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Student Name: Avinav Baral

London Met ID: 22085508

College ID: np01cp4s230116@isligtoncollege.edu.np

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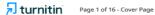
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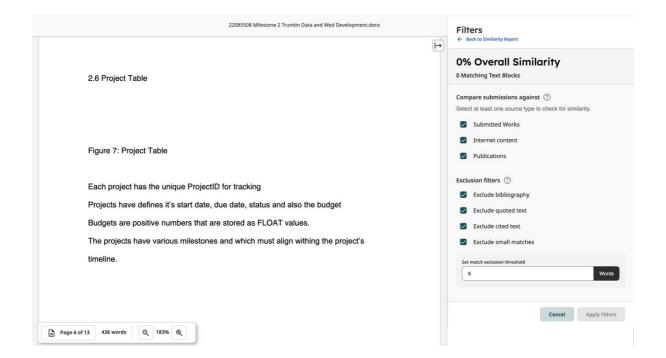
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1. Final ERD

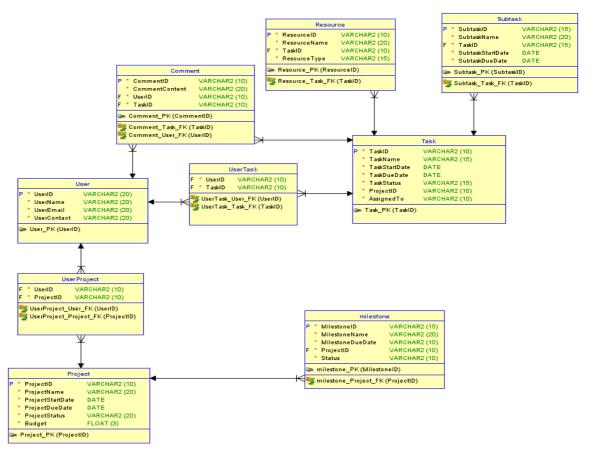


Figure 1: Final ERD

Assumptions

- Each of those tables have its own primary key to ensure the uniqueness and to prevent duplicate records
- It contains the foreign key and these foreign key maintains the relationships between tables to ensure referential integrity.
- All attributes are defined with their appropriate data types also the sizes example VARCHAR (10)
- This also supports adding the more data.
- Considering the many to many relation between the user and task and user and project, here the UserTask is one of the bridge entity and UserProject is another bridge entity between them.

2. DDL Preview

2.1 User table

```
DDL Preview

1 CREATE TABLE "User" (
2 userid VARCHAR2(10) NOT NULL,
3 username VARCHAR2(20) NOT NULL,
4 useremail VARCHAR2(20) NOT NULL,
5 usercontact VARCHAR2(20) NOT NULL
6 );
7
8 ALTER TABLE "User" ADD CONSTRAINT user_pk PRIMARY KEY ( userid );

Table "User" created.

Table "User" altered.
```

Figure 2: User table

- Each user has a unique "Userid" for its own identification
- Users must provide the valid email address and contact numbers
- Users can also participate in multiple projects using the linking tables

2.2 Task Table

```
DDL Preview
  1 □ CREATE TABLE task (
  2
           taskid VARCHAR2(10) NOT NULL,
                         VARCHAR2 (15) NOT NULL,
           taskname
          taskstartdate DATE NOT NULL,
  5
           taskduedate DATE NOT NULL,
          taskstatus VARCHAR2(15) NOT NULL,
projectid VARCHAR2(10) NOT NULL,
assignedto VARCHAR2(10) NOT NULL
  6
  7
  8
  9
     1);
 10
     ALTER TABLE task ADD CONSTRAINT task pk PRIMARY KEY ( taskid );
 11
Table TASK created.
Table TASK altered.
```

Figure 3: Task Table

- Each task has a unique "taskid" for its own identification
- Tasks are associated with specific projects through the projectID
- Tasks have start dates, due dates, and statuses such as Pending, In Progress, and Completed.
- Tasks can be assigned to only one user (Assigned to)

2.3 Comment Table

```
Preview
   1 CREATE TABLE "Comment" (
          commentid
                        VARCHAR2 (10) NOT NULL,
          commentcontent VARCHAR2 (20) NOT NULL,
          userid VARCHAR2(10) NOT NULL,
taskid VARCHAR2(10) NOT NULL
   5
   6
      );
   7
   8
      ALTER TABLE "Comment" ADD CONSTRAINT comment_pk PRIMARY KEY ( commentid );
   9
     ALTER TABLE "Comment"
  10
       ADD CONSTRAINT comment task fk FOREIGN KEY ( taskid )
  11
  12
              REFERENCES task ( taskid );
  13
  14 ALTER TABLE "Comment"
       ADD CONSTRAINT comment_user_fk FOREIGN KEY ( userid )
  15
             REFERENCES "User" ( userid );
Table "Comment" created.
```

Figure 4: Comment Table

Table "Comment" altered.

- Each comment has the unique "CommmentID"
- These comments are linked with specific tasks and specific users
- Comments contents is limited as it have VARCHAR (20) so, limited text are and also only supports text.

2.4 Resource Table

```
DDL Preview
  1 CREATE TABLE "Resource" (
       resourceid VARCHAR2(10) NOT NULL,
        resourcename VARCHAR2(20) NOT NULL,
        taskid VARCHAR2(10) NOT NULL,
        resourcetype VARCHAR2(15) NOT NULL
  δ
    );
    ALTER TABLE "Resource" ADD CONSTRAINT resource_pk PRIMARY KEY ( resourceid );
  8
 10 ALTER TABLE "Resource"
 11
       ADD CONSTRAINT resource_task_fk FOREIGN KEY ( taskid )
 12
           REFERENCES task ( taskid );
Table "Resource" created.
Table "Resource" altered.
```

Figure 5: Resource Table

- Resources have the unique "ResourceID" for its own identification as the primary key
- Resources can be categorized as humans, or other materials

2.5 Subtask Table

```
👺 DDL Preview
   1 CREATE TABLE subtask (
         subtaskid
                         VARCHAR2(10) NOT NULL,
  3
          subtaskname
                          VARCHAR2 (20) NOT NULL,
                         VARCHAR2(10) NOT NULL,
          subtaskstartdate DATE NOT NULL,
          subtaskduedate DATE NOT NULL
  δ
  7 | 1);
  8
  9 ALTER TABLE subtask ADD CONSTRAINT subtask pk PRIMARY KEY ( subtaskid );
 10
 11 ALTER TABLE subtask
         ADD CONSTRAINT subtask task fk FOREIGN KEY ( taskid )
 12
 13
             REFERENCES task ( taskid );
Table SUBTASK created.
Table SUBTASK altered.
```

Figure 6: Subtask Table

- Subtask has unique "SubtaskID"
- Subtasks are linked to tasks through TaskID.
- Subtasks must have valid start and due dates within the parent task's timeline.

2.6 Project Table

```
👺 DDL Preview
 1 □ CREATE TABLE project (
 2
                         VARCHAR2(10) NOT NULL,
        projectid
 3
        projectname VARCHAR2(20) NOT NULL,
 4
        projectstartdate DATE NOT NULL,
 5
        projectduedate DATE NOT NULL,
 6
        projectstatus VARCHAR2(20) NOT NULL,
 7
                         FLOAT(3) NOT NULL
        budget
 8
    1);
 9
10
   ALTER TABLE project ADD CONSTRAINT project_pk PRIMARY KEY ( projectid );
```

```
Table PROJECT created.

Table PROJECT altered.
```

Figure 7: Project Table

- Each project has the unique ProjectID for tracking
- Projects have defines it's start date, due date, status and also the budget
- Budgets are positive numbers that are stored as FLOAT values.
- The projects have various milestones and which must align withing the project's timeline.

2.7 Milestone Table

```
DDL Preview
   1 CREATE TABLE milestone (
          milestoneid VARCHAR2(10) NOT NULL,
milestonename VARCHAR2(20) NOT NULL,
   3
         milestoneduedate VARCHAR2(10) NOT NULL,
         projectid
                         VARCHAR2(10) NOT NULL,
                           VARCHAR2 (10) NOT NULL
   6
          status
   7
     );
   8
   9 ALTER TABLE milestone ADD CONSTRAINT milestone_pk PRIMARY KEY ( milestoneid );
  10
  11 ALTER TABLE milestone
         ADD CONSTRAINT milestone_project_fk FOREIGN KEY ( projectid )
  12
              REFERENCES project ( projectid );
  13
Table MILESTONE created.
Table MILESTONE altered.
Table MILESTONE altered.
```

Figure 8: Milestone Table

- Each of these milestone have a unique "MilestoneID"
- Milestones are associated with only one project
- These milestones due dates cannot exceed the project's end date.

2.8 UserTask Table

```
DDL Preview
    1 □ CREATE TABLE usertask (
          userid VARCHAR2(10) NOT NULL,
          taskid VARCHAR2(10) NOT NULL
    3
    4
      );
    5
      ALTER TABLE usertask
    7
           ADD CONSTRAINT usertask task fk FOREIGN KEY ( taskid )
               REFERENCES task ( taskid );
    9
   10 ALTER TABLE usertask
          ADD CONSTRAINT usertask_user_fk FOREIGN KEY ( userid )
   11
   12
               REFERENCES "User" ( userid );
Table USERTASK created.
Table USERTASK altered.
```

Figure 9: UserTask Table

Table USERTASK altered.

2.9 UserProject Table

```
DDL Preview
  1 ☐ CREATE TABLE userproject (
        userid VARCHAR2(10) NOT NULL,
        projectid VARCHAR2(10) NOT NULL
  4 );
  5
  6 ALTER TABLE userproject
  7
        ADD CONSTRAINT userproject_project_fk FOREIGN KEY ( projectid )
  8
             REFERENCES project ( projectid );
  9
 10 ALTER TABLE userproject
 11
        ADD CONSTRAINT userproject_user_fk FOREIGN KEY ( userid )
            REFERENCES "User" ( userid );
 12
Table USERPROJECT created.
Table USERPROJECT altered.
Table USERPROJECT altered.
```

Figure 10: UserProject Table

1. Table Insert

3.1 User Table

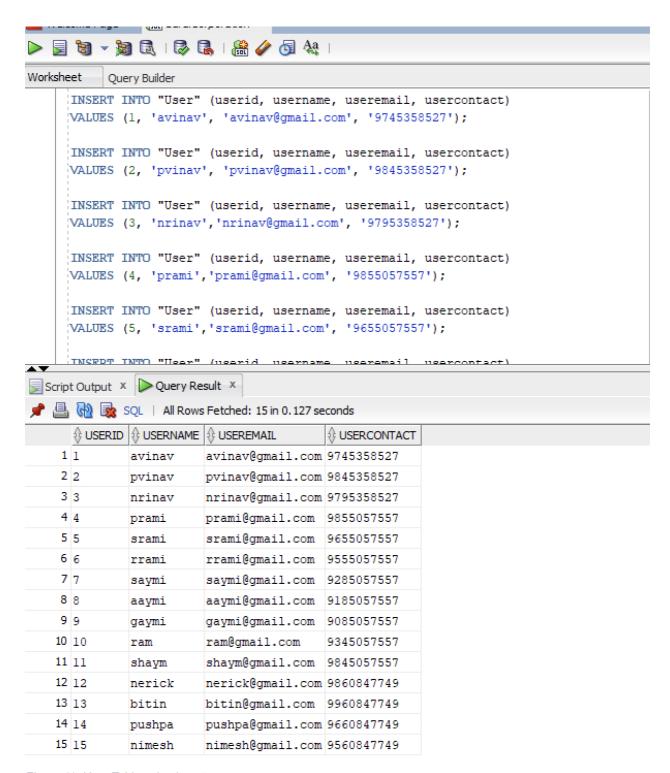


Figure 11: User Table value insert

3.2 Task Table

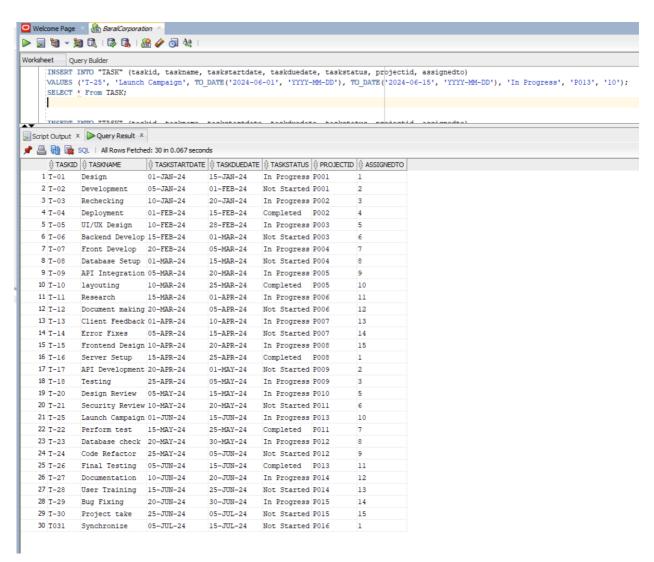


Figure 12: Task Table value insert

3.3 Comment Table

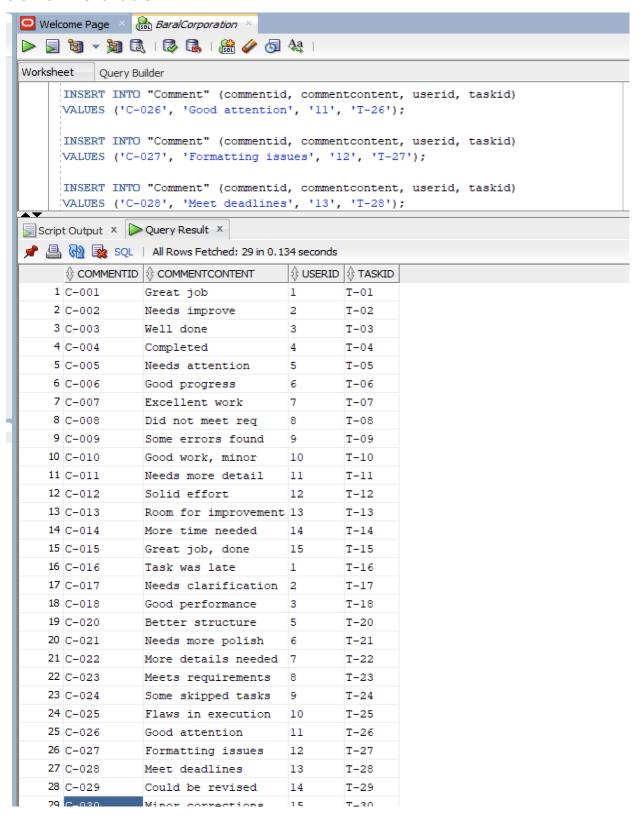


Figure 13: Comment Table value insert

3.4 Resource Table

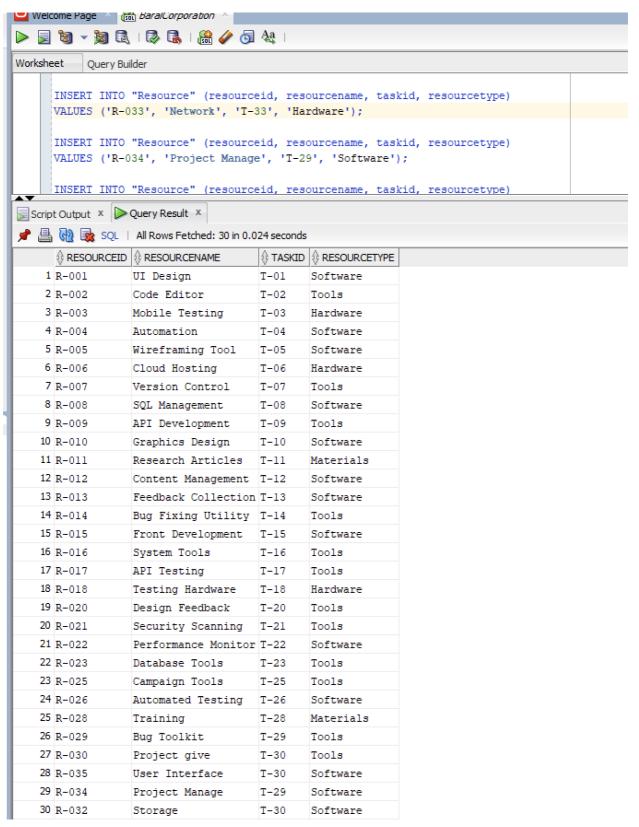


Figure 14: Resource Table value insert

3.5 Subtask Table

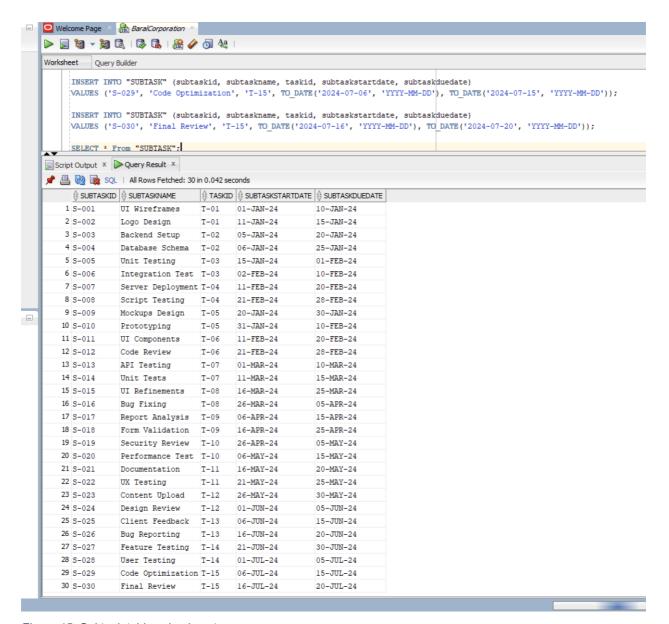


Figure 15: Subtask table value insert

3.6 Project Table

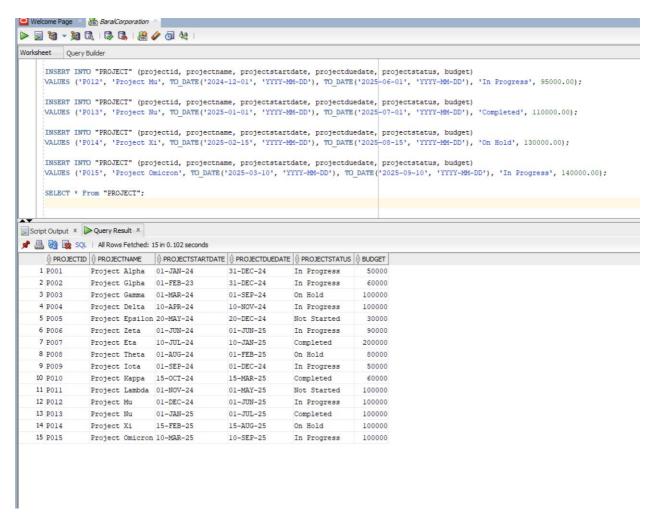


Figure 16: Project Table value insert

3.7 Milestone Table

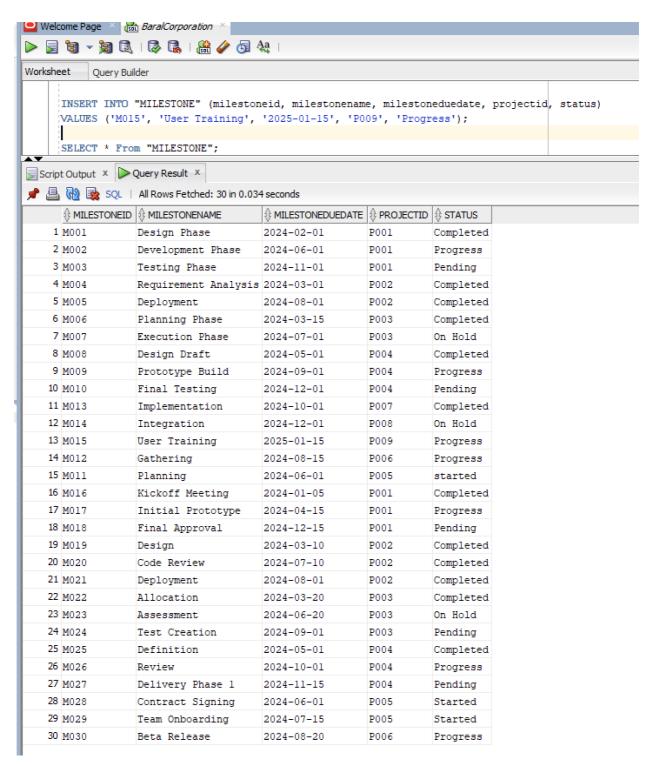


Figure 17: Milestone Table value insert

3.8 UserTask Table

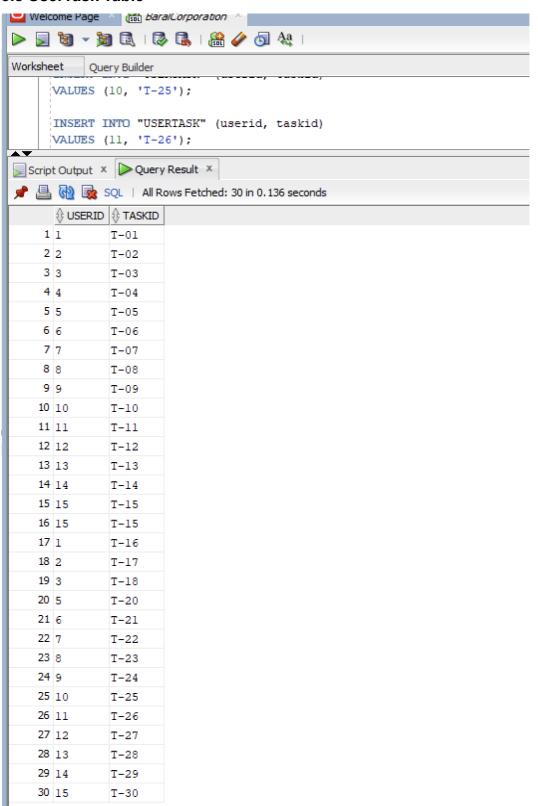


Figure 18: UserTask Table value insert

3.9 UserProject Table

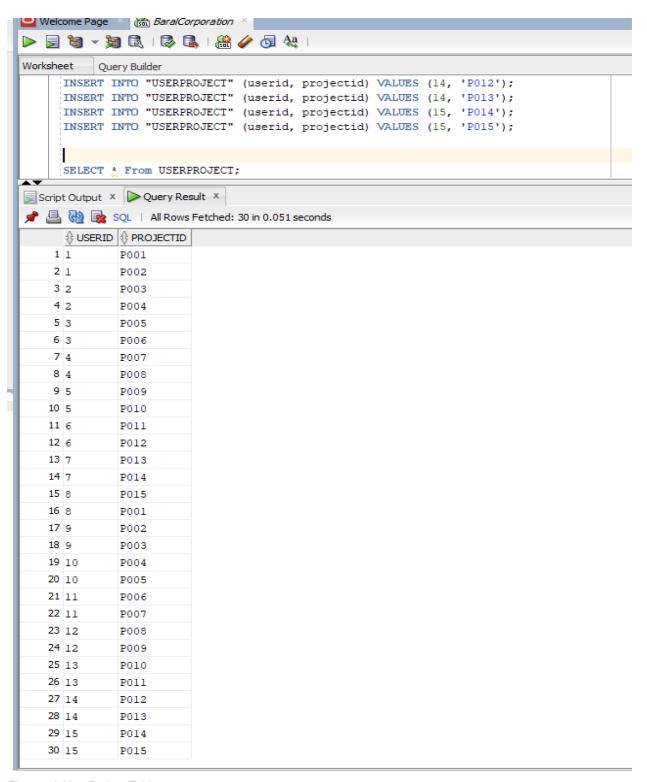


Figure 19:UserProject Table