: 'Script Output' and 'Query Result'. The 'Query Result' tab shows the output of the executed SQL statements. The results are as follows:

TASKID	TASKNAME	TASKSTARTDATE	TASKDUEDATE	TASKSTATUS
1 T1	Student Management	01-JAN-24	20-FEB-24	(null)
2 T2	Library Management	01-FEB-24	15-MAR-24	(null)
3 T3	Attendance Registration	10-MAR-24	10-APR-24	(null)
4 T4	Fee Management	15-APR-24	25-MAY-24	(null)
5 T5	Mobile App Development	01-MAY-24	20-JUN-24	(null)
6 T6	Student Management	05-JUN-24	15-JUL-24	(null)
7 T7	Library Management	10-JUL-24	20-AUG-24	(null)
8 T8	Attendance Registration	15-AUG-24	25-SEP-24	(null)
9 T9	Fee Management	01-SEP-24	15-OCT-24	(null)
10 T10	Mobile App Development	05-OCT-24	30-NOV-24	(null)
11 T11	Student Management	01-DEC-24	15-JAN-25	(null)
12 T12	Library Management	01-JAN-25	10-FEB-25	(null)
13 T13	Attendance Registration	15-FEB-25	20-MAR-25	(null)
14 T14	Fee Management	05-MAR-25	10-APR-25	(null)
15 T15	Mobile App Development	01-APR-25	20-MAY-25	(null)

Figure 28 Select Statement for Task Table

10.3. Select Statement for Milestone Table:

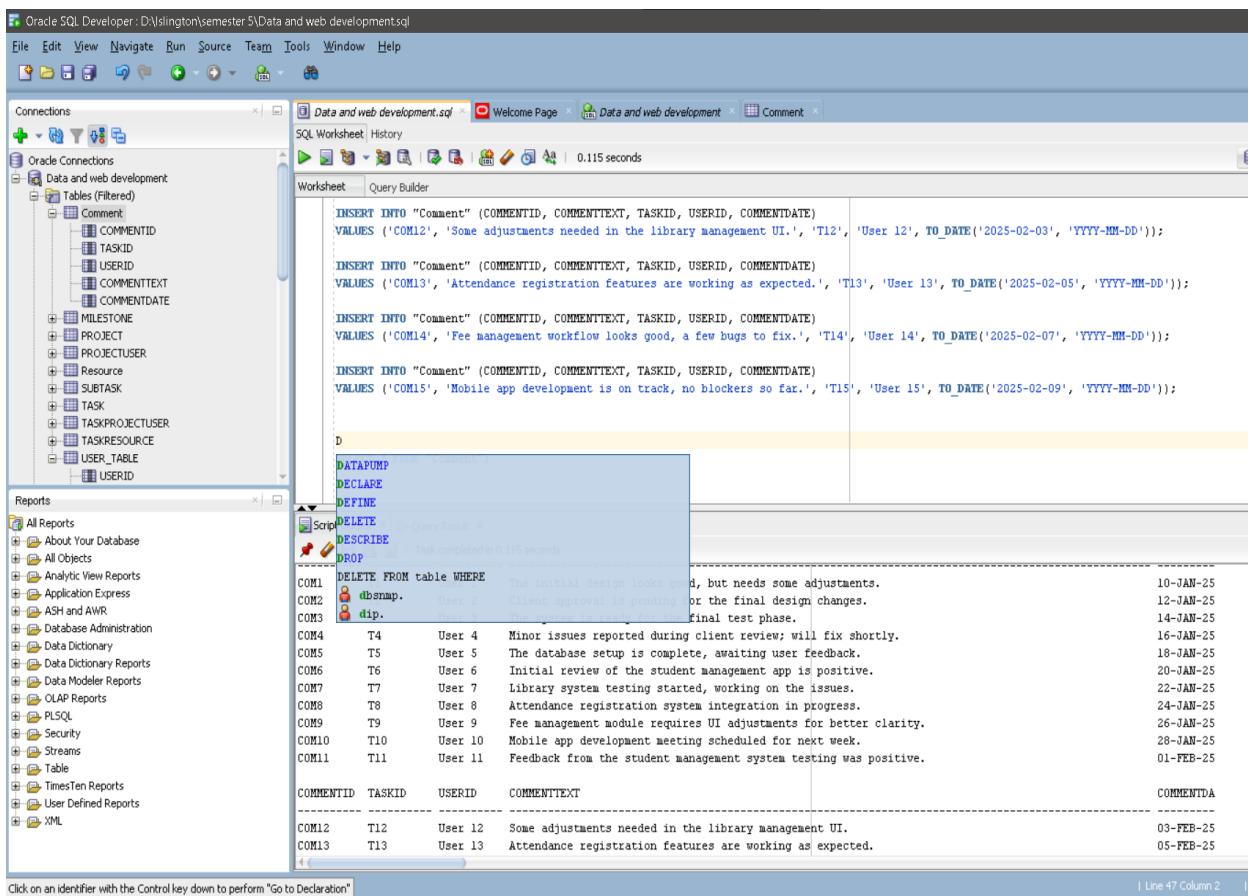


The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' sidebar shows a connection to 'Data and web development'. The 'Tables' section under this connection lists 'Comment', 'Milestone', 'PROJECT', 'Resource', 'SUBTASK', 'TASK', 'TASKPROJECTUSER', 'TASKRESOURCE', 'USER_TABLE', and 'USERID'. The 'Reports' sidebar on the far left contains various database-related reports. The main workspace displays the results of a query: 'SELECT * FROM Milestone;'. The results are shown in a table with columns: MILESTONEID, PRJID, MILESTONENAME, and MILESTONEUEDATE. The data includes 15 rows of milestones for project 2, ranging from 'User Feedback Collection' to 'Post-Launch Support', with due dates from '20-FEB-25' to '25-MAY-25'.

MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
18 M17	2	User Feedback Collection	20-FEB-25
19 M18	3	Database Migration	15-MAR-25
20 M19	4	Cloud Setup	30-JAN-25
21 M20	5	Code Review	28-FEB-25
22 M21	6	Environment Setup	20-MAR-25
23 M22	7	Performance Testing	31-MAR-25
24 M23	8	System Design Completion	12-APR-25
25 M24	9	API Integration	25-FEB-25
26 M25	10	Testing Completion	25-MAR-25
27 M26	11	User Training	15-APR-25
28 M27	12	Documentation	18-MAR-25
29 M28	13	Project Closure	20-APR-25
30 M29	14	Final Presentation	10-MAY-25
31 M30	15	Post-Launch Support	25-MAY-25

Figure 29 Select Statement for Milestone Table

10.4. Select Statement for Comment Table:

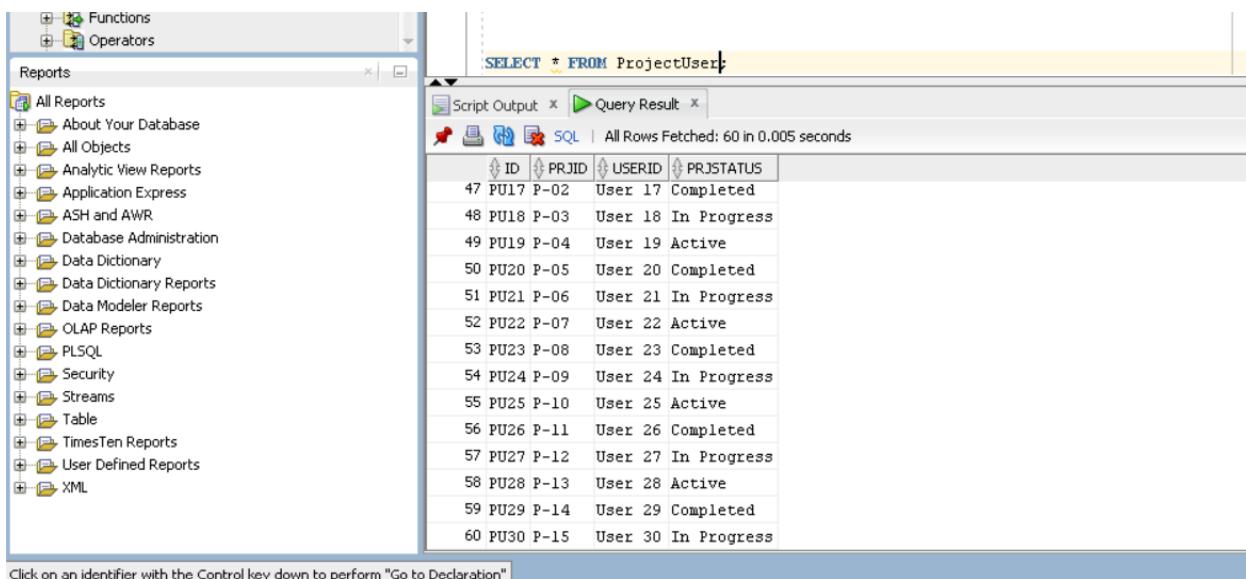


The screenshot shows the Oracle SQL Developer interface. The 'Connections' sidebar shows a connection to 'Data and web development'. The 'Tables' section under this connection lists 'Comment', 'Milestone', 'PROJECT', 'Resource', 'SUBTASK', 'TASK', 'TASKPROJECTUSER', 'TASKRESOURCE', 'USER_TABLE', and 'USERID'. The 'Reports' sidebar on the far left contains various database-related reports. The main workspace displays the results of a query: 'SELECT * FROM Comment;'. The results are shown in a table with columns: COMMENTID, COMMENTTEXT, TASKID, USERID, and COMMENTDATE. The data includes 15 rows of comments from users 12 through 16, detailing various software development tasks and their progress. The comments range from 'Some adjustments needed in the library management UI.' to 'Mobile app development is on track, no blockers so far.' with dates from '2025-02-03' to '2025-02-09'.

COMMENTID	COMMENTTEXT	TASKID	USERID	COMMENTDATE
COM12	'Some adjustments needed in the library management UI.'	T12	User 12	TO_DATE('2025-02-03', 'YYYY-MM-DD')
COM13	'Attendance registration features are working as expected.'	T13	User 13	TO_DATE('2025-02-05', 'YYYY-MM-DD')
COM14	'Fee management workflow looks good, a few bugs to fix.'	T14	User 14	TO_DATE('2025-02-07', 'YYYY-MM-DD')
COM15	'Mobile app development is on track, no blockers so far.'	T15	User 15	TO_DATE('2025-02-09', 'YYYY-MM-DD')
COM1	'Initial design looks good, but needs some adjustments.'			10-JAN-25
COM2	'Client approval is pending for the final design changes.'			12-JAN-25
COM3	'Feedback from the final test phase.'			14-JAN-25
COM4	'Minor issues reported during client review; will fix shortly.'			16-JAN-25
COM5	'The database setup is complete, awaiting user feedback.'			18-JAN-25
COM6	'Initial review of the student management app is positive.'			20-JAN-25
COM7	'Library system testing started, working on the issues.'			22-JAN-25
COM8	'Attendance registration system integration in progress.'			24-JAN-25
COM9	'Fee management module requires UI adjustments for better clarity.'			26-JAN-25
COM10	'Mobile app development meeting scheduled for next week.'			28-JAN-25
COM11	'Feedback from the student management system testing was positive.'			01-FEB-25
COM16	'Feedback from the final test phase.'			03-FEB-25
COM17	'Mobile app development is on track, no blockers so far.'			05-FEB-25

Figure 30 Select Statement for Comment Table

10.5. Select Statement for Project User Table:



The screenshot shows the Oracle SQL Developer interface. On the left, there's a tree view under 'Reports' containing various database reports. The main area displays the results of a SQL query:

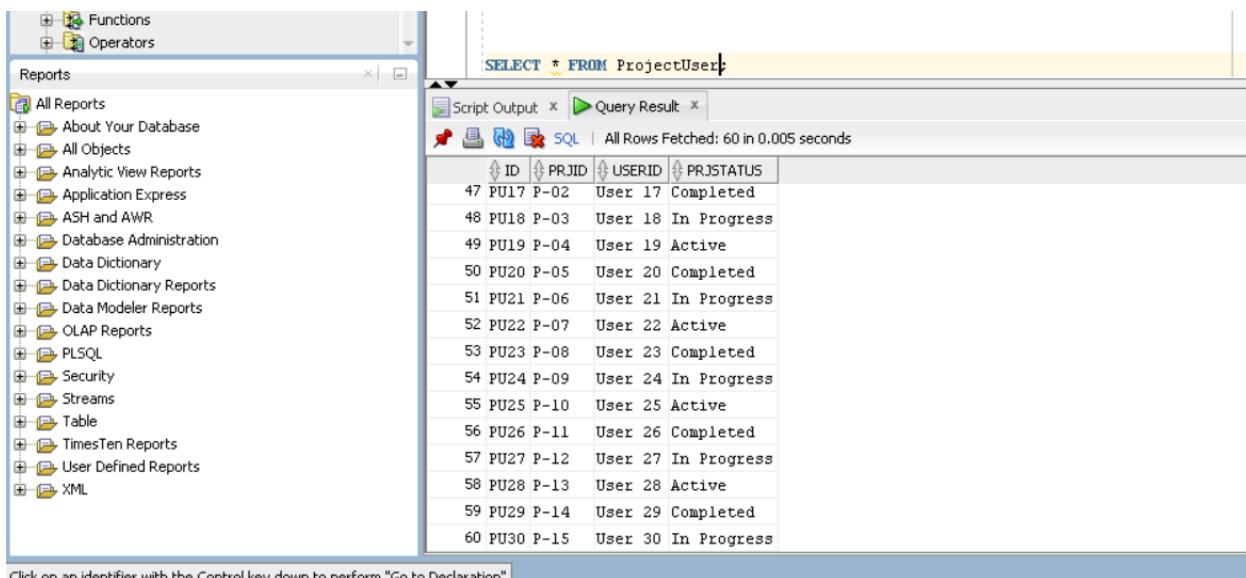
```
SELECT * FROM ProjectUser;
```

The results are shown in a table:

ID	PRJID	USERID	PRJSTATUS
47	PU17 P-02	User 17	Completed
48	PU18 P-03	User 18	In Progress
49	PU19 P-04	User 19	Active
50	PU20 P-05	User 20	Completed
51	PU21 P-06	User 21	In Progress
52	PU22 P-07	User 22	Active
53	PU23 P-08	User 23	Completed
54	PU24 P-09	User 24	In Progress
55	PU25 P-10	User 25	Active
56	PU26 P-11	User 26	Completed
57	PU27 P-12	User 27	In Progress
58	PU28 P-13	User 28	Active
59	PU29 P-14	User 29	Completed
60	PU30 P-15	User 30	In Progress

Figure 31 Select Statement for Project User Table

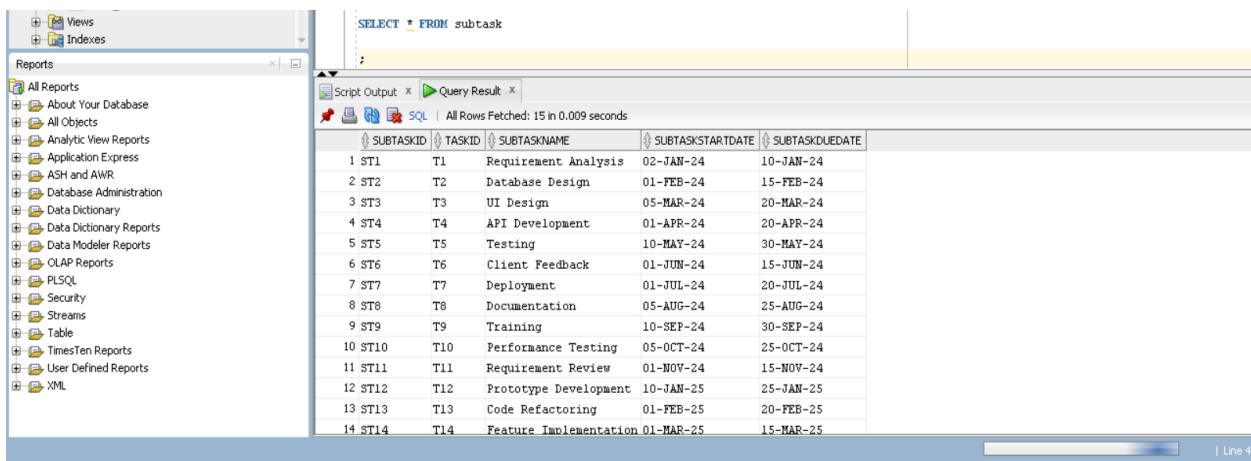
9.6. Select Statement for Project User Table:



This screenshot is identical to Figure 31, showing the same Oracle SQL Developer interface and the results of the same SELECT query on the ProjectUser table.

Figure 32 Select Statement for Resource Table

10.7. Select Statement for Sub Task Table:



The screenshot shows the Oracle SQL Developer interface. On the left, the Reports sidebar is open, showing various report categories like All Reports, About Your Database, and Application Express. In the center, a query editor window displays the following SQL statement:

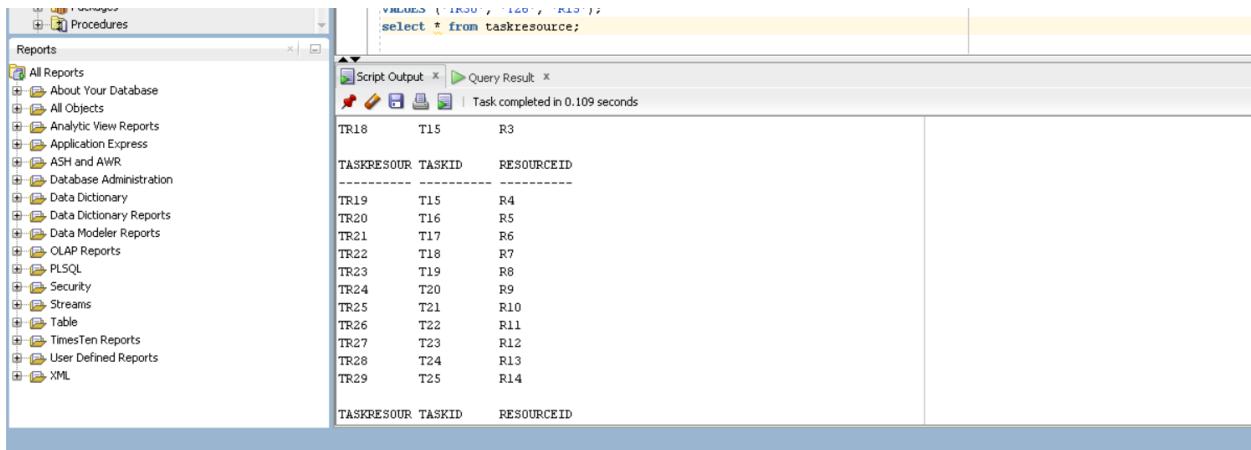
```
SELECT * FROM subtask
```

Below the statement is a table titled "Query Result" showing 14 rows of data from the subtask table. The columns are labeled: SUBTASKID, TASKID, SUBTASKNAME, SUBTASKSTARTDATE, and SUBTASKDUEDATE. The data includes tasks such as Requirement Analysis, Database Design, UI Design, API Development, Testing, Client Feedback, Deployment, Documentation, Training, Performance Testing, Requirement Review, Prototype Development, Code Refactoring, and Feature Implementation.

SUBTASKID	TASKID	SUBTASKNAME	SUBTASKSTARTDATE	SUBTASKDUEDATE
1	T1	Requirement Analysis	02-JAN-24	10-JAN-24
2	T2	Database Design	01-FEB-24	15-FEB-24
3	T3	UI Design	05-MAR-24	20-MAR-24
4	T4	API Development	01-APR-24	20-APR-24
5	T5	Testing	10-MAY-24	30-MAY-24
6	T6	Client Feedback	01-JUN-24	15-JUN-24
7	T7	Deployment	01-JUL-24	20-JUL-24
8	T8	Documentation	05-AUG-24	25-AUG-24
9	T9	Training	10-SEP-24	30-SEP-24
10	T10	Performance Testing	05-OCT-24	25-OCT-24
11	T11	Requirement Review	01-NOV-24	15-NOV-24
12	T12	Prototype Development	10-JAN-25	25-JAN-25
13	T13	Code Refactoring	01-FEB-25	20-FEB-25
14	T14	Feature Implementation	01-MAR-25	15-MAR-25

Figure 33 Select Statement for Sub Task Table

10.8. Select Statement for Task Resource Table:



The screenshot shows the Oracle SQL Developer interface. On the left, the Reports sidebar is open. In the center, a query editor window displays the following SQL statement:

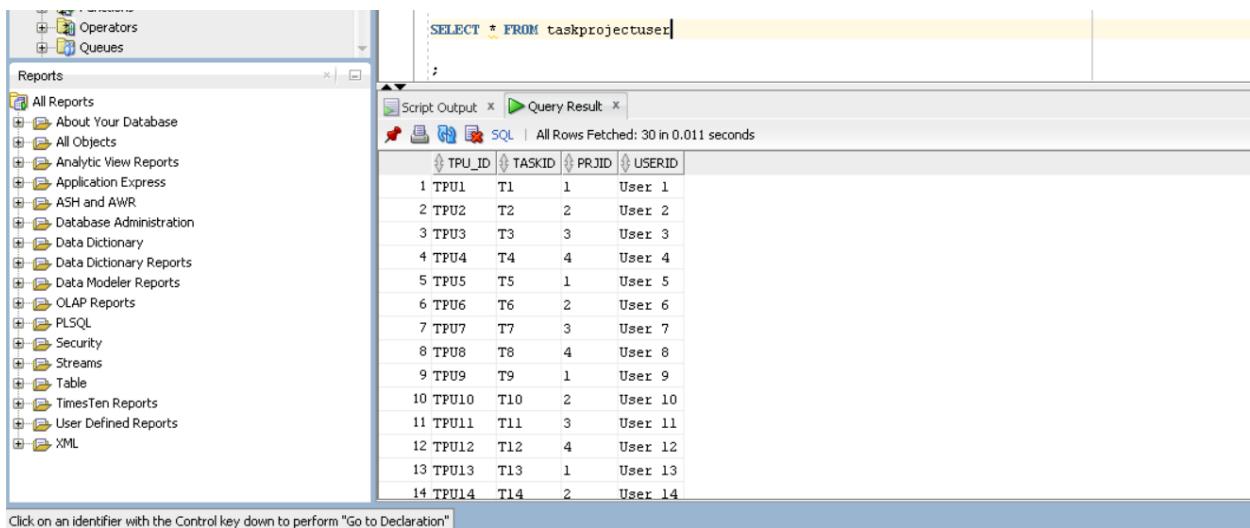
```
VALUES ('1000', '100', '100');
select * from taskresource;
```

Below the statement is a table titled "Query Result" showing 29 rows of data from the taskresource table. The columns are labeled: TASKRESOUR, TASKID, and RESOURCEID. The data includes resource assignments for tasks T15 through T29, with resource IDs ranging from R4 to R14.

TASKRESOUR	TASKID	RESOURCEID
TR18	T15	R3
TR19	T15	R4
TR20	T16	R5
TR21	T17	R6
TR22	T18	R7
TR23	T19	R8
TR24	T20	R9
TR25	T21	R10
TR26	T22	R11
TR27	T23	R12
TR28	T24	R13
TR29	T25	R14

Figure 34 Select Statement for Task Resource Table

10.9. Select Statement for Task Project User Table:



The screenshot shows the Oracle SQL Developer interface. On the left, the object browser displays various database objects like Operators, Queues, Reports, and Application Express. The central area contains a query editor with the following code:

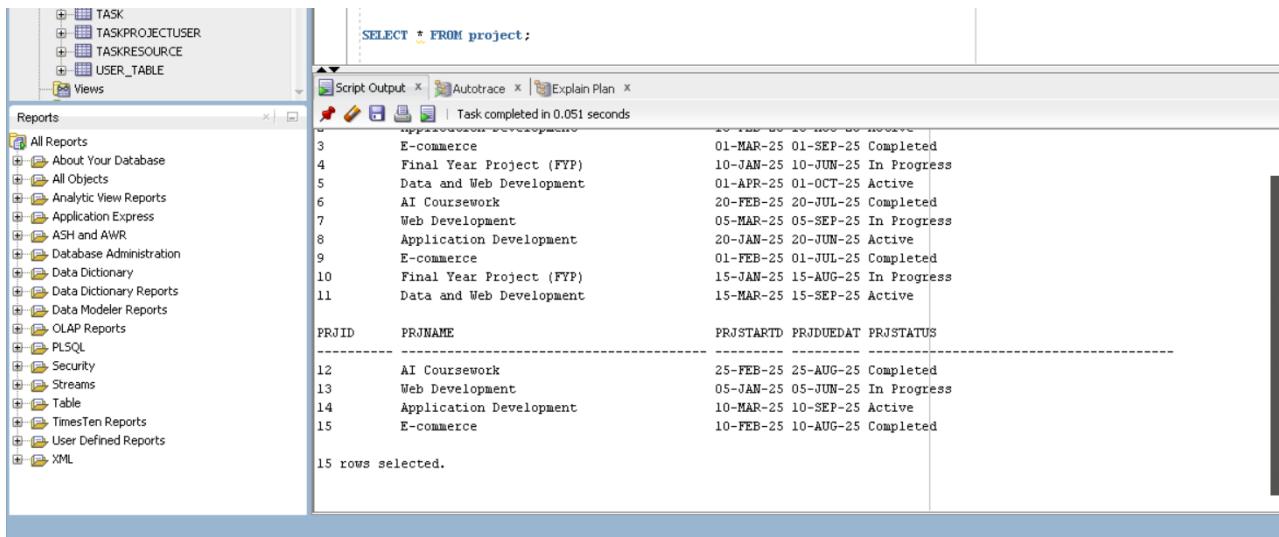
```
SELECT * FROM taskprojectuser;
```

Below the query editor is a results tab labeled "Query Result" which shows the output of the query:

TPU_ID	TASKID	PRJID	USERID
1	TPU1	T1	User 1
2	TPU2	T2	User 2
3	TPU3	T3	User 3
4	TPU4	T4	User 4
5	TPU5	T5	User 5
6	TPU6	T6	User 6
7	TPU7	T7	User 7
8	TPU8	T8	User 8
9	TPU9	T9	User 9
10	TPU10	T10	User 10
11	TPU11	T11	User 11
12	TPU12	T12	User 12
13	TPU13	T13	User 13
14	TPU14	T14	User 14

Figure 35 Select Statement for Task Project User Table

10.10. Select Statement for Project Table:



The screenshot shows the Oracle SQL Developer interface. On the left, the object browser displays objects such as TASK, TASKPROJECTUSER, TASKRESOURCE, and USER_TABLE. The central area contains a query editor with the following code:

```
SELECT * FROM project;
```

Below the query editor is a results tab labeled "Query Result" which shows the output of the query:

PRJID	PRJNAME	PRJSTARTD	PRJDUEDAT	PRJSTATUS
3	E-commerce	01-MAR-25	01-SEP-25	Completed
4	Final Year Project (FYP)	10-JAN-25	10-JUN-25	In Progress
5	Data and Web Development	01-APR-25	01-OCT-25	Active
6	AI Coursework	20-FEB-25	20-JUL-25	Completed
7	Web Development	05-MAR-25	05-SEP-25	In Progress
8	Application Development	20-JAN-25	20-JUN-25	Active
9	E-commerce	01-FEB-25	01-JUL-25	Completed
10	Final Year Project (FYP)	15-JAN-25	15-AUG-25	In Progress
11	Data and Web Development	15-MAR-25	15-SEP-25	Active
12	AI Coursework	25-FEB-25	25-AUG-25	Completed
13	Web Development	05-JAN-25	05-JUN-25	In Progress
14	Application Development	10-MAR-25	10-SEP-25	Active
15	E-commerce	10-FEB-25	10-AUG-25	Completed

15 rows selected.

Figure 36 Select Statement for Project Table

11. Forms

11.1. Dashboard Page

Screenshot of Dashboard Page

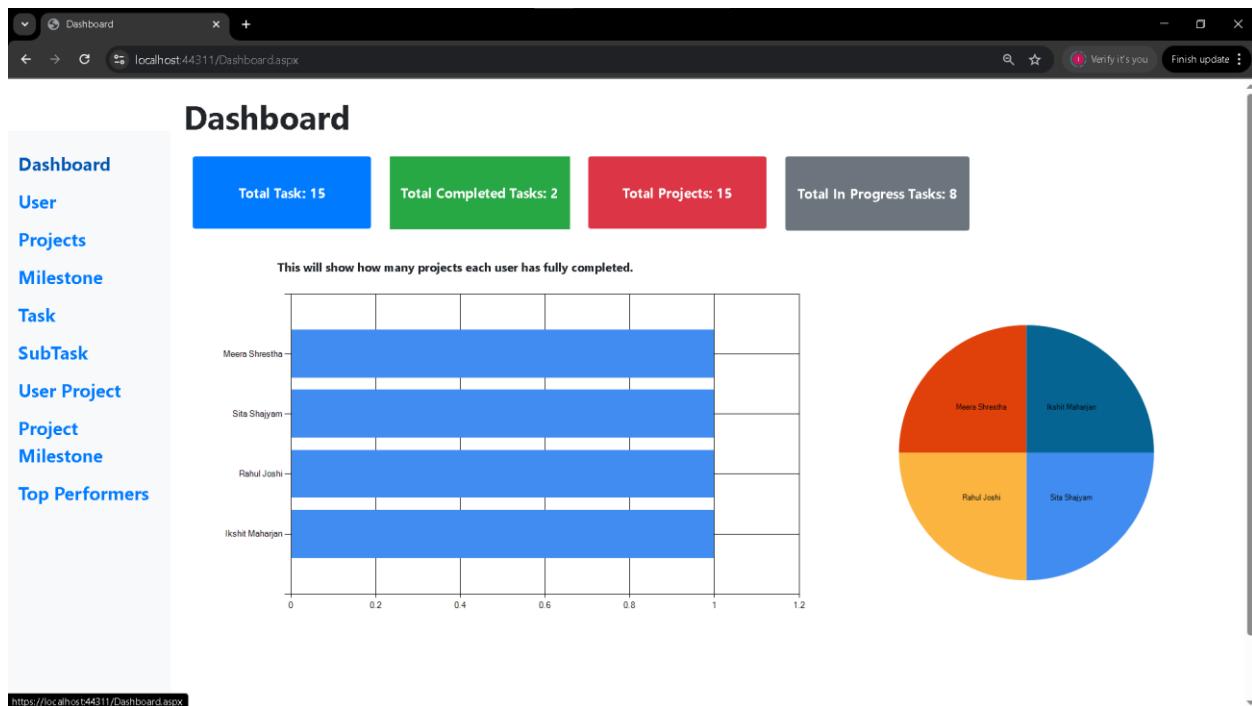


Figure 37 Screenshot of Dashboard Page

11.2. Complex Form and Queries

11.2.1. User Project:

The screenshot shows a web browser window with the title 'User Project'. The URL in the address bar is 'localhost:44311/UserProject.aspx'. The page has a sidebar on the left with a navigation menu:

- Dashboard**
- User**
- Projects**
- Milestone**
- Task**
- SubTask**
- User Project** (This item is highlighted in blue)
- Project**
- Milestone**
- Top Performers**

On the right side, there is a dropdown menu showing 'Ikshit Mahaasrjan'. Below it is a table with the following data:

USERID	USERNAME	USEREMAIL	USERCONTACT	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
User 1	Ikshit Mahaasrjan	ikshit.maharjan@example.com	9841234567	1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	In Progress

At the bottom of the page, the URL 'https://localhost:44311/UserProject.aspx' is visible.

Figure 38 User Project Complex Form

SQL Query:

```
SELECT u.USERID, u.USERNAME, u.USEREMAIL, u.USERCONTACT, p.PRJID,
p.PRJNAME, p.PRJSTARTDATE, p.PRJDUEDATE, p.PRJSTATUS FROM
USER_TABLE u JOIN TASKPROJECTUSER tpu ON u.USERID = tpu.USERID JOIN
PROJECT p ON tpu.PRJID = p.PRJID WHERE u.USERID = :UserID
```

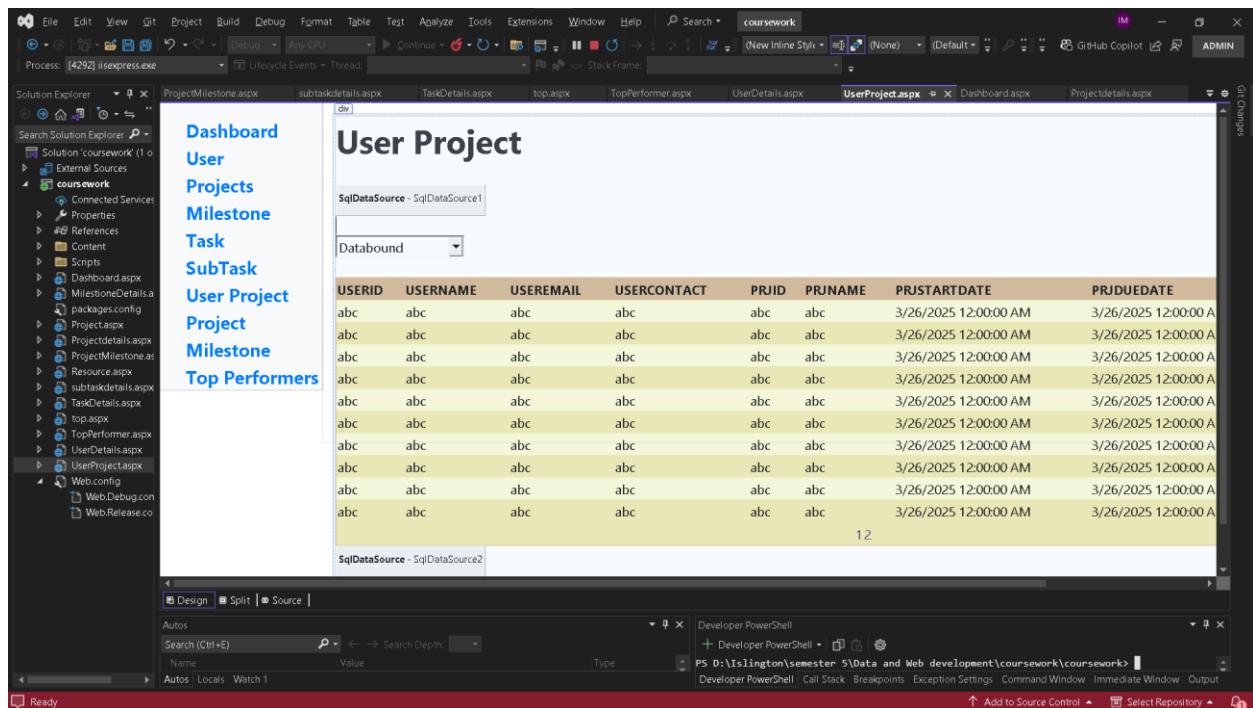


Figure 39 User Project Web Form

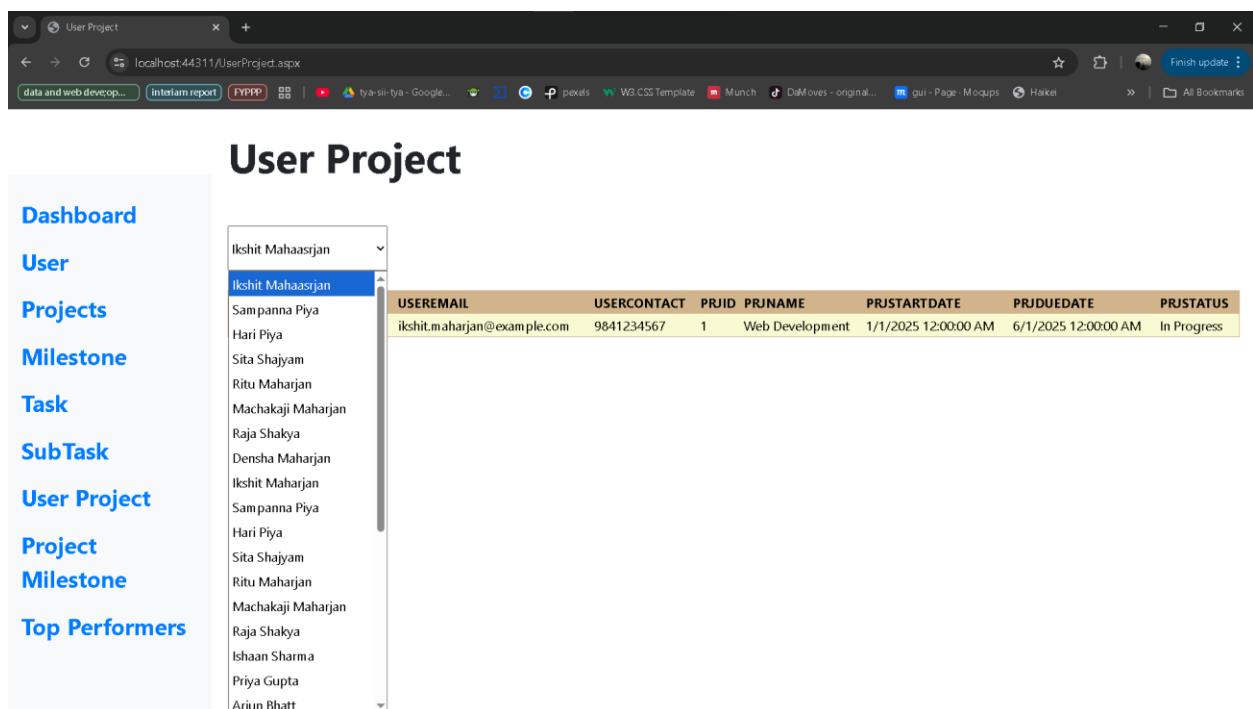


Figure 40 select any user form dropdown list to check the project details

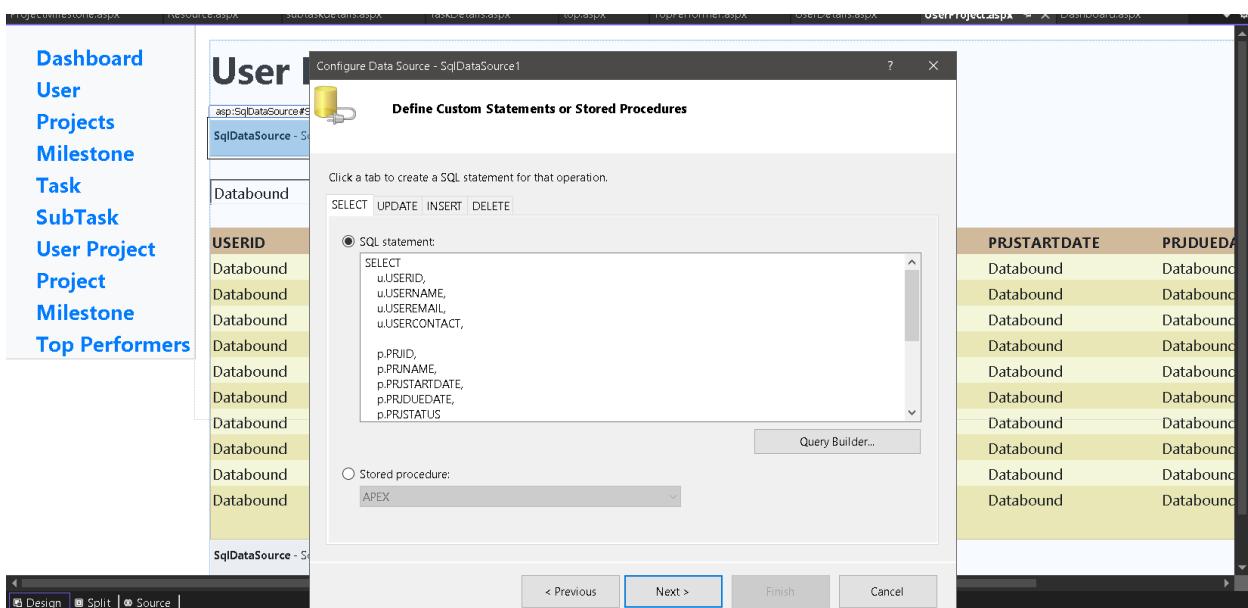


Figure 41 adding SQL query in SQL data source in webworm

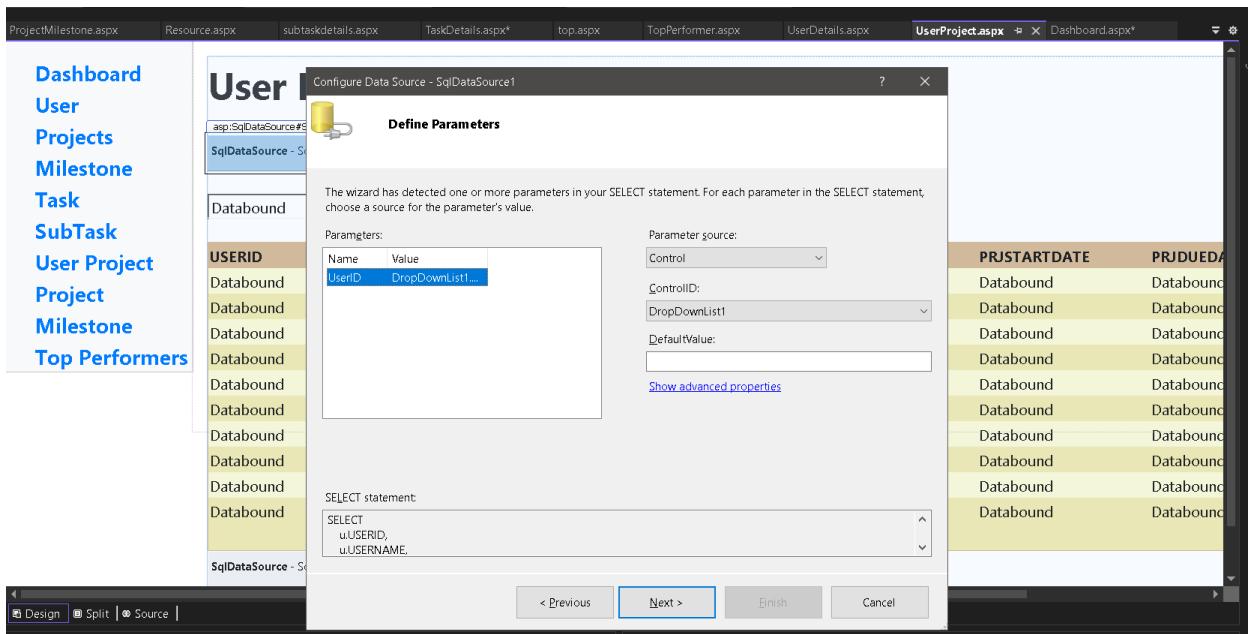


Figure 42 Defining parameters for controlling dropdown list

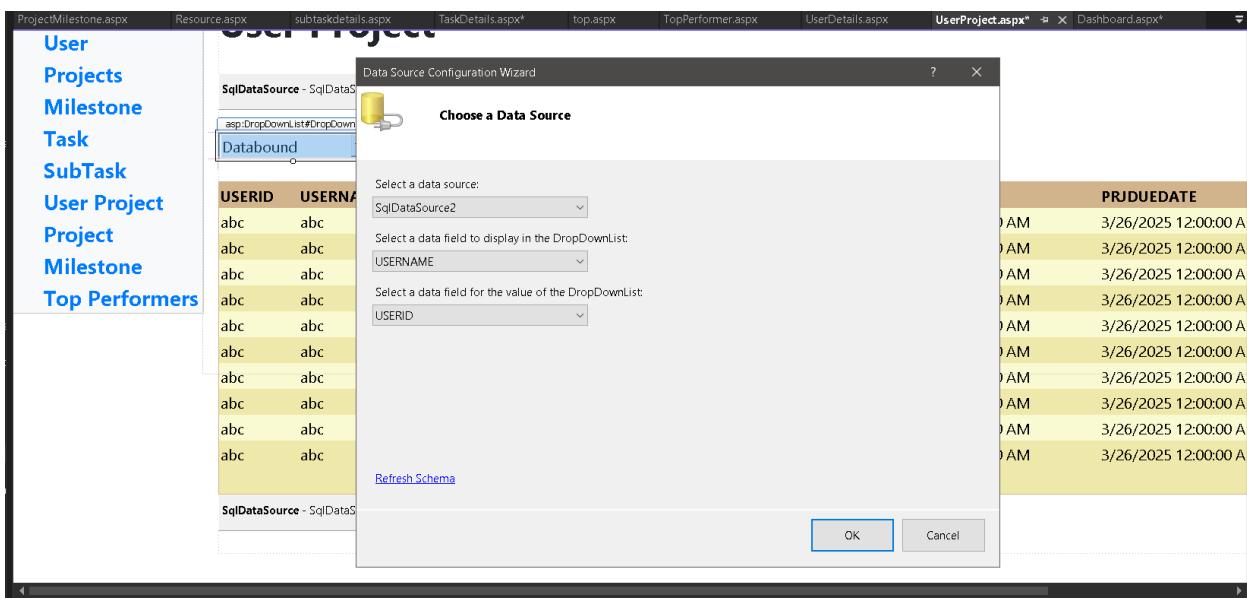
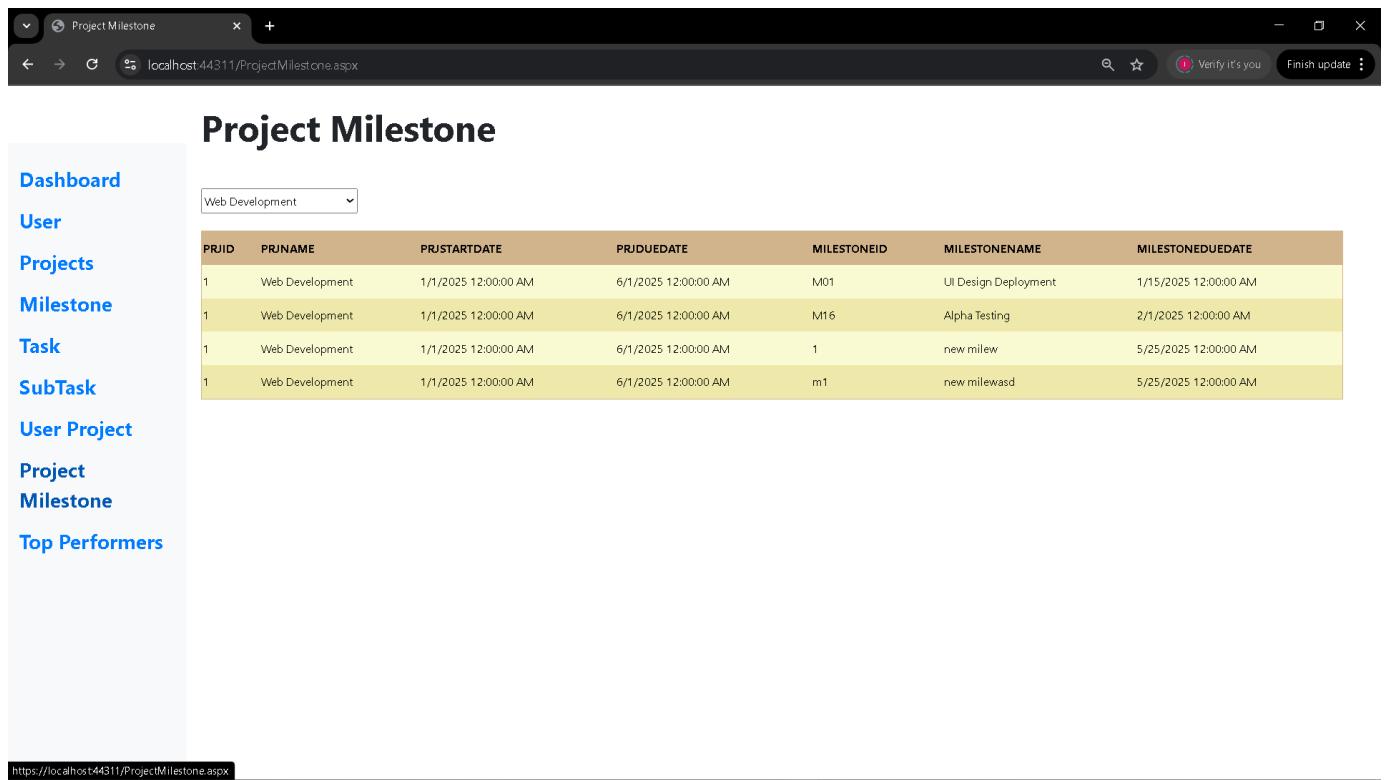


Figure 43 adding another data source for selecting username in dropdown

11.2.2. Project Milestone:



The screenshot shows a web application window titled "Project Milestone" with the URL "localhost:44311/ProjectMilestone.aspx". On the left, there is a vertical navigation menu with the following items: Dashboard, User, Projects, **Milestone**, Task, SubTask, User Project, Project, Milestone, and Top Performers. The "Milestone" item is currently selected. A dropdown menu above the grid is set to "Web Development". The main content area displays a table with the following data:

PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	MILESTONEID	MILESTONENAME	MILESTONEDUEDATE
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	M01	UI Design Deployment	1/15/2025 12:00:00 AM
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	M16	Alpha Testing	2/1/2025 12:00:00 AM
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	1	new milew	5/25/2025 12:00:00 AM
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	m1	new milewasd	5/25/2025 12:00:00 AM

Figure 44 Project Milestone Complex web form

SQL Query:

```
SELECT      p.PRJID,      p.PRJNAME,      p.PRJSTARTDATE,      p.PRJDUEDATE,
m.MILESTONEID, m.MILESTONENAME, m.MILESTONEDUEDATE FROM PROJECT
p, MILESTONE m WHERE p.PRJID = m.PRJID AND (p.PRJID = :PRJID)
```

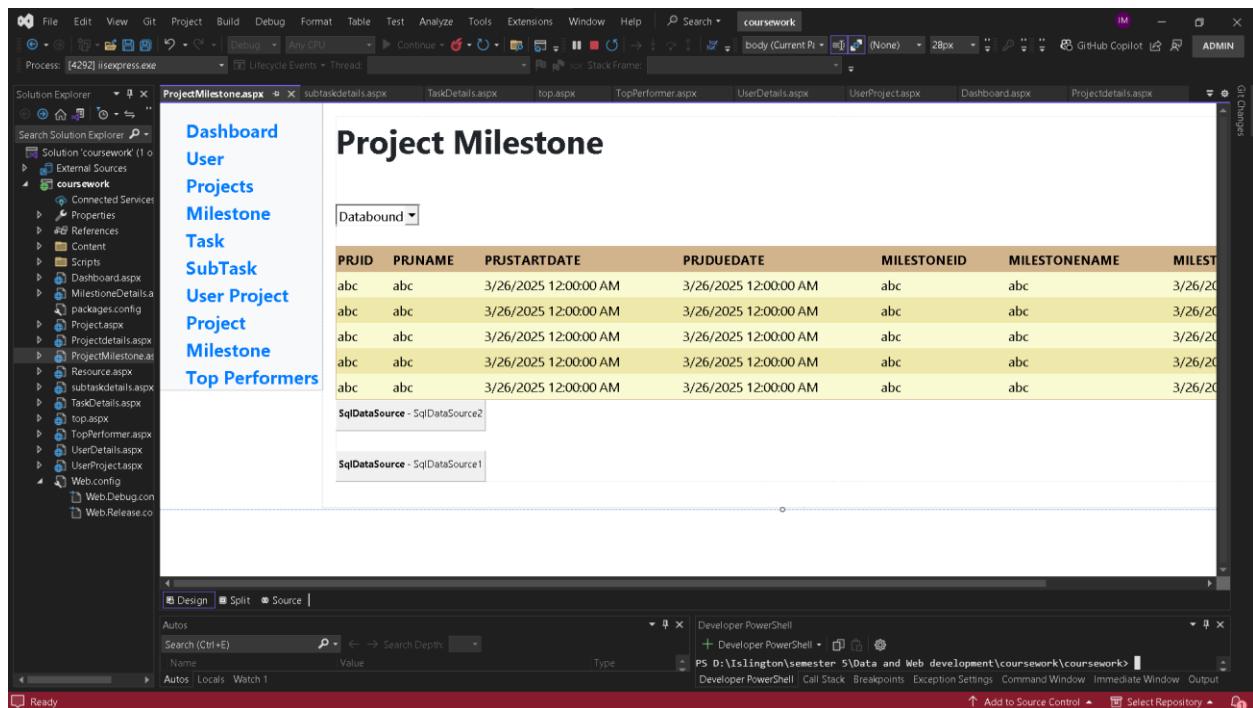


Figure 45 Project Milestone Web Form

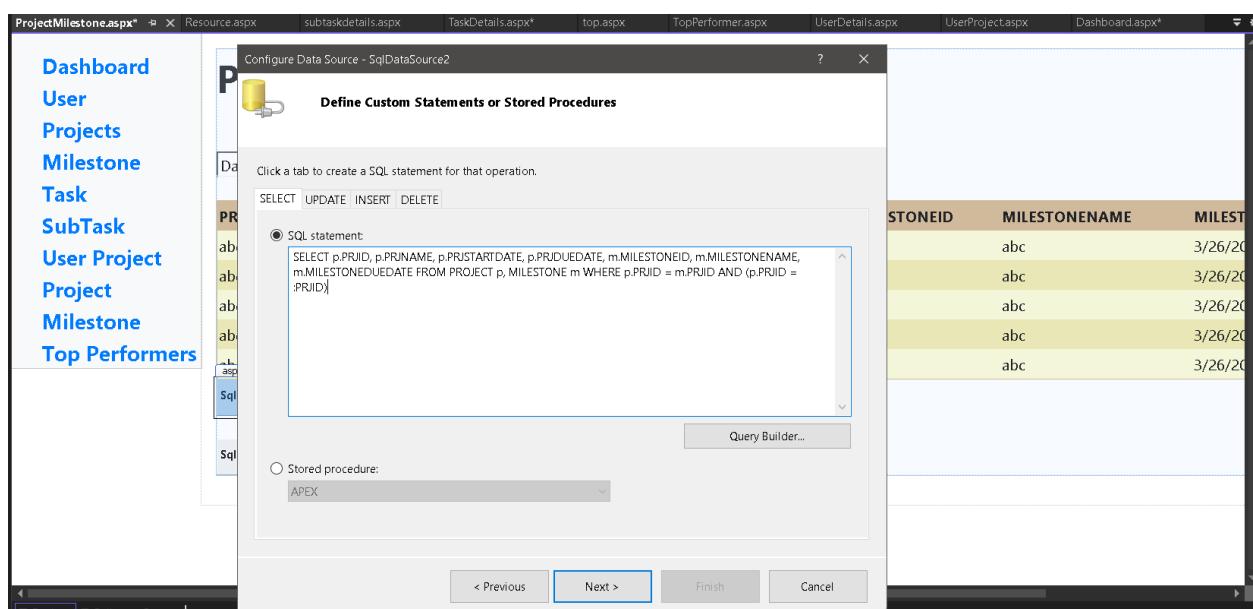


Figure 46 adding SQL query in SQL data source in webform

	PRJSTARTDATE	PRJDUEDATE	MILESTONEID	MILESTONENAME	MILESTONEUEDATE
Client Approval	2/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	M02	Client Approval	2/10/2025 12:00:00 AM
User Feedback Collection	2/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	M17	User Feedback Collection	2/20/2025 12:00:00 AM

Figure 47 for any project detail of the project with all the milestone of the project

STONEID	MILESTONENAME
abc	abc

Figure 48 Defining parameters for controlling dropdownlist

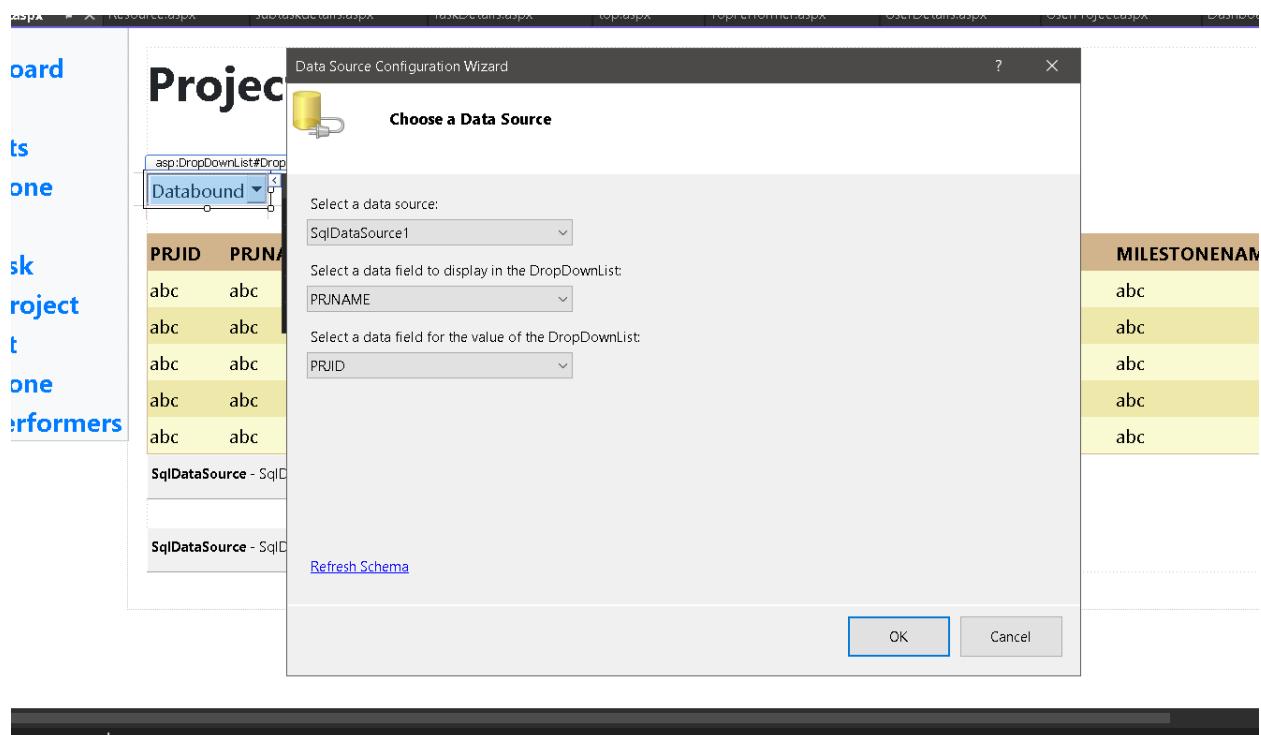


Figure 49 adding another data source for selecting username in dropdown

11.2.3. Top Performer:

Top Performers

User ID	Username	User Email	User Contact	Tasks Completed
User 9	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567	1

Dashboard

- [User](#)
- [Projects](#)
- [Milestone](#)
- [Task](#)
- [SubTask](#)
- [User Project](#)
- [Project](#)
- [Milestone](#)
- [Top Performers](#)

Figure 50 Top performer Complex Web form

SQL Query:

```
SELECT USERID, USERNAME, USEREMAIL, USERCONTACT, TASK_COMPLETED
FROM ( SELECT u.USERID, u.USERNAME, u.USEREMAIL, u.USERCONTACT,
COUNT(tpu.TASKID) AS TASK_COMPLETED FROM taskprojectuser tpu JOIN Task t
ON tpu.TASKID = t.TASKID JOIN user_table u ON tpu.USERID = u.USERID WHERE
t.TASKSTATUS = 'Completed' AND tpu.PRJID = :project_id GROUP BY u.USERID,
u.USERNAME, u.USEREMAIL, u.USERCONTACT ORDER BY TASK_COMPLETED
DESC ) WHERE "ROWNUM" <= 3;
```

```
SQL> SELECT USERID, USERNAME, USEREMAIL, USERCONTACT, TASK_COMPLETED
  2  FROM (
  3    SELECT u.USERID, u.USERNAME, u.USEREMAIL, u.USERCONTACT, COUNT(tpu.TASKID) AS TASK_COMPLETED
  4    FROM taskprojectuser tpu
  5    JOIN Task t ON tpu.TASKID = t.TASKID
  6    JOIN user_table u ON tpu.USERID = u.USERID
  7    WHERE t.TASKSTATUS = 'Completed'
  8    AND tpu.PRJID = 4
  9    GROUP BY u.USERID, u.USERNAME, u.USEREMAIL, u.USERCONTACT
 10   ORDER BY TASK_COMPLETED DESC
 11  )
 12 WHERE ROWNUM <= 3;
```

USERID	USERNAME	USEREMAIL	USERCONTACT	TASK_COMPLETED
User 24	Rahul Joshi	rahul.joshi@example.com	9845678910	1
User 4	Sita Shajyam	sita.shajyam@example.com	9823456789	1

Figure 51 top performer query

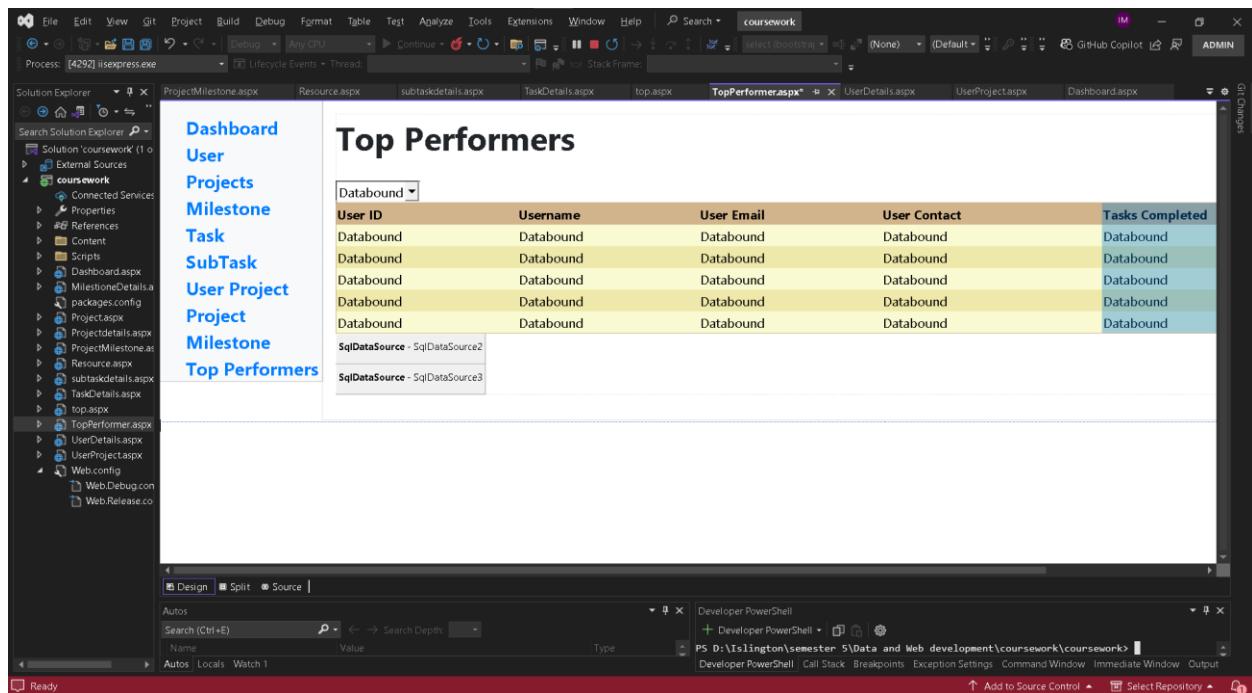


Figure 52 Top performer Complex Web Form

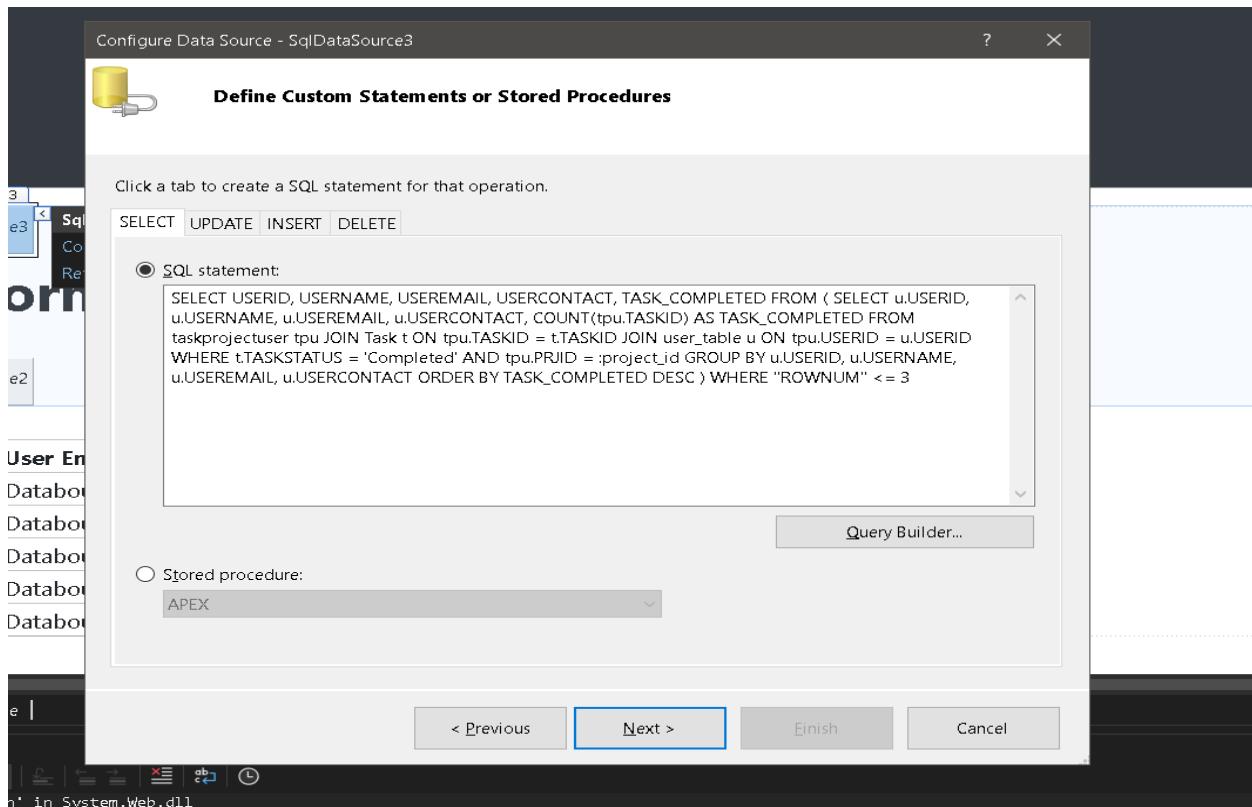


Figure 53 adding SQL query in SQL data source in webform

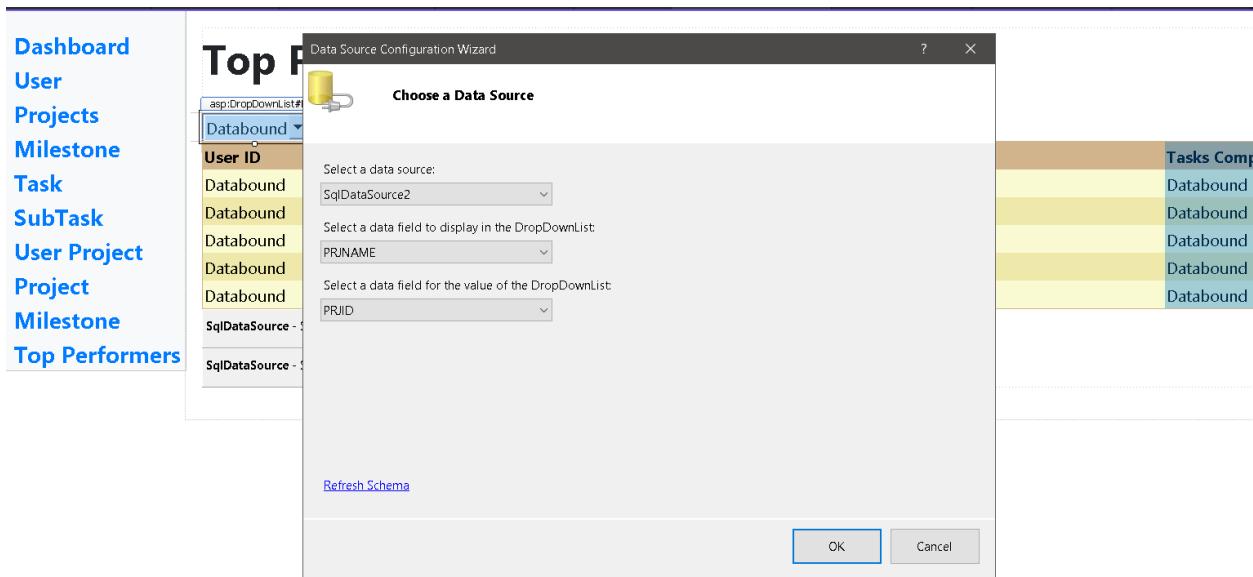


Figure 54 adding another SQL data source for dropdown

User Email	User Contact	Tasks Completed
ikshit.maharjan@example.com	9841234567	1

Figure 55 Dropdown for selecting any projects

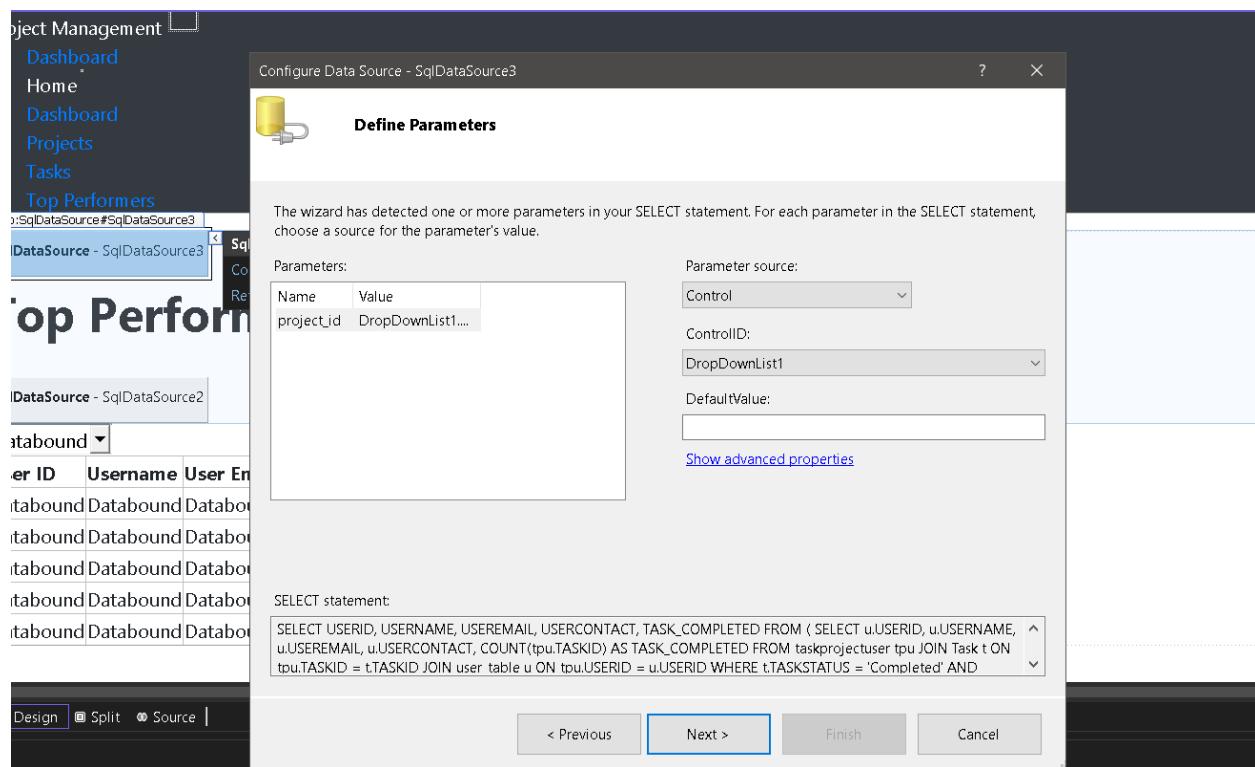


Figure 56 Defining parameters for controlling dropdown list

11.3. Basic Form

11.3.1. User Details

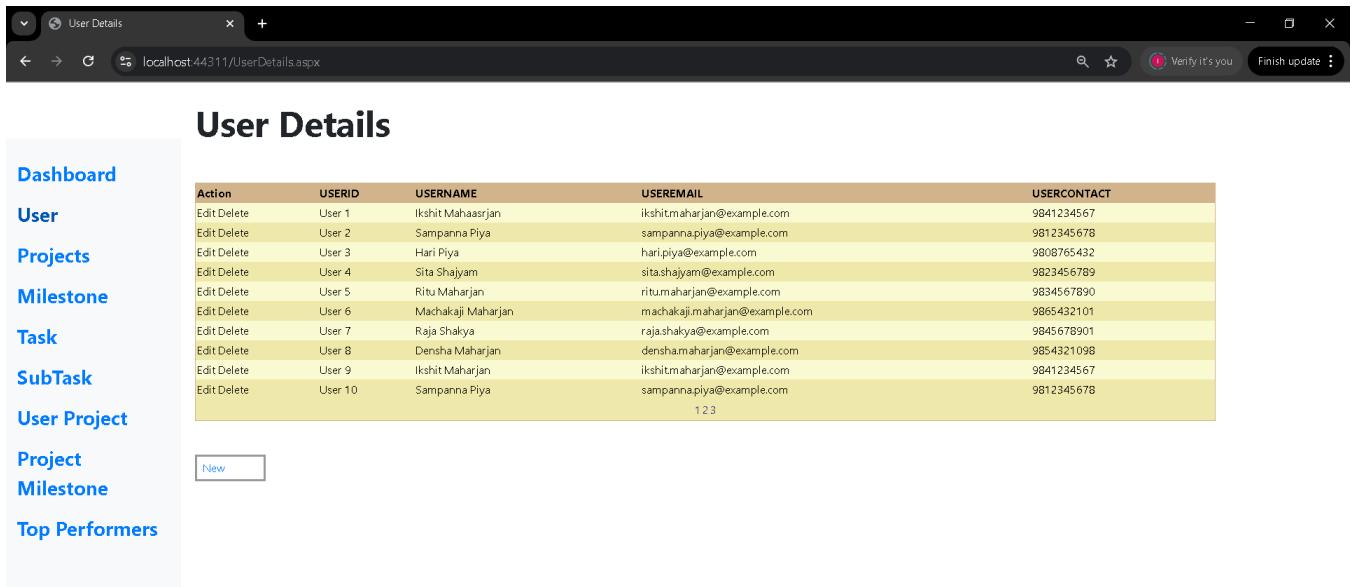


Figure 57 User Detail Basic form

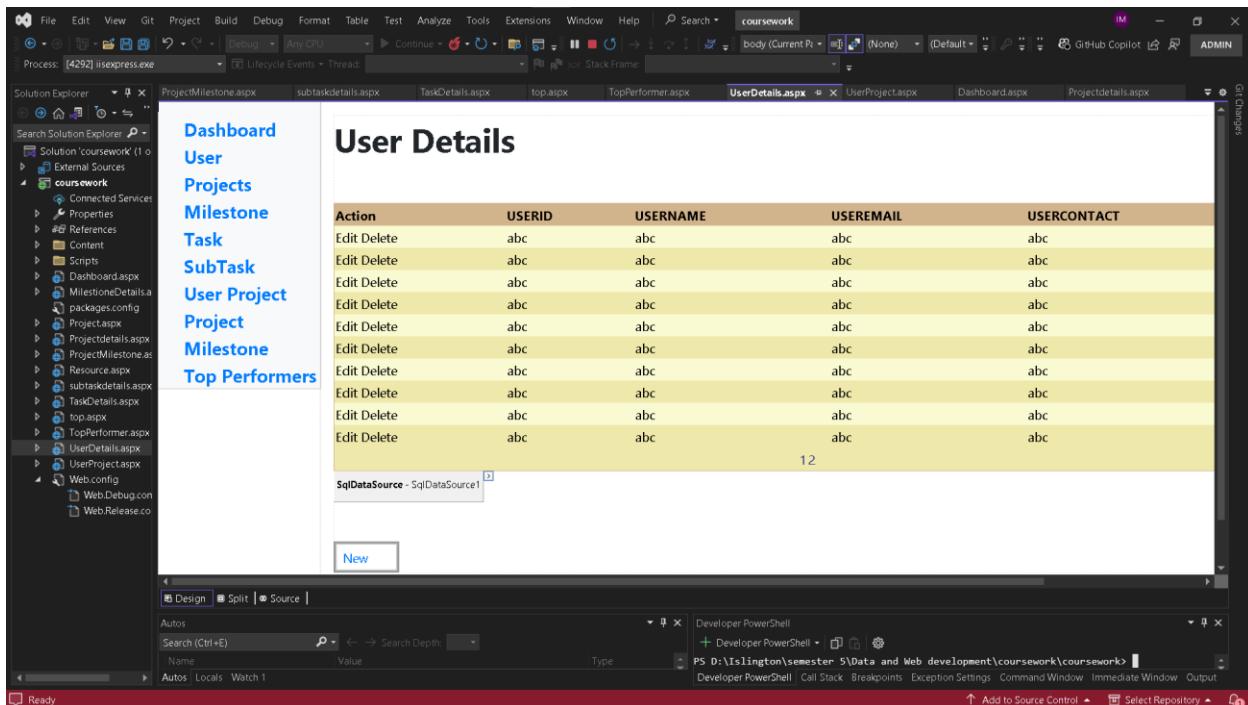


Figure 58 User Details Web Form

Action	USERID	USERNAME	USEREMAIL	USERCONTACT
Edit Delete	User 1	Ikshit Mahaasrjan	ikshit.maharjan@example.com	9841234567
Edit Delete	User 2	Sampanna Piya	sampanna.piya@example.com	9812345678
Edit Delete	User 3	Hari Piya	hari.piya@example.com	9808765432
Edit Delete	User 4	Sita Shajam	sita.shajam@example.com	9823456789
Edit Delete	User 5	Ritu Maharjan	ritu.maharjan@example.com	9834567890
Edit Delete	User 6	Machakaji Maharjan	machakaji.maharjan@example.com	9865432109
Edit Delete	User 7	Raja Shakya	raja.shakya@example.com	9845678901
Edit Delete	User 8	Densha Maharjan	densha.maharjan@example.com	9854321098
Edit Delete	User 9	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
Edit Delete	User 10	Sampanna Piya	sampanna.piya@example.com	9812345678

123

USERID:

 USERNAME:

 USEREMAIL:

 USERCONTACT:

[Insert](#) [Cancel](#)

Figure 59 Add New user form

User Details

Action	USERID	USERNAME	USEREMAIL	USERCONTACT
Update Cancel	User 1	Ikshit Mahaasrjan	ikshit.maharjan@example.com	9841234567
Edit Delete	User 2	Sampanna Piya	sampanna.piya@example.com	9812345678
Edit Delete	User 3	Hari Piya	hari.piya@example.com	9808765432
Edit Delete	User 4	Sita Shaivam	sita.shaivam@example.com	9823456789

Figure 60 Edit/delete User detail using action buttons

11.3.2. Project Details

The screenshot shows a web application titled "Project Details". On the left is a sidebar menu with links: Dashboard, User, Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. Below the menu is a "New" button. The main content area displays a table of project details:

Action	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
Edit Delete	1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	In Progress
Edit Delete	2	Application Development	2/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	Active
Edit Delete	3	E-commerce	3/1/2025 12:00:00 AM	9/1/2025 12:00:00 AM	Completed
Edit Delete	4	Final Year Project (FYP)	1/10/2025 12:00:00 AM	6/10/2025 12:00:00 AM	In Progress
Edit Delete	5	Data and Web Development	4/1/2025 12:00:00 AM	10/1/2025 12:00:00 AM	Active
Edit Delete	6	AI Coursework	2/20/2025 12:00:00 AM	7/20/2025 12:00:00 AM	Completed
Edit Delete	7	Web Development	3/5/2025 12:00:00 AM	9/5/2025 12:00:00 AM	In Progress
Edit Delete	8	Application Development	1/20/2025 12:00:00 AM	6/20/2025 12:00:00 AM	Active
Edit Delete	9	E-commerce	2/1/2025 12:00:00 AM	7/1/2025 12:00:00 AM	Completed
Edit Delete	10	Final Year Project (FYP)	1/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	In Progress

12

Figure 61 Project Details Basic Form

The screenshot shows the "ProjectDetails.aspx" page in Visual Studio. The left side features a navigation menu with the same items as Figure 61. The main content area displays the same table of project details. At the bottom of the table, there is a "SqlDataSource - SqlDataSource1" control. The status bar at the bottom indicates "Ready".

Figure 62 Project Details Web Form

		Project Name	Start Date	Due Date	Status
Edit	5	Data and Web Development	4/1/2025 12:00:00 AM	10/1/2025 12:00:00 AM	Active
Edit	6	AI Coursework	2/20/2025 12:00:00 AM	7/20/2025 12:00:00 AM	Completed
Edit	7	Web Development	3/5/2025 12:00:00 AM	9/5/2025 12:00:00 AM	In Progress
Edit	8	Application Development	1/20/2025 12:00:00 AM	6/20/2025 12:00:00 AM	Active
Edit	9	E-commerce	2/1/2025 12:00:00 AM	7/1/2025 12:00:00 AM	Completed
Edit	10	Final Year Project (FYP)	1/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	In Progress

12

PRJID:

PRJNAME:

PRJSTARTDATE:

PRJDUEDATE:

PRJSTATUS:

[Insert](#) [Cancel](#)

Figure 63 Add new Project Using Add button

Project Details

Action	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
Edit	1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	In Progress
Edit	2	Application Development	2/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	Active
Edit	3	E-commerce	3/1/2025 12:00:00 AM	9/1/2025 12:00:00 AM	Completed
Edit	4	Final Year Project (FYP)	1/10/2025 12:00:00 AM	6/10/2025 12:00:00 AM	In Progress
Edit	5	Data and Web Development	4/1/2025 12:00:00 AM	10/1/2025 12:00:00 AM	Active
Edit	6	AI Coursework	2/20/2025 12:00:00 AM	7/20/2025 12:00:00 AM	Completed
Edit	7	Web Development	3/5/2025 12:00:00 AM	9/5/2025 12:00:00 AM	In Progress
Edit	8	Application Development	1/20/2025 12:00:00 AM	6/20/2025 12:00:00 AM	Active
Update Cancel	9	<input type="text" value="E-commerce"/>	<input type="text" value="2/1/2025 12:00:00 AM"/>	<input type="text" value="7/1/2025 12:00:00 AM"/>	<input type="text" value="Completed"/>

Figure 64 Edit/delete existing detail using action button

11.3.3. Task Details

The screenshot shows a web browser window with the URL `localhost:44311/TaskDetails.aspx`. The page title is "Task Details". On the left, there is a sidebar menu with the following items: Dashboard, User, Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. Below the menu is a "New" button. The main content area is titled "Task" and contains a table with the following data:

Action	TASKID	TASKNAME	TASKSTARTDATE	TASKDUEDATE	TASKSTATUS
Edit Delete	T1	Student Management	1/1/2024 12:00:00 AM	2/20/2024 12:00:00 AM	Not Done
Edit Delete	T2	Library Management	2/1/2024 12:00:00 AM	3/15/2024 12:00:00 AM	Not Done
Edit Delete	T3	Attendance Registration	3/10/2024 12:00:00 AM	4/10/2024 12:00:00 AM	In Progress
Edit Delete	T4	Fee Management	4/15/2024 12:00:00 AM	5/25/2024 12:00:00 AM	Completed
Edit Delete	T5	Mobile App Development	5/1/2024 12:00:00 AM	6/20/2024 12:00:00 AM	Not Done
Edit Delete	T6	Student Management	6/5/2024 12:00:00 AM	7/15/2024 12:00:00 AM	In Progress
Edit Delete	T7	Library Management	7/10/2024 12:00:00 AM	8/20/2024 12:00:00 AM	In Progress
Edit Delete	T8	Attendance Registration	8/15/2024 12:00:00 AM	9/25/2024 12:00:00 AM	In Progress
Edit Delete	T9	Fee Management	9/1/2024 12:00:00 AM	10/15/2024 12:00:00 AM	Completed
Edit Delete	T10	Mobile App Development	10/5/2024 12:00:00 AM	11/30/2024 12:00:00 AM	In Progress
Edit Delete	T11	Student Management	12/1/2024 12:00:00 AM	1/15/2025 12:00:00 AM	In Progress
Edit Delete	T12	Library Management	1/1/2025 12:00:00 AM	2/10/2025 12:00:00 AM	Not Done
Edit Delete	T13	Attendance Registration	2/15/2025 12:00:00 AM	3/20/2025 12:00:00 AM	Not Done
Edit Delete	T14	Fee Management	3/5/2025 12:00:00 AM	4/10/2025 12:00:00 AM	In Progress
Edit Delete	T15	Mobile App Development	4/1/2025 12:00:00 AM	5/20/2025 12:00:00 AM	In Progress

Figure 65 Task Details Basic Web form

The screenshot shows the Microsoft Visual Studio IDE with the project "coursework" open. The Solution Explorer shows files like `Dashboard.aspx`, `User.aspx`, `Projects.aspx`, etc. The current file is `TaskDetails.aspx`. The Design view shows the same "Task" table as in Figure 65. The Source view shows the ASPX code and the C# code-behind:

```

<%@ Page Language="C#" %>
<!DOCTYPE html>
<html>
<head>
    <title>Task</title>
</head>
<body>
    <table border="1">
        <thead>
            <tr>
                <th>Action</th>
                <th>TASKID</th>
                <th>TASKNAME</th>
                <th>TASKSTARTDATE</th>
                <th>TASKDUEDATE</th>
            </tr>
        </thead>
        <tbody>
            <tr><td>Edit Delete</td><td>abc</td><td>abc</td><td>3/26/2025 12:00:00 AM</td><td>3/26/2025 12:00:00 AM</td></tr>
            <tr><td>Edit Delete</td><td>abc</td><td>abc</td><td>3/26/2025 12:00:00 AM</td><td>3/26/2025 12:00:00 AM</td></tr>
        </tbody>
    </table>

```

Figure 66 Task Details Web Form

Task						
Dashboard	Action	TASKID	TASKNAME	TASKSTARTDATE	TASKDUEDATE	TASKSTATUS
User	Update Cancel	T1	Student Management	1/1/2024 12:00:00 AM	2/20/2024 12:00:00 AM	Not Done
Projects	Edit Delete	T2	Library Management	2/1/2024 12:00:00 AM	3/15/2024 12:00:00 AM	Not Done
Milestone	Edit Delete	T3	Attendance Registration	3/10/2024 12:00:00 AM	4/10/2024 12:00:00 AM	In Progress
Task	Edit Delete	T4	Fee Management	4/15/2024 12:00:00 AM	5/25/2024 12:00:00 AM	Completed
SubTask	Edit Delete	T5	Mobile App Development	5/1/2024 12:00:00 AM	6/20/2024 12:00:00 AM	Not Done
User Project	Edit Delete	T6	Student Management	6/5/2024 12:00:00 AM	7/15/2024 12:00:00 AM	In Progress
Project	Edit Delete	T7	Library Management	7/10/2024 12:00:00 AM	8/20/2024 12:00:00 AM	In Progress
	Edit Delete	T8	Attendance Registration	8/15/2024 12:00:00 AM	9/25/2024 12:00:00 AM	In Progress
	Edit Delete	T9	Fee Management	9/1/2024 12:00:00 AM	10/15/2024 12:00:00 AM	Completed
	Edit Delete	T10	Mobile App Development	10/5/2024 12:00:00 AM	11/30/2024 12:00:00 AM	In Progress
	Edit Delete	T11	Student Management	12/1/2024 12:00:00 AM	1/15/2025 12:00:00 AM	In Progress
	Edit Delete	T12	Library Management	1/1/2025 12:00:00 AM	2/10/2025 12:00:00 AM	Not Done
	Edit Delete	T13	Attendance Registration	2/15/2025 12:00:00 AM	3/20/2025 12:00:00 AM	Not Done
	Edit Delete	T14	Fee Management	3/5/2025 12:00:00 AM	4/10/2025 12:00:00 AM	In Progress
	Edit Delete	T15	Mobile App Development	4/1/2025 12:00:00 AM	5/20/2025 12:00:00 AM	In Progress

Figure 67 add new task using new button

Task	Action	TASKID	TASKNAME	TASKSTARTDATE	TASKDUEDATE	TASKSTATUS
User Project	Edit Delete	T30	new task	4/1/2025 12:00:00 AM	4/1/2025 12:00:00 AM	In progress
Project						
Milestone						
Top Performers						

TASKID:

 TASKNAME:

 TASKSTARTDATE:

 TASKDUEDATE:

 TASKSTATUS:

Insert, Cancel

Figure 68 Edit/delete User detail using action buttons

11.3.4. Subtask Details

The screenshot shows a web browser window with the URL `localhost:44311/subtaskdetails.aspx`. The page title is "SubTask Details". On the left, there is a sidebar menu with links: Dashboard, User, Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. A "New" button is located at the bottom of the sidebar. The main content area has a title "SUB-Task" and a table with the following data:

Action	SUBTASKID	TASKID	SUBTASKNAME	SUBTASKSTARTDATE	SUBTASKDUEDATE
Edit	ST1	T1	Requirement Analysis	1/2/2024 12:00:00 AM	1/10/2024 12:00:00 AM
Edit	ST2	T2	Database Design	2/1/2024 12:00:00 AM	2/15/2024 12:00:00 AM
Edit	ST3	T3	UI Design	3/5/2024 12:00:00 AM	3/20/2024 12:00:00 AM
Edit	ST4	T4	API Development	4/1/2024 12:00:00 AM	4/20/2024 12:00:00 AM
Edit	ST5	T5	Testing	5/10/2024 12:00:00 AM	5/30/2024 12:00:00 AM
Edit	ST6	T6	Client Feedback	6/1/2024 12:00:00 AM	6/15/2024 12:00:00 AM
Edit	ST7	T7	Deployment	7/1/2024 12:00:00 AM	7/20/2024 12:00:00 AM
Edit	ST8	T8	Documentation	8/5/2024 12:00:00 AM	8/25/2024 12:00:00 AM
Edit	ST9	T9	Training	9/10/2024 12:00:00 AM	9/30/2024 12:00:00 AM
Edit	ST10	T10	Performance Testing	10/5/2024 12:00:00 AM	10/25/2024 12:00:00 AM
Edit	ST11	T11	Requirement Review	11/1/2024 12:00:00 AM	11/15/2024 12:00:00 AM
Edit	ST12	T12	Prototype Development	1/10/2025 12:00:00 AM	1/25/2025 12:00:00 AM
Edit	ST13	T13	Code Refactoring	2/1/2025 12:00:00 AM	2/20/2025 12:00:00 AM
Edit	ST14	T14	Feature Implementation	3/1/2025 12:00:00 AM	3/15/2025 12:00:00 AM
Edit	ST15	T15	Release Preparation	4/1/2025 12:00:00 AM	4/20/2025 12:00:00 AM

Figure 69 Sub Task Basic Form

The screenshot shows the "subtaskdetails.aspx" file in Visual Studio. The Solution Explorer on the left lists files like "ProjectMilestone.aspx", "TaskDetails.aspx", "top.aspx", "TopPerformer.aspx", "UserDetails.aspx", "UserProjects.aspx", "Dashboard.aspx", and "Projectdetails.aspx". The "Dashboard" link is currently selected in the sidebar. The main content area displays the "SUB-Task" form with the same data as Figure 69. Below the form, a "SqlDataSource - SqlDataSource1" control is visible. The status bar at the bottom shows "SqlDataSource - SqlDataSource1" and "3/25/2025 12:00:00 AM".

Figure 70 Sub Task Web Form

Milestone	ST12	T12	Prototype Development	1/10/2025 12:00:00 AM	1/20/2025 12:00:00 AM
Task	Edit ST13	T13	Code Refactoring	2/1/2025 12:00:00 AM	2/20/2025 12:00:00 AM
	Edit ST14	T14	Feature Implementation	3/1/2025 12:00:00 AM	3/15/2025 12:00:00 AM
	Edit ST15	T15	Release Preparation	4/1/2025 12:00:00 AM	4/20/2025 12:00:00 AM
SubTask	SUBTASKID: <input type="text"/> TASKID: <input type="text"/> SUBTASKNAME: <input type="text"/> SUBTASKSTARTDATE: <input type="text"/> SUBTASKDUEDATE: <input type="text"/>				
User Project					
Project					
Milestone					
Top Performers					

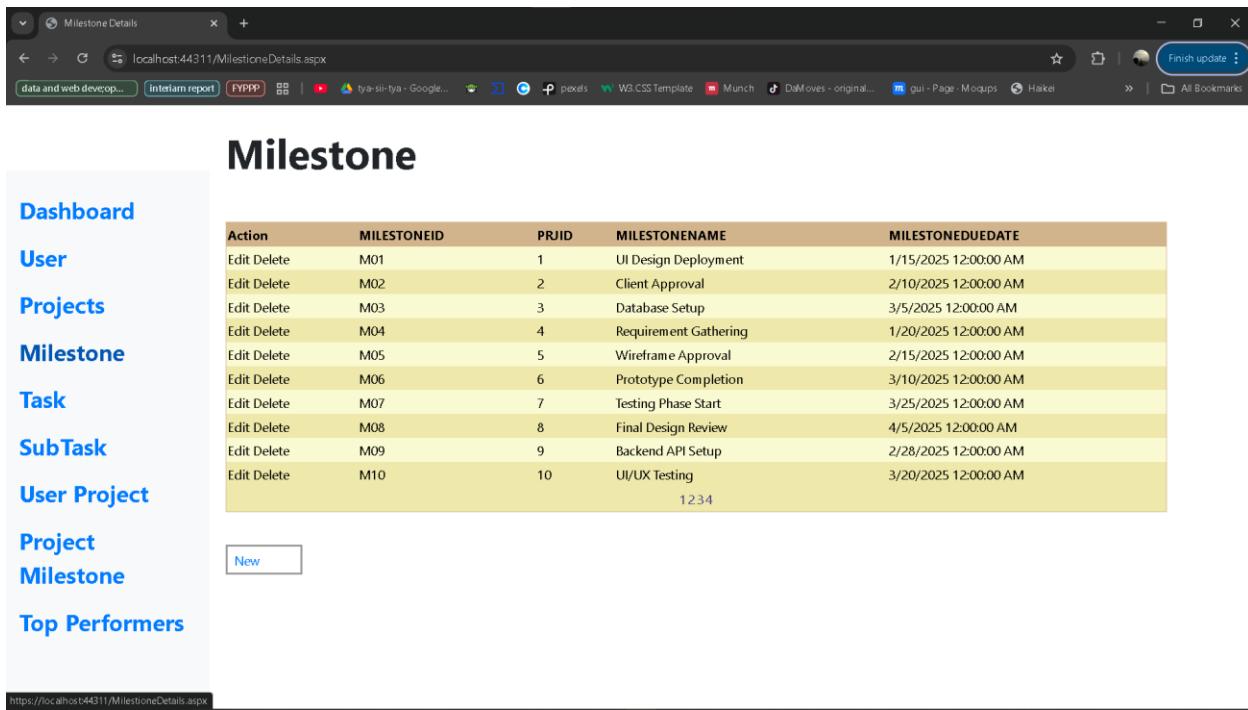
Figure 71 Add new Subtask using New Button

Screenshot of a web browser showing a sub-task management interface. The URL is `localhost:44317/SubTaskDetails.aspx`. The page title is "SUB-Task".

Action	SUBTASKID	TASKID	SUBTASKNAME	SUBTASKSTARTDATE	SUBTASKDUEDATE
Update Cancel	ST1	T1	Requirement Analysis	1/2/2024 12:00:00 AM	1/10/2024 12:00:00 AM
Edit Delete	ST2	T2	Database Design	2/1/2024 12:00:00 AM	2/15/2024 12:00:00 AM
Edit Delete	ST3	T3	UI Design	3/5/2024 12:00:00 AM	3/20/2024 12:00:00 AM
Edit Delete	ST4	T4	API Development	4/1/2024 12:00:00 AM	4/20/2024 12:00:00 AM
Edit Delete	ST5	T5	Testing	5/10/2024 12:00:00 AM	5/30/2024 12:00:00 AM
Edit Delete	ST6	T6	Client Feedback	6/1/2024 12:00:00 AM	6/15/2024 12:00:00 AM
Edit Delete	ST7	T7	Deployment	7/1/2024 12:00:00 AM	7/20/2024 12:00:00 AM
Edit Delete	ST8	T8	Documentation	8/5/2024 12:00:00 AM	8/25/2024 12:00:00 AM
Edit Delete	ST9	T9	Training	9/10/2024 12:00:00 AM	9/30/2024 12:00:00 AM
Edit Delete	ST10	T10	Performance Testing	10/5/2024 12:00:00 AM	10/25/2024 12:00:00 AM
Edit Delete	ST11	T11	Requirement Review	11/1/2024 12:00:00 AM	11/15/2024 12:00:00 AM
Edit Delete	ST12	T12	Prototype Development	1/10/2025 12:00:00 AM	1/25/2025 12:00:00 AM
Edit Delete	ST13	T13	Code Refactoring	2/1/2025 12:00:00 AM	2/20/2025 12:00:00 AM
Edit Delete	ST14	T14	Feature Implementation	3/1/2025 12:00:00 AM	3/15/2025 12:00:00 AM
Edit Delete	ST15	T15	Release Preparation	4/1/2025 12:00:00 AM	4/20/2025 12:00:00 AM

Figure 72 Edit/delete User detail using action buttons

11.3.5. Milestone Details

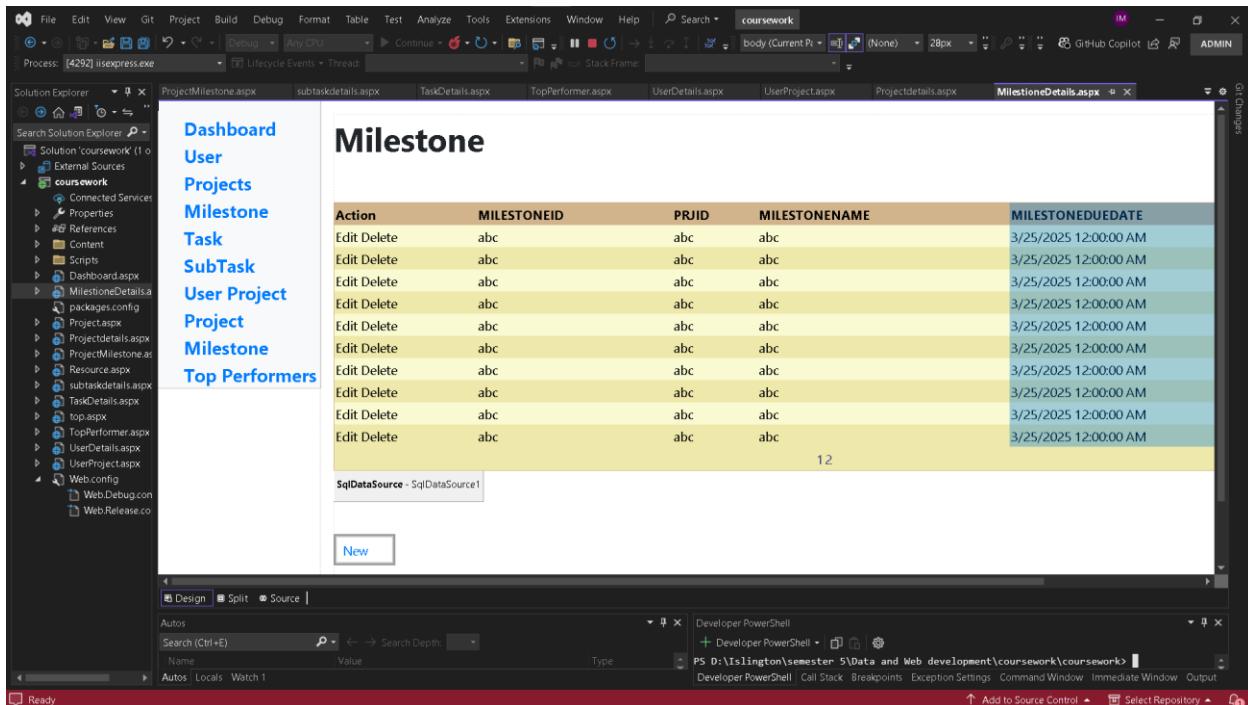


The screenshot shows a web application interface titled "Milestone". On the left, there is a vertical navigation menu with links: Dashboard, User, Projects, Milestone (which is highlighted in blue), Task, SubTask, User Project, Project, Milestone, and Top Performers. Below the menu, a "New" button is visible. The main content area displays a table titled "Milestone" with the following data:

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Edit Delete	M01	1	UI Design Deployment	1/15/2025 12:00:00 AM
Edit Delete	M02	2	Client Approval	2/10/2025 12:00:00 AM
Edit Delete	M03	3	Database Setup	3/5/2025 12:00:00 AM
Edit Delete	M04	4	Requirement Gathering	1/20/2025 12:00:00 AM
Edit Delete	M05	5	Wireframe Approval	2/15/2025 12:00:00 AM
Edit Delete	M06	6	Prototype Completion	3/10/2025 12:00:00 AM
Edit Delete	M07	7	Testing Phase Start	3/25/2025 12:00:00 AM
Edit Delete	M08	8	Final Design Review	4/5/2025 12:00:00 AM
Edit Delete	M09	9	Backend API Setup	2/28/2025 12:00:00 AM
Edit Delete	M10	10	UI/UX Testing	3/20/2025 12:00:00 AM

At the bottom of the table, there is a page number "1234".

Figure 73 Milestone Basic Form



The screenshot shows the "Milestone" page within the Visual Studio IDE. The left side features a Solution Explorer with files like "coursework.csproj", "Dashboard.aspx", "User.aspx", etc. The main content area displays the same "Milestone" table as in Figure 73. The table has the following data:

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM
Edit Delete	abc	abc	abc	3/25/2025 12:00:00 AM

At the bottom of the table, there is a page number "12". The bottom of the screen shows the Visual Studio status bar with "Ready".

Figure 74 Milestone Web Form

The screenshot shows a sidebar with navigation links: Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. The main area displays a table of milestones:

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Edit Delete	M06	6	Prototype Completion	3/10/2025 12:00:00 AM
Edit Delete	M07	7	Testing Phase Start	3/25/2025 12:00:00 AM
Edit Delete	M08	8	Final Design Review	4/5/2025 12:00:00 AM
Edit Delete	M09	9	Backend API Setup	2/28/2025 12:00:00 AM
Edit Delete	M10	10	UI/UX Testing	3/20/2025 12:00:00 AM

Below the table is a modal window for adding a new milestone:

MILESTONEID:
PRJID:
MILESTONENAME:
MILESTONEUEDATE:
<input type="button" value="Insert"/> <input type="button" value="Cancel"/>

Figure 75 add new milestone using new button

Milestone

The sidebar includes: Dashboard, User, Projects, Milestone, and Task. The main area shows a table of milestones with action buttons:

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Update Cancel	M01	1	UI Design Deployment	1/15/2025 12:00:00 AM
Edit Delete	M02	2	Client Approval	2/10/2025 12:00:00 AM
Edit Delete	M03	3	Database Setup	3/5/2025 12:00:00 AM
Edit Delete	M04	4	Requirement Gathering	1/20/2025 12:00:00 AM
Edit Delete	M05	5	Wireframe Approval	2/15/2025 12:00:00 AM
Edit Delete	M06	6	Prototype Completion	3/10/2025 12:00:00 AM
Edit Delete	M07	7	Testing Phase Start	3/25/2025 12:00:00 AM

Figure 76 Edit/delete User detail using action buttons

12. User Manual

At first when you open the web-application you can see the home page/dashboard of this web-application.

Dashboard page contains of data like total number of tasks, total number of completed task, total number of projects etc.

It also showcase 2 charts for easy understating of data.

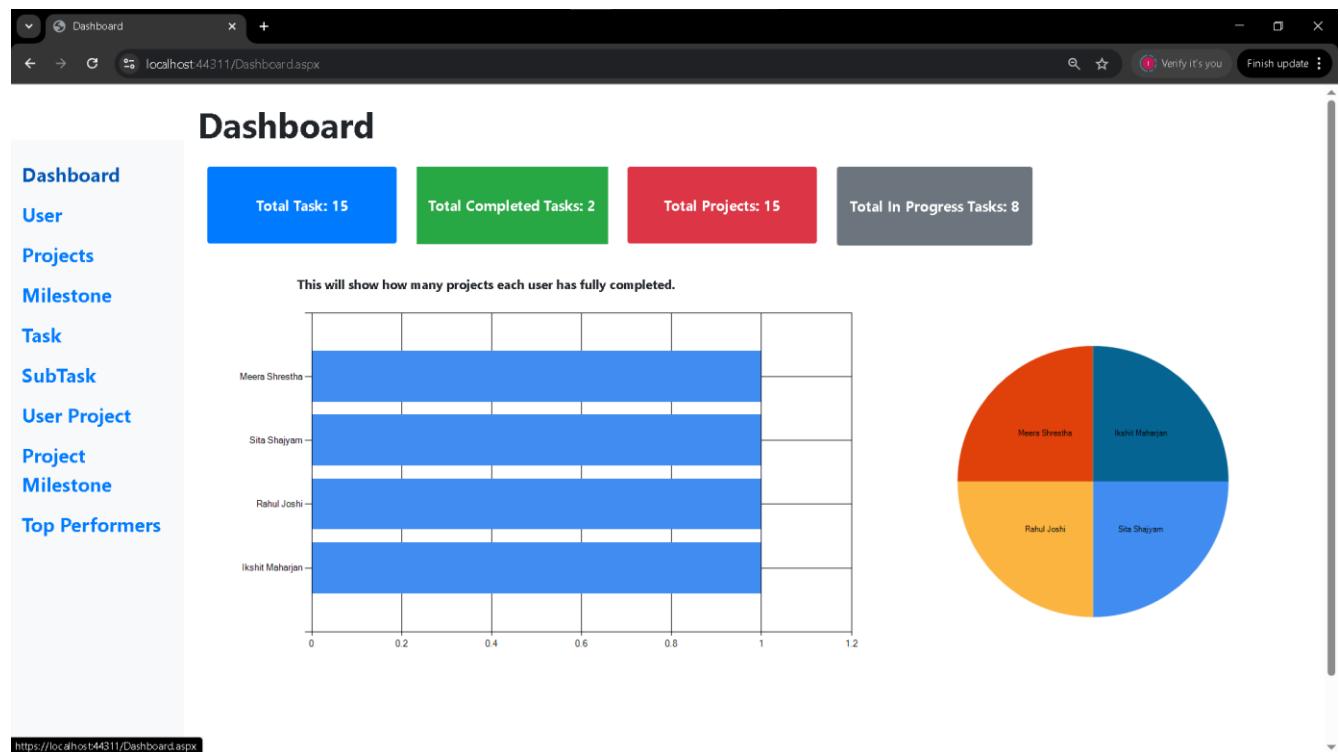
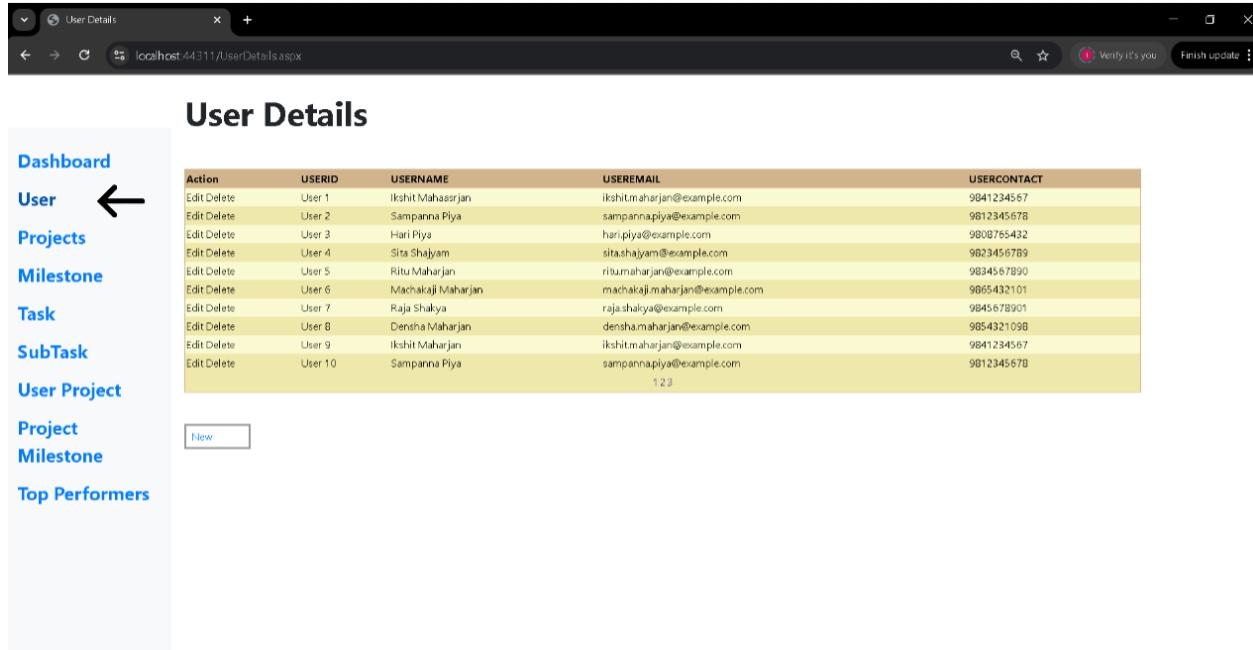


Figure 77 User manual dashboard

Dashboard	On the left side of the website we can see our side bar/ navigation bar from which you can navigate through all the pages.
User	
Projects	User can click on the highlighted text for navigating through all the pages of this web-application.
Milestone	
Task	Let's check each pages one by one.
SubTask	
User Project	
Project	
Milestone	
Top Performers	

Figure 78 user manual nav

- Click on the “user” to the system will redirect you to the User Detail Page.



The screenshot shows a web application interface titled "User Details". On the left, there is a sidebar with navigation links: Dashboard, User (highlighted with a red arrow), Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. Below the sidebar is a "New" button. The main content area displays a table with the following data:

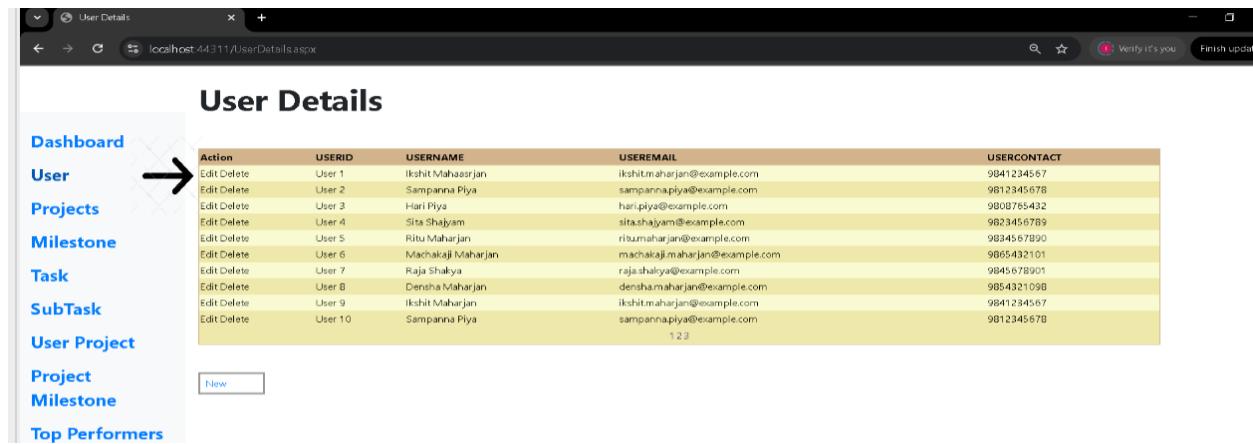
Action	USERID	USERNAME	USEREMAIL	USERCONTACT
Edit Delete	User 1	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
Edit Delete	User 2	Sampanna Piya	sampannapiya@example.com	9812345678
Edit Delete	User 3	Hari Piya	hari.piya@example.com	9808765432
Edit Delete	User 4	Sita Shhayam	sita.shayam@example.com	9823456789
Edit Delete	User 5	Ritu Maharjan	ritumaharjan@example.com	9834567890
Edit Delete	User 6	Machakali Maharjan	machakali.maharjan@example.com	9865432101
Edit Delete	User 7	Raja Shalya	raja.shalya@example.com	9845678901
Edit Delete	User 8	Densha Maharjan	densha.maharjan@example.com	9854321098
Edit Delete	User 9	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567
Edit Delete	User 10	Sampanna Piya	sampannapiya@example.com	9812345678

Figure 79 user manual user details

You can viewing User Details

The page displays a table containing the following user details:

User ID, Username, User Email, User Contact



The screenshot shows the same web application interface as Figure 79. A red arrow points to the "User" link in the sidebar. The main content area displays the same table of user data as Figure 79.

Figure 80 user manual user details1

- To add a New User -Click on the “**NEW**” button. A form will appear prompting you to enter:
- Username-Email-Contact Number-UserID
After filling in the details, click “**Insert**” to save the new user.



Figure 82 user manual add new user

USERID:	
USERNAME:	
USEREMAIL:	
USERCONTACT:	
Insert Cancel	

Figure 81 user manual add user form

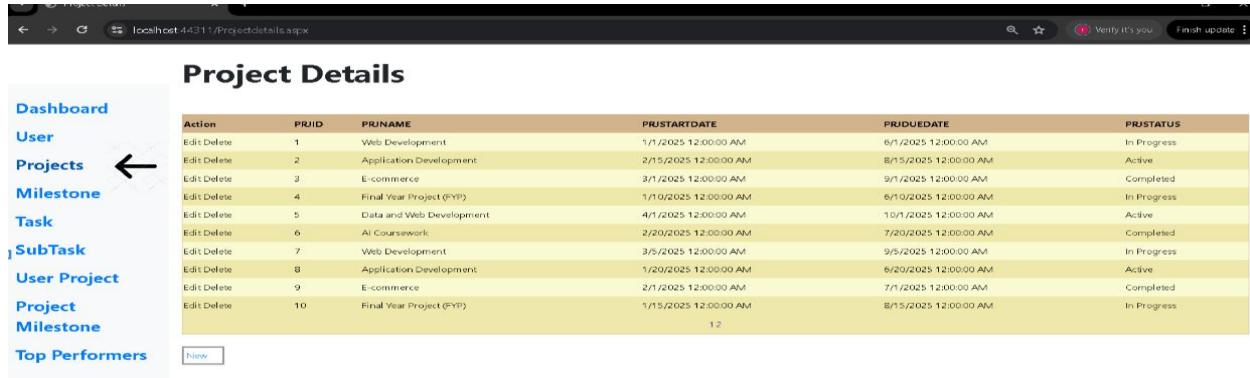
- Editing User Information.In the user list, locate the user you want to edit.
- Click the “**Edit**” button next to the user's details.
- Modify the required fields in the form. Click “**Update**” to save changes.
- Deleting a User:Click the “**Delete**” button next to the user's entry.

Edit	Delete	User 7
Edit	Delete	User 8
Edit	Delete	User 9
Edit	Delete	User 10

New

Figure 83 user manual edit and delete user

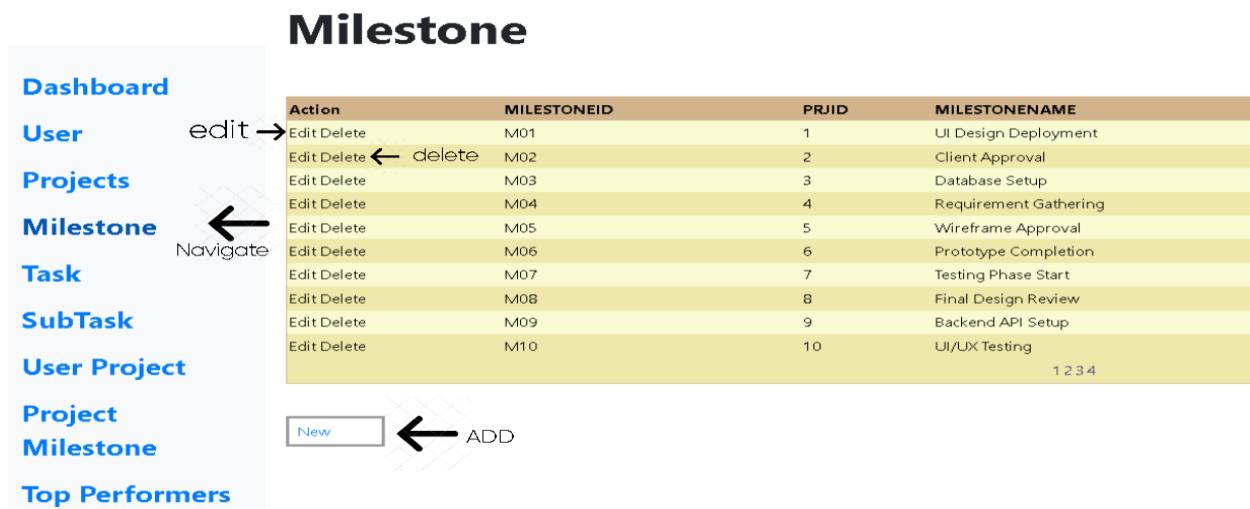
- For every basic form you can do the same steps if you want to navigate through the pages or add data.



The screenshot shows a web application titled "Project Details". On the left, there is a sidebar menu with the following items: Dashboard, User, Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. The "Projects" item is highlighted in blue. A small arrow points from the "Projects" item to the "Project Details" table. The main content area displays a table with columns: Action, PRJID, PRJNAME, PRJSTARTDATE, PRJDUEDATE, and PRJSTATUS. The table contains 10 rows of project data. At the bottom right of the table, there is a page number "12" and a navigation bar with links "1 2 3 4".

Action	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
Edit Delete	1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	In Progress
Edit Delete	2	Application Development	2/15/2025 12:00:00 AM	8/15/2025 12:00:00 AM	Active
Edit Delete	3	E-commerce	3/1/2025 12:00:00 AM	9/1/2025 12:00:00 AM	Completed
Edit Delete	4	Final Year Project (FYP)	1/10/2025 12:00:00 AM	6/10/2025 12:00:00 AM	In Progress
Edit Delete	5	Data and Web Development	4/1/2025 12:00:00 AM	10/1/2025 12:00:00 AM	Active
Edit Delete	6	AI Coursework	2/20/2025 12:00:00 AM	7/20/2025 12:00:00 AM	Completed
Edit Delete	7	Web Development	3/5/2025 12:00:00 AM	9/5/2025 12:00:00 AM	In Progress
Edit Delete	8	Application Development	1/20/2025 12:00:00 AM	6/20/2025 12:00:00 AM	Active
Edit Delete	9	E-commerce	2/1/2025 12:00:00 AM	7/1/2025 12:00:00 AM	Completed
Edit Delete	10	Final Year Project (FYP)	1/15/2025 12:00:00 AM	6/15/2025 12:00:00 AM	In Progress

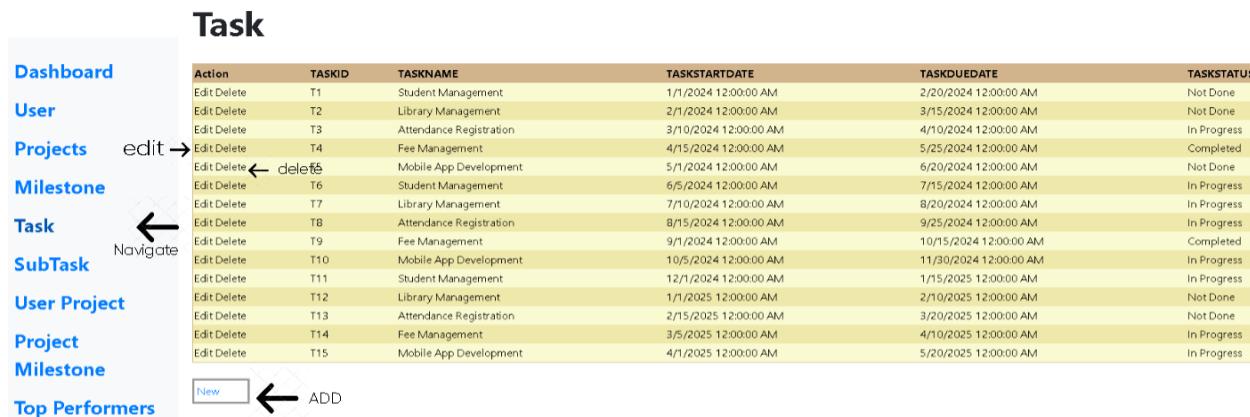
Figure 84 user manual project details



The screenshot shows a web application titled "Milestone". On the left, there is a sidebar menu with the following items: Dashboard, User, Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. The "Milestone" item is highlighted in blue. A small arrow points from the "Milestone" item to the "Milestone" table. Another arrow labeled "edit" points to the first row of the table, and another arrow labeled "delete" points to the second row. The main content area displays a table with columns: Action, MILESTONEID, PRJID, and MILESTONENAME. The table contains 10 rows of milestone data. At the bottom right of the table, there is a page number "1 2 3 4" and a navigation bar with links "1 2 3 4".

Action	MILESTONEID	PRJID	MILESTONENAME
Edit Delete	M01	1	UI Design Deployment
Edit Delete	M02	2	Client Approval
Edit Delete	M03	3	Database Setup
Edit Delete	M04	4	Requirement Gathering
Edit Delete	M05	5	Wireframe Approval
Edit Delete	M06	6	Prototype Completion
Edit Delete	M07	7	Testing Phase Start
Edit Delete	M08	8	Final Design Review
Edit Delete	M09	9	Backend API Setup
Edit Delete	M10	10	UI/UX Testing

Figure 85 user manual milestone



The screenshot shows a web application titled "Task". On the left, there is a sidebar menu with the following items: Dashboard, User, Projects, Milestone, Task, SubTask, User Project, Project, Milestone, and Top Performers. The "Task" item is highlighted in blue. A small arrow points from the "Task" item to the "Task" table. Another arrow labeled "edit" points to the first row of the table, and another arrow labeled "delete" points to the second row. The main content area displays a table with columns: Action, TASKID, TASKNAME, TASKSTARTDATE, TASKDUEDATE, and TASKSTATUS. The table contains 15 rows of task data. At the bottom right of the table, there is a page number "1 2 3 4" and a navigation bar with links "1 2 3 4".

Action	TASKID	TASKNAME	TASKSTARTDATE	TASKDUEDATE	TASKSTATUS
Edit Delete	T1	Student Management	1/1/2024 12:00:00 AM	2/20/2024 12:00:00 AM	Not Done
Edit Delete	T2	Library Management	2/1/2024 12:00:00 AM	3/15/2024 12:00:00 AM	Not Done
Edit Delete	T3	Attendance Registration	3/10/2024 12:00:00 AM	4/10/2024 12:00:00 AM	In Progress
Edit Delete	T4	Fee Management	4/15/2024 12:00:00 AM	5/25/2024 12:00:00 AM	Completed
Edit Delete	T5	Mobile App Development	5/1/2024 12:00:00 AM	6/20/2024 12:00:00 AM	Not Done
Edit Delete	T6	Student Management	6/5/2024 12:00:00 AM	7/15/2024 12:00:00 AM	In Progress
Edit Delete	T7	Library Management	7/10/2024 12:00:00 AM	8/20/2024 12:00:00 AM	In Progress
Edit Delete	T8	Attendance Registration	8/15/2024 12:00:00 AM	9/25/2024 12:00:00 AM	In Progress
Edit Delete	T9	Fee Management	9/1/2024 12:00:00 AM	10/15/2024 12:00:00 AM	Completed
Edit Delete	T10	Mobile App Development	10/5/2024 12:00:00 AM	11/30/2024 12:00:00 AM	In Progress
Edit Delete	T11	Student Management	12/1/2024 12:00:00 AM	1/15/2025 12:00:00 AM	In Progress
Edit Delete	T12	Library Management	1/1/2025 12:00:00 AM	2/10/2025 12:00:00 AM	Not Done
Edit Delete	T13	Attendance Registration	2/15/2025 12:00:00 AM	3/20/2025 12:00:00 AM	Not Done
Edit Delete	T14	Fee Management	3/5/2025 12:00:00 AM	4/10/2025 12:00:00 AM	In Progress
Edit Delete	T15	Mobile App Development	4/1/2025 12:00:00 AM	5/20/2025 12:00:00 AM	In Progress

Figure 86 user manual task

- Let's look into the complex forms now.
- The **Complex Form** allows users to select specific values from dropdown menus to filter or input data efficiently. The form is designed to enhance user experience by ensuring data accuracy and reducing manual input errors.

PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	MILESTONEID	MILESTONENAME	MILESTONEUEDATE
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	M01	UI Design Deployment	1/15/2025 12:00:00 AM
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	M16	Alpha Testing	2/1/2025 12:00:00 AM
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	1	new milew	5/25/2025 12:00:00 AM
1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	m1	new milewasd	5/25/2025 12:00:00 AM

Figure 87 user manual complex form

- Select a project name from the dropdown shown in the picture.
- It allows users to select a project from the list.
- On selection, the form dynamically updates the section to show Project Milestones selected project.

USERID	USERNAME	USEREMAIL	USERCONTACT	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
User 1	Ikshit Maharjan	ikshit.maharjan@example.com	9841234567	1	Web Development	1/1/2025 12:00:00 AM	6/1/2025 12:00:00 AM	In Progress

Figure 88 user manual user project

Also in “**User Project**” you can see dropdown form from which you can show details of the user and the details of all the projects that he/she has been working or has worked on.

- Lastly for Top performer. It is same as the other complex forms.
- For any project, show the details of top 3 user who has done the most task).

Top Performers

User ID	Username	User Email	User Contact	Tasks Completed
User 24	Rahul Joshi	rahul.joshi@example.com	9845678910	1
User 4	Sita Shajam	DropDownList	9823456789	1

Figure 89 user manual top performer

You can use dropdown to check the details of top 3 user who have done most tasks.

13. Testing

13.1. Test for CRUD in Project Details:

Test NO:	1
Objectives:	To test the create, read, update and delete of Project table
Action:	<p>For table creation:</p> <ul style="list-style-type: none"> • Click Add New Student button. • Fill the values: <p>PRJID=122</p> <p>PRJNAME = FYP</p> <p>PRJSTARTDATE= 9/10/2025 12:00:00 AM</p> <p>PRJENDDATE= 9/10/2025 12:00:00 AM</p> <p>PRJSTATUS= IN PROGRESS</p> <ul style="list-style-type: none"> • Click on the edit button. • Update some values. • Click on the update button. For table deletion: • Click on the delete button
Expected Result:	The CRUD operation should be executed successfully
Actual Result:	The execution of the CRUD operation was observed to be successful.
Conclusion:	The test was successful.

Table 6 Test case for CRUD in Project details

Task	Edit Delete	13	Web Development	1/5/2025 12:00:00 AM	6/5/2025 12:00:00 AM	In Progress
SubTask	Edit Delete	14	Application Development	3/10/2025 12:00:00 AM	9/10/2025 12:00:00 AM	Active
User Project	Edit Delete	15	E-commerce	2/10/2025 12:00:00 AM	8/10/2025 12:00:00 AM	Completed
Project						12
Milestone						
Top Performers	<div style="border: 1px solid black; padding: 5px;"> PRJID: 122 PRJNAME: FYP PRJSTARTDATE: 9/10/2025 12:00:00 AM PRJDUEDATE: 9/10/2026 12:00:00 AM PRJSTATUS: In progress <input type="button" value="Update Cancel"/> </div>					

Figure 90 add values

Project Details

Action	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
Edit Delete	11	Data and Web Development	3/15/2025 12:00:00 AM	9/15/2025 12:00:00 AM	Active
Edit Delete	12	AI Coursework	2/25/2025 12:00:00 AM	8/25/2025 12:00:00 AM	Completed
Edit Delete	13	Web Development	1/5/2025 12:00:00 AM	6/5/2025 12:00:00 AM	In Progress
Edit Delete	14	Application Development	3/10/2025 12:00:00 AM	9/10/2025 12:00:00 AM	Active
Edit Delete	15	E-commerce	2/10/2025 12:00:00 AM	8/10/2025 12:00:00 AM	Completed
Edit Delete	122	FYP	9/10/2025 12:00:00 AM	9/10/2026 12:00:00 AM	In progress
			12		
<input type="button" value="New"/>					

Figure 91 project value added

Project Details

Dashboard						
User	Action	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
Projects	Edit Delete	11	Data and Web Development	3/15/2025 12:00:00 AM	9/15/2025 12:00:00 AM	Active
Milestone	Edit Delete	12	AI Coursework	2/25/2025 12:00:00 AM	8/25/2025 12:00:00 AM	Completed
Task	Edit Delete	13	Web Development	1/5/2025 12:00:00 AM	6/5/2025 12:00:00 AM	In Progress
SubTask	Edit Delete	14	Application Development	3/10/2025 12:00:00 AM	9/10/2025 12:00:00 AM	Active
User Project	Edit Delete	15	E-commerce	2/10/2025 12:00:00 AM	8/10/2025 12:00:00 AM	Completed
Project	Update Cancel	122	FYP	9/10/2025 12:00:00 AM	9/10/2025 12:00:00 AM	In progress
Milestone				12		
Top Performers	<input type="button" value="New"/>					

Figure 92 update new added values

Project Details

Action	PRJID	PRJNAME	PRJSTARTDATE	PRJDUEDATE	PRJSTATUS
Edit Delete	11	Data and Web Development	3/15/2025 12:00:00 AM	9/15/2025 12:00:00 AM	Active
Edit Delete	12	AI Coursework	2/25/2025 12:00:00 AM	8/25/2025 12:00:00 AM	Completed
Edit Delete	13	Web Development	1/5/2025 12:00:00 AM	6/5/2025 12:00:00 AM	In Progress
Edit Delete	14	Application Development	3/10/2025 12:00:00 AM	9/10/2025 12:00:00 AM	Active
Edit Delete	15	E-commerce	2/10/2025 12:00:00 AM	8/10/2025 12:00:00 AM	Completed

12

[New](#)

Figure 93 delete the added project

13.2. Test for CRUD in User:

Test NO:	2
Objectives:	To test the create, read, update and delete of User table
Action:	<p>For table creation:</p> <ul style="list-style-type: none"> • Click Add New Student button. • Fill the values: <p>UserID=122</p> <p>USERNAME= iks</p> <p>USEREMAIL= 123ikshit.maharjan@gmail.com</p> <p>USERCONTACT= 9810101010</p> <ul style="list-style-type: none"> • Click on the edit button. • Update some values. • Click on the update button. For table deletion: • Click on the delete button
Expected Result:	The CRUD operation should be executed successfully
Actual Result:	The execution of the CRUD operation was observed to be successful.
Conclusion:	The test was successful.

Table 7 Test for CRUD in User

Edit Delete	User 10
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USERID:	122
USERNAME:	iks
USEREMAIL:	123ikshit.maharjan@gmail.com
USERCONTACT:	98101010
Insert Cancel	

Figure 94 add values

User Details

User Details					
Dashboard	Action	USERID	USERNAME	USEREMAIL	USERCONTACT
User	Edit Delete	122	iks	123ikshit.maharjan@gmail.com	98101010
Projects					
Milestone					
Task				1234	
SubTask					
User Project	New				

Figure 95 value added successfully

User Details

User Details					
Dashboard	Action	USERID	USERNAME	USEREMAIL	USERCONTACT
User	Update Cancel	122	Ikshit new user	123ikshit.maharjan@gmail.com	98101010
Projects					
Milestone					
Task				1234	
SubTask					
User Project	New				
Project					

Figure 96 update value

User Details					
Dashboard		User Details			
User	Action	USERID	USERNAME	USEREMAIL	USERCONTACT
Projects	Edit Delete	122	ikshith new user	123ikshitmaharjan@gmail.com	98101010
Milestone				1234	
Task					
SubTask					
User Project	New				

Figure 97 updated success

User Details					
Dashboard		User Details			
User	Action	USERID	USERNAME	USEREMAIL	USERCONTACT
Projects	Edit Delete	User 21	Suman Adhikari	suman.adhikari@example.com	9845678907
Milestone	Edit Delete	User 22	Sanjay Rana	sanjay.rana@example.com	9845678908
Task	Edit Delete	User 23	Anjali Poudel	anjali.poudel@example.com	9845678909
SubTask	Edit Delete	User 24	Rahul Joshi	rahul.joshi@example.com	9845678910
User Project	Edit Delete	User 25	Nisha Sharma	nisha.sharma@example.com	9845678911
Project	Edit Delete	User 26	Kriti Thapa	kriti.thapa@example.com	9845678912
...	Edit Delete	User 27	Rohit Gautam	rohit.gautam@example.com	9845678913
	Edit Delete	User 28	Rohan Patil	rohan.patil@example.com	9845678914
	Edit Delete	User 29	Geeta Sharma	geeta.sharma@example.com	9845678915
	Edit Delete	User 30	Ritu Maharjan	ritu.maharjan@example.com	9845678930
				123	

Figure 98 delete value

13.3. Test for CRUD in Milestone:

Test NO:	3
Objectives:	To test the create, read, update and delete of Milestone table
Action:	<p>For table creation:</p> <ul style="list-style-type: none"> • Click Add New Student button. • Fill the values: MLESTONE ID:m20 PRJID:1 MLESTONE NAME: debugging MLESTONEDUEDATE: 3/20/2025 12:00:00 AM <p>• Click on the edit button.</p> <p>• Update some values.</p> <p>• Click on the update button. For table deletion:</p> <p>• Click on the delete button</p>
Expected Result:	The CRUD operation should be executed successfully
Actual Result:	The execution of the CRUD operation was observed to be successful.
Conclusion:	The test was successful.

Table 8 test for CRUD in Milestone table

MILESTONEID:	M20
PRJID:	1
MILESTONENAME:	debugging
MILESTONEUEDATE:	3/20/2025 12:00:00 AM
Insert Cancel	

Figure 99 adding value

Milestone

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Edit Delete	1	1	new milew	5/25/2025 12:00:00 AM
Edit Delete	m1	1	new milewasd	5/25/2025 12:00:00 AM
Edit Delete	M20	1	debugging	3/20/2025 12:00:00 AM
1 2 3 4				

Figure 100 value added successfully

Update Cancel	M20	1	debugging- code	3/20/2025 12:00:00 AM
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Figure 101 Update value

Milestone

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Edit Delete	1	1	new milew	5/25/2025 12:00:00 AM
Edit Delete	m1	1	new milewasd	5/25/2025 12:00:00 AM
Edit Delete	M20	1	debugging- code	3/20/2025 12:00:00 AM
1 2 3 4				

Figure 102 value added successfully

Milestone

Action	MILESTONEID	PRJID	MILESTONENAME	MILESTONEUEDATE
Edit Delete	1	1	new milew	5/25/2025 12:00:00 AM
Edit Delete	m1	1	new milewasd	5/25/2025 12:00:00 AM
1 2 3 4				

New



Figure 103 delete milestone

14. Further Discussion

In this coursework I was able to learn, build and develop a web-based database application during this semester. The project had a number of difficulties, especially when it came to managing time restrictions while learning and using new .NET and SQL language. But with the correct guidance of tutors, conquering these challenges was easier which enhanced my technical proficiency and comprehension of full-stack programming.

I acquired a variety of tools/ technique and information in this class, some of them are:

1. ASP.NET Web Forms Development: Using ASP.NET to create web applications, controlling controls such as GridView and DropDownList, and SqlDataSource.
2. Writing effective SQL queries including joins, subqueries, and indexing to enhance database speed is known as SQL Query Optimization.
3. Entity-Relationship (ER) modelling is the process of using ER diagrams to design a well-structured database and making sure that redundancy is removed through all step by step process of normalization.
4. The Oracle SQL Developer Data Modeller was a useful tool for creating SQL scripts, establishing table topologies, and visualizing database systems.
5. .NET Debugging and Troubleshooting: I improved my problem-solving skills by debugging in Visual Studio, fixing errors/warnings, and resolving SQL execution issues on the online form which helped me increase my knowledge.

15. Conclusion

Concluding this coursework I got to learn a lot about planning and implementing a web-based database application through this Project. To build a useful and interactive system, the project needed to integrate a number of technologies, including ASP.NET, C#, and SQL, Bootstrap, and web forms. I always had difficulties with database normalization, SQL query optimization, and dynamic online form handling while working on this project, however overcoming these difficulties really enhanced my ability to solve problems.

This module has made me more capable of handling database and database relationships together with writing efficient queries / working with web elements that included dropdown menus and data grids. The experience of working with SQL data sources through ASP.NET demonstrated the method online applications can connect to databases efficiently

The course taught me better technical capabilities along with improved full-stack programming knowledge. The class confirmed that efficient data processing with responsive interfaces and properly structured databases represents core elements in programming success. These skills will allow me to develop more dependable and scalable applications in the future. .

16. References

IBM. (2024) *What is an Entity Relationship Diagram? | IBM* [Online]. Available from: <https://www.ibm.com/think/topics/entity-relationship-diagram> [Accessed 25 march 2025].

17. Appendix

coursework

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