Project Report
Submitted for

DATABASE MANAGEMENT SYSTEM-(UCS310)

PROJECT MANAGEMENT SYSTEM

Submitted by:

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BE Second Year

Submitted to

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THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

Computer Science and Engineering Department

TIET, Patiala

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ABSTRACT

It is very tedious to find and manage projects and research papers using manual or classical processes. The main goal of this project is to build an integrated framework to help the users find projects that suit their needs. Project management system is a system for the management and supervision of projects and research papers. It is a management system that is useful to students, project managers, as well as professors.

DECLARATION

We, the undersigned, solemnly declare that the project report is based on our own work carried out during the course of our study under the supervision of Ms. Shubhangi Aggarwal

We assert that the statements made and conclusions drawn are an outcome of our research work. We further certify that-

I. The work contained in the report is original and has been done by us under the general supervision of our supervisor.

II. The work has not been submitted to any other Institution for any other degree/diploma/certificate in this university or the any other University of India or abroad.

III. We have followed the guidelines provided by the university in writing the report.

IV. Whenever we have used materials (data, theoretical analysis, and text) from other sources, we have given due credit to them in the text of the report and given their details in the references.

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PROBLEM STATEMENT

In the proposed project we will develop a system to manage the ongoing/completed projects in the university. Students and professors can make their profiles on the system, and provide details of their specialization. Accordingly, the system can help them find a project that suits their needs. The users are able to obtain information about relevant projects/research papers and form teams.

OVERVIEW

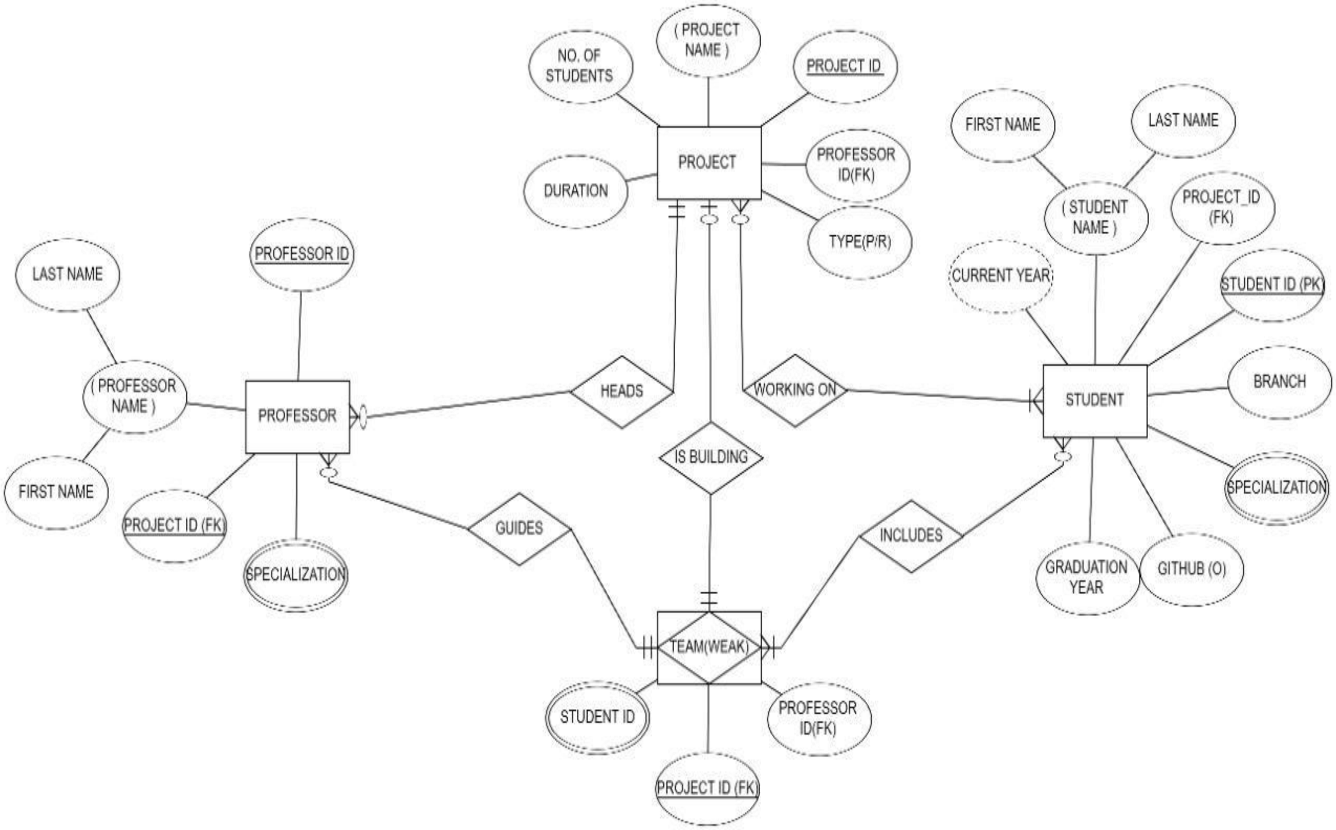
Project-based learning not only provides opportunities for students to collaborate or drive their own learning, but it also teaches them skills such as problem solving, and helps to develop additional skills integral to their future, such as critical thinking and time management.

However, it is burdensome to look for projects/ research papers that match ones interests using conventional methods. This integrated system makes finding projects/research papers significantly more efficient.

Every user can register to database by providing a brief information about themselves. This project also allows the users to filter ongoing projects that match their specialization. Teams can also look for members that have the required skills needed for their projects. Professors can find collaborators for their research papers as well.

We have used Oracle Live SQL for the implementation of this project.

ER DIAGRAM


NO. OF STUDENTS
(PROJECT NAME)
PROJECT ID
PROJECT
DURATION
PROFESSOR ID(FK)
TYPE(P/R)
FIRST NAME
LAST NAME
(STUDENT NAME)
PROJECT_ID (FK)
CURRENT YEAR
STUDENT ID (PK)
BRANCH
STUDENT
SPECIALIZATION
GRADUATION YEAR
GITHUB (O)
LAST NAME
PROFESSOR ID
(PROFESSOR NAME)
PROFESSOR
FIRST NAME
PROJECT ID (FK)
SPECIALIZATION
HEADS
WORKING ON
IS BUILDING
GUIDES
INCLUDES
TEAM(WEAK)
STUDENT ID
PROFESSOR ID(FK)
PROJECT ID (FK)

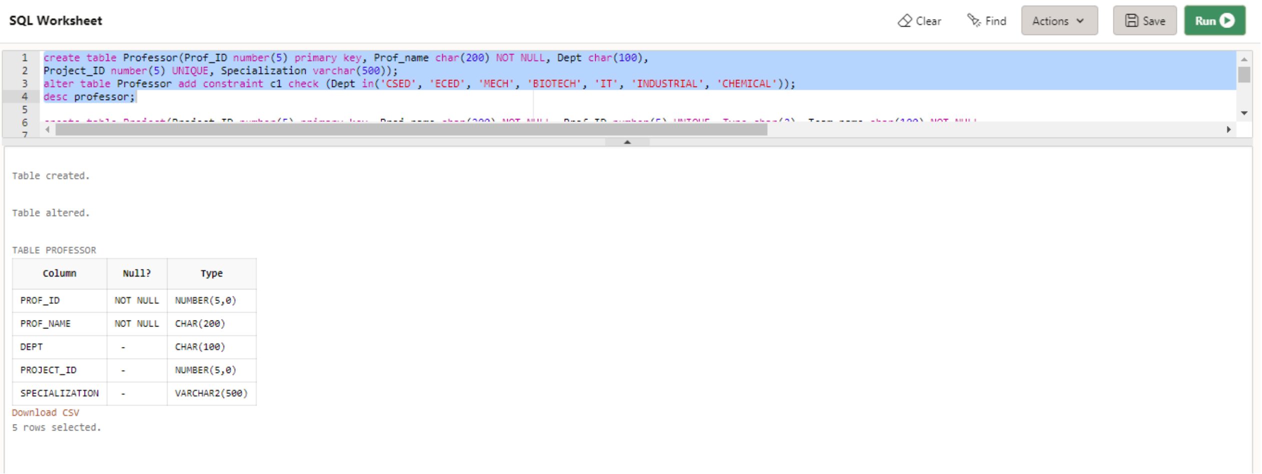
ER TO TABLES

create table Professor(Prof_ID number(5) primary key, Prof_name char(200) NOT NULL, Dept char(100),

Project_ID number(5) UNIQUE, Specialization varchar(500));

alter table Professor add constraint c1 check (Dept in('CSED', 'ECED', 'MECH', 'BIOTECH', 'IT', 'INDUSTRIAL', 'CHEMICAL'));

desc professor;



```
create table Professor(Prof_ID number(5) primary key, Prof_name char(200) NOT NULL, Dept char(100),
Project_ID number(5) UNIQUE, Specialization varchar(500));
alter table Professor add constraint c1 check (Dept in('CSED', 'ECED', 'MECH', 'BIOTECH', 'IT', 'INDUSTRIAL', 'CHEMICAL'));
desc professor;
```

```
Table created.

Table altered.

TABLE PROFESSOR
```

Column	Null?	Type
PROF_ID	NOT NULL	NUMBER(5,0)
PROF_NAME	NOT NULL	CHAR(200)
DEPT	-	CHAR(100)
PROJECT_ID	-	NUMBER(5,0)
SPECIALIZATION	-	VARCHAR2(500)

```
Download CSV
5 rows selected.
```

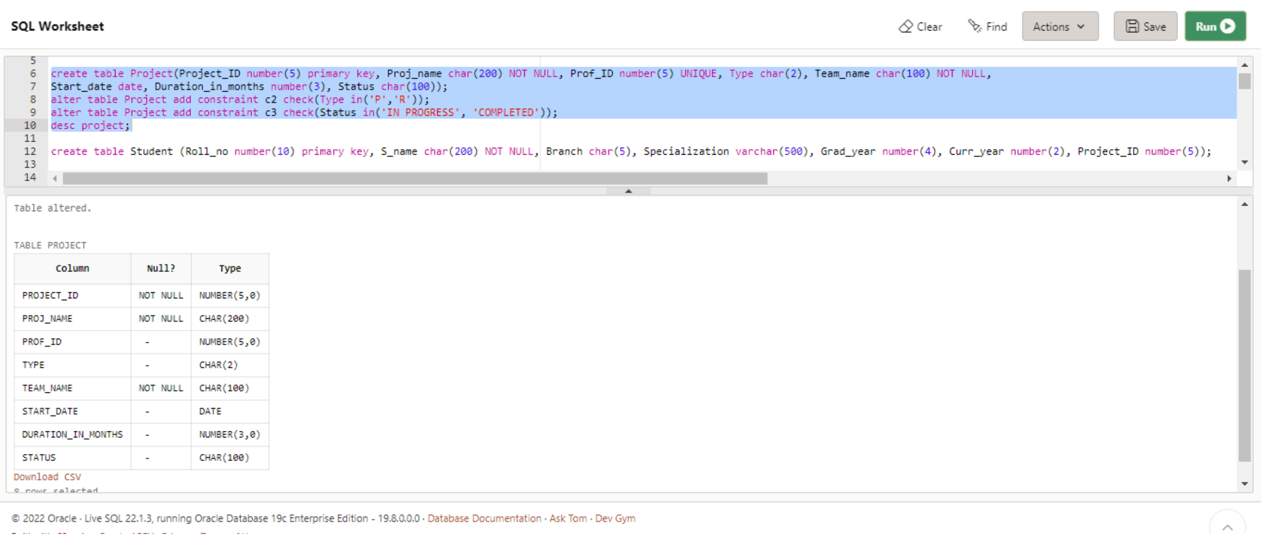
create table Project(Project_ID number(5) primary key, Proj_name char(200) NOT NULL, Prof_ID number(5) UNIQUE, Type char(2), Team_name char(100) NOT NULL,

Start_date date, Duration_in_months number(3), Status char(100));

alter table Project add constraint c2 check(Type in('P','R'));

alter table Project add constraint c3 check(Status in('IN PROGRESS', 'COMPLETED'));

desc project;



```
create table Project(Project_ID number(5) primary key, Proj_name char(200) NOT NULL, Prof_ID number(5) UNIQUE, Type char(2), Team_name char(100) NOT NULL,
Start_date date, Duration_in_months number(3), Status char(100));
alter table Project add constraint c2 check(Type in('P','R'));
alter table Project add constraint c3 check(Status in('IN PROGRESS', 'COMPLETED'));
desc project;

create table Student (Roll_no number(10) primary key, S_name char(200) NOT NULL, Branch char(5), Specialization varchar(500), Grad_year number(4), Curr_year number(2), Project_ID number(5));
```

```
Table altered.
```

TABLE PROJECT

Column	Null?	Type
PROJECT_ID	NOT NULL	NUMBER(5,0)
PROJ_NAME	NOT NULL	CHAR(200)
PROF_ID	-	NUMBER(5,0)
TYPE	-	CHAR(2)
TEAM_NAME	NOT NULL	CHAR(100)
START_DATE	-	DATE
DURATION_IN_MONTHS	-	NUMBER(3,0)
STATUS	-	CHAR(100)

Download CSV

8 rows selected.

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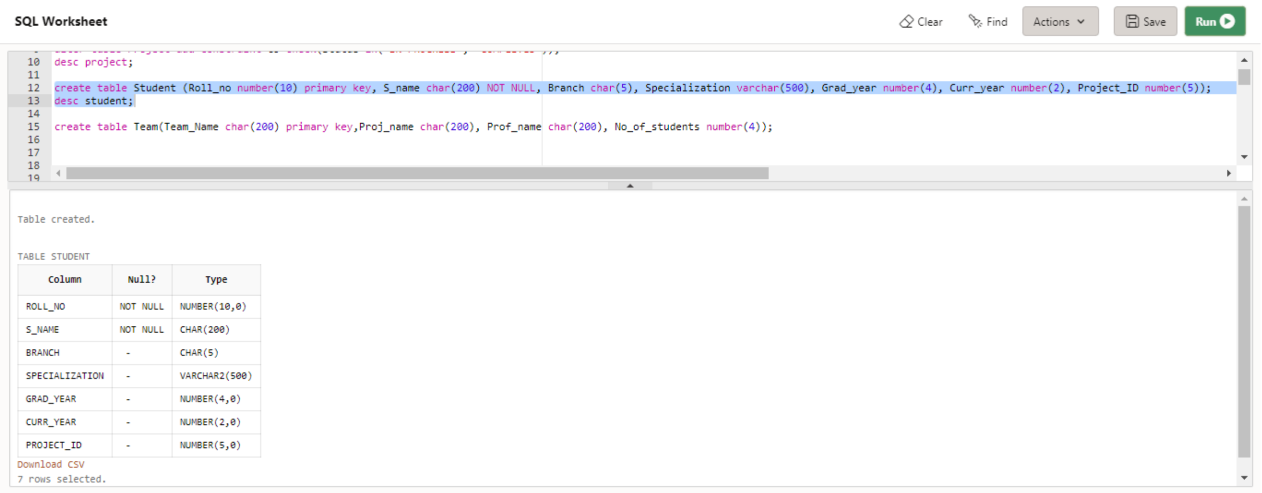
create table Student (Roll_no number(10) primary key, S_name char(200) NOT NULL, Branch char(5), Specialization varchar(500), Grad_year number(4), Curr_year number(2), Project_ID number(5));

desc student;



```
desc project;

create table Student (Roll_no number(10) primary key, S_name char(200) NOT NULL, Branch char(5), Specialization varchar(500), Grad_year number(4), Curr_year number(2), Project_ID number(5));
desc student;

create table Team(Team_Name char(200) primary key,Proj_name char(200), Prof_name char(200), No_of_students number(4));
```

```
Table created.
```

TABLE STUDENT

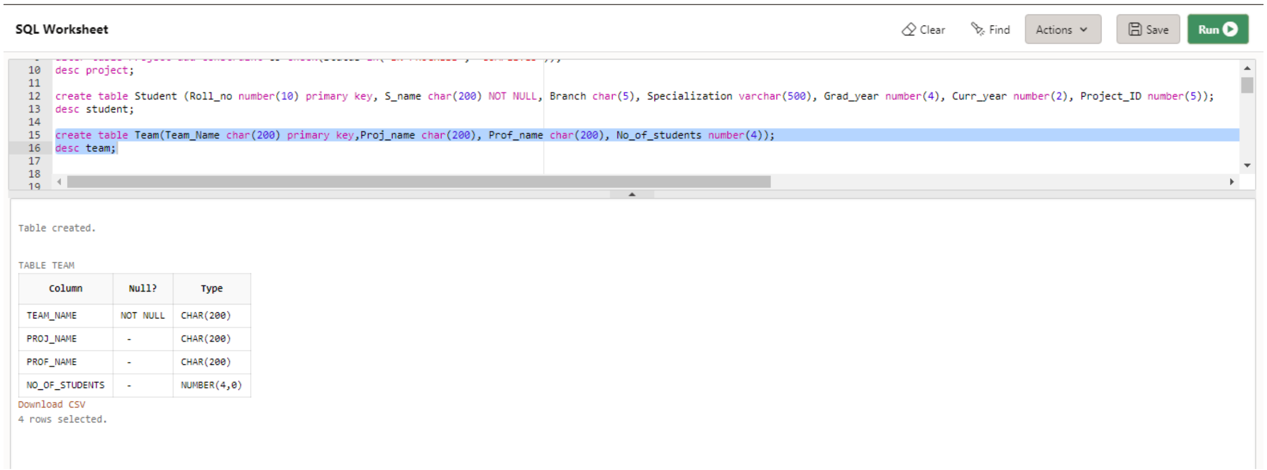
Column	Null?	Type
ROLL_NO	NOT NULL	NUMBER(10,0)
S_NAME	NOT NULL	CHAR(200)
BRANCH	-	CHAR(5)
SPECIALIZATION	-	VARCHAR2(500)
GRAD_YEAR	-	NUMBER(4,0)
CURR_YEAR	-	NUMBER(2,0)
PROJECT_ID	-	NUMBER(5,0)

Download CSV

7 rows selected.

create table Team(Team_Name char(200) primary key,Proj_name char(200), Prof_name char(200), No_of_students number(4));

desc team;



```
desc project;

create table Student (Roll_no number(10) primary key, S_name char(200) NOT NULL, Branch char(5), Specialization varchar(500), Grad_year number(4), Curr_year number(2), Project_ID number(5));
desc student;

create table Team(Team_Name char(200) primary key,Proj_name char(200), Prof_name char(200), No_of_students number(4));
desc team;
```

```
Table created.

TABLE TEAM
```

Column	Null?	Type
TEAM_NAME	NOT NULL	CHAR(200)
PROJ_NAME	-	CHAR(200)
PROF_NAME	-	CHAR(200)
NO_OF_STUDENTS	-	NUMBER(4,0)

Download CSV

4 rows selected.

NORMALISATION

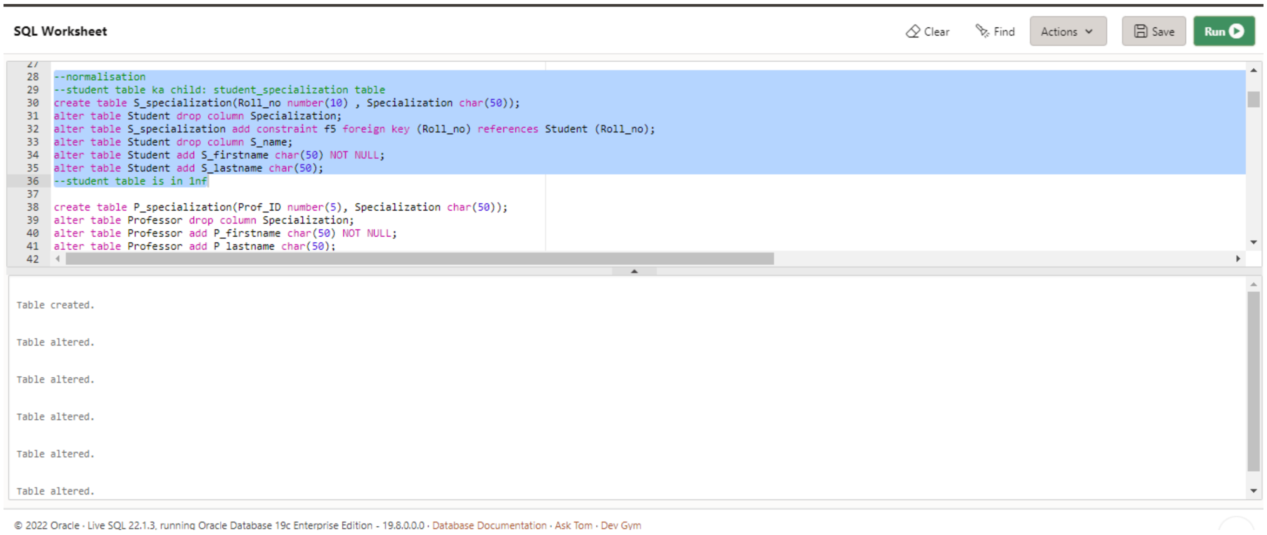
- **1-NF -** We converted every attribute in a relation to a singled valued attribute. Our model contained 2 multivalued attributes in the Student and Professor table respectively - We removed this redundancy by creating two more tables i.e. 'STUDENT - SPECIALIZATION' table and 'PROFESSOR-SPECIALIZATION' table. Further, we converted the 'NAME' attribute to 'FIRST-NAME' and 'SECOND-NAME' since it was a composite attribute.

- **2-NF -** We observed that all the tables were already in 2-NF as each table only one simple primary key.

- **3-NF -** We observed that student and project tables had **transitive dependency** as project id could determine team name. So, we removed the unnecessary columns from the table, that caused transitive dependency.

- **4-NF -** We observed that all the tables were already in 4-NF.

- **5-NF -** We observed that all the tables were already in 5-NF.



```
--normalisation
--student table ka child: student_specialization table
create table S_specialization(Roll_no number(10) , Specialization char(50));
alter table Student drop column Specialization;
alter table S_specialization add constraint f5 foreign key (Roll_no) references Student (Roll_no);
alter table Student drop column S_name;
alter table Student add S_firstname char(50) NOT NULL;
alter table Student add S_lastname char(50);
--student table is in 1nf

create table P_specialization(Prof_ID number(5), Specialization char(50));
alter table Professor drop column Specialization;
alter table Professor add P_firstname char(50) NOT NULL;
alter table Professor add P_lastname char(50);
```

```
Table created.


Table altered.


Table altered.


Table altered.


Table altered.


Table altered.
```

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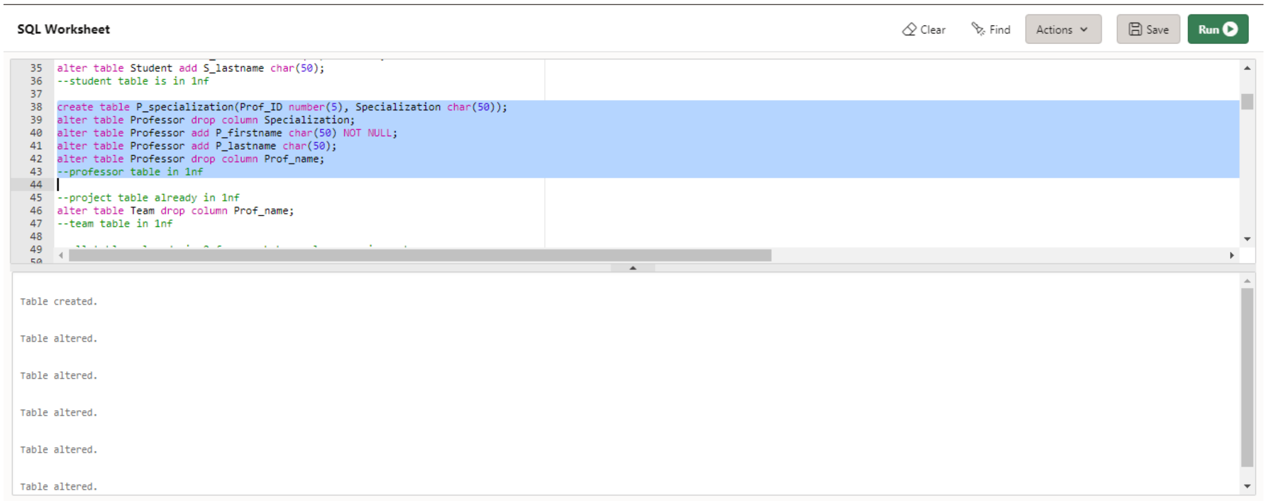
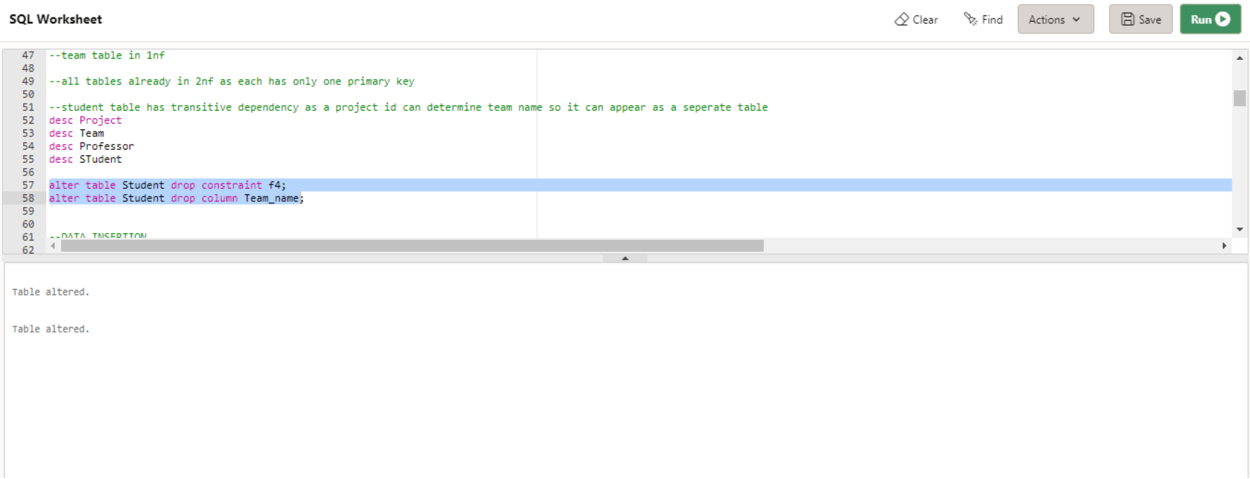


```
alter table Student add S_lastname char(50);
--student table is in 1nf

create table P_specialization(Prof_ID number(5), Specialization char(50));
alter table Professor drop column Specialization;
alter table Professor add P_firstname char(50) NOT NULL;
alter table Professor add P_lastname char(50);
alter table Professor drop column Prof_name;
--professor table in 1nf

--project table already in 1nf
alter table Team drop column Prof_name;
--team table in 1nf
```

```
Table created.


Table altered.


Table altered.


Table altered.


Table altered.


Table altered.
```



```
--team table in 1nf

--all tables already in 2nf as each has only one primary key

--student table has transitive dependency as a project id can determine team name so it can appear as a seperate table
desc Project
desc Team
desc Professor
desc STudent

alter table Student drop constraint f4;
alter table Student drop column Team_name;


--DATA INSERTION
```

```
Table altered.


Table altered.
```

IMPLEMENTATION

--normalisation

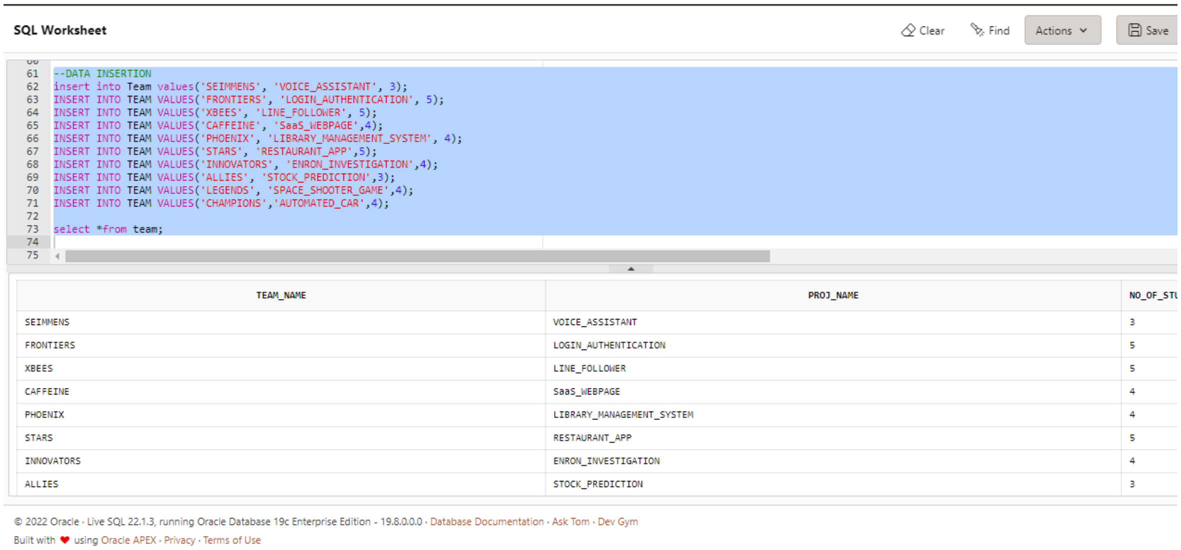
```
--student table ka child: student_specialization table

create table S_specialization(Roll_no number(10) ,
Specialization char(50));

alter table Student drop column Specialization;

alter table S_specialization add constraint f5 foreign key
(Roll_no) references Student (Roll_no);

alter table Student drop column S_name;

alter table Student add S_firstname char(50) NOT NULL;

alter table Student add S_lastname char(50);

--student table is in 1nf


create table P_specialization(Prof_ID number(5),
Specialization char(50));
```

```
alter table Professor drop column Specialization;
alter table Professor add P_firstname char(50) NOT NULL;
alter table Professor add P_lastname char(50);
alter table Professor drop column Prof_name;
--professor table in 1nf

--project table already in 1nf
alter table Team drop column Prof_name;
--team table in 1nf

--all tables already in 2nf as each has only one primary key

--student table has transitive dependency as a project id can determine team name so it can appear as a seperate table
desc Project
desc Team
desc Professor

desc STudent


alter table Student drop constraint f4;

alter table Student drop column Team_name;
```

DATA INSERTION

```
insert into Team values('SEIMMENS', 'VOICE_ASSISTANT', 3);

INSERT INTO TEAM VALUES('FRONTIERS',
'LOGIN_AUTHENTICATION', 5);

INSERT INTO TEAM VALUES('XBEES', 'LINE_FOLLOWER', 5);

INSERT INTO TEAM VALUES('CAFFEINE', 'SaaS_WEBPAGE',4);

INSERT INTO TEAM VALUES('PHOENIX',
'LIBRARY_MANAGEMENT_SYSTEM', 4);

INSERT INTO TEAM VALUES('STARS', 'RESTAURANT_APP',5);

INSERT INTO TEAM VALUES('INNOVATORS',
'ENRON_INVESTIGATION',4);

INSERT INTO TEAM VALUES('ALLIES',
'STOCK_PREDICTION',3);

INSERT INTO TEAM VALUES('LEGENDS',
'SPACE_SHOOTER_GAME',4);

INSERT INTO TEAM
VALUES('CHAMPIONS','AUTOMATED_CAR',4);
```

select *from team;



```
--DATA INSERTION
insert into Team values('SEIMMENS', 'VOICE_ASSISTANT', 3);
INSERT INTO TEAM VALUES('FRONTIERS', 'LOGIN_AUTHENTICATION', 5);
INSERT INTO TEAM VALUES('XBEES', 'LINE_FOLLOWER', 5);
INSERT INTO TEAM VALUES('CAFFEINE', 'SaaS_WEBPAGE',4);
INSERT INTO TEAM VALUES('PHOENIX', 'LIBRARY_MANAGEMENT_SYSTEM', 4);
INSERT INTO TEAM VALUES('STARS', 'RESTAURANT_APP',5);
INSERT INTO TEAM VALUES('INNOVATORS', 'ENRON_INVESTIGATION',4);
INSERT INTO TEAM VALUES('ALLIES', 'STOCK_PREDICTION',3);
INSERT INTO TEAM VALUES('LEGENDS', 'SPACE_SHOOTER_GAME',4);
INSERT INTO TEAM VALUES('CHAMPIONS','AUTOMATED_CAR',4);

select *from team;
```

TEAM_NAME	PROJ_NAME	NO_OF_STU
SEIMMENS	VOICE_ASSISTANT	3
FRONTIERS	LOGIN_AUTHENTICATION	5
XBEES	LINE_FOLLOWER	5
CAFFEINE	SaaS_WEBPAGE	4
PHOENIX	LIBRARY_MANAGEMENT_SYSTEM	4
STARS	RESTAURANT_APP	5
INNOVATORS	ENRON_INVESTIGATION	4
ALLIES	STOCK_PREDICTION	3

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insert into professor values(1001, 'CSED', 'GEETA', 'KASANA');

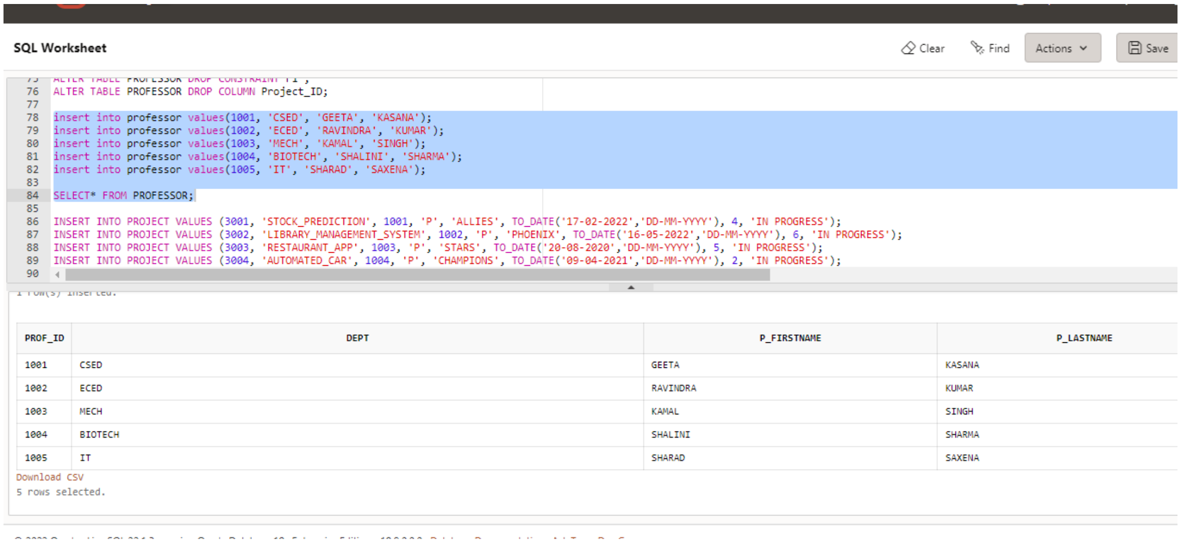
insert into professor values(1002, 'ECED', 'RAVINDRA', 'KUMAR');

insert into professor values(1003, 'MECH', 'KAMAL', 'SINGH');

insert into professor values(1004, 'BIOTECH', 'SHALINI', 'SHARMA');

insert into professor values(1005, 'IT', 'SHARAD', 'SAXENA');

SELECT* FROM PROFESSOR;



```
ALTER TABLE PROFESSOR DROP COLUMN Project_ID;

insert into professor values(1001, 'CSED', 'GEETA', 'KASANA');
insert into professor values(1002, 'ECED', 'RAVINDRA', 'KUMAR');
insert into professor values(1003, 'MECH', 'KAMAL', 'SINGH');
insert into professor values(1004, 'BIOTECH', 'SHALINI', 'SHARMA');
insert into professor values(1005, 'IT', 'SHARAD', 'SAXENA');

SELECT* FROM PROFESSOR;

INSERT INTO PROJECT VALUES (3001, 'STOCK_PREDICTION', 1001, 'P', 'ALLIES', TO_DATE('17-02-2022','DD-MM-YYYY'), 4, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3002, 'LIBRARY_MANAGEMENT_SYSTEM', 1002, 'P', 'PHOENIX', TO_DATE('16-05-2022','DD-MM-YYYY'), 6, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3003, 'RESTAURANT_APP', 1003, 'P', 'STARS', TO_DATE('20-08-2020','DD-MM-YYYY'), 5, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3004, 'AUTOMATED_CAR', 1004, 'P', 'CHAMPIONS', TO_DATE('09-04-2021','DD-MM-YYYY'), 2, 'IN PROGRESS');
```

1 row(s) inserted.

PROF_ID	DEPT	P_FIRSTNAME	P_LASTNAME
1001	CSED	GEETA	KASANA
1002	ECED	RAVINDRA	KUMAR
1003	MECH	KAMAL	SINGH
1004	BIOTECH	SHALINI	SHARMA
1005	IT	SHARAD	SAXENA

Download CSV

5 rows selected.

INSERT INTO PROJECT VALUES (3001, 'STOCK_PREDICTION', 1001, 'P', 'ALLIES', TO_DATE('17-02-2022','DD-MM-YYYY'), 4, 'IN PROGRESS');

INSERT INTO PROJECT VALUES (3002, 'LIBRARY_MANAGEMENT_SYSTEM', 1002, 'P', 'PHOENIX', TO_DATE('16-05-2022','DD-MM-YYYY'), 6, 'IN PROGRESS');

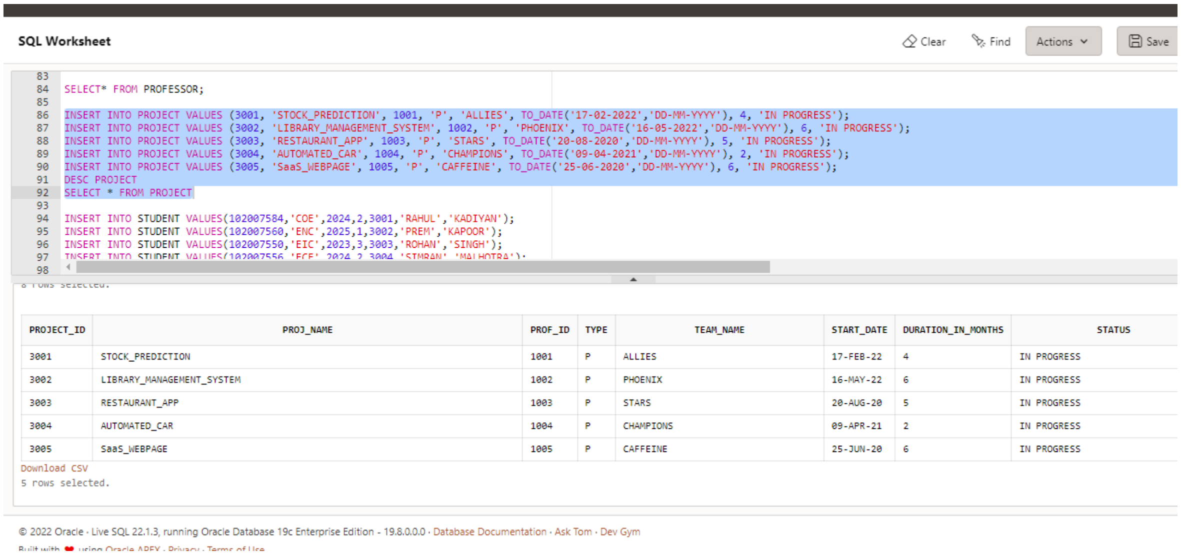
INSERT INTO PROJECT VALUES (3003, 'RESTAURANT_APP', 1003, 'P', 'STARS', TO_DATE('20-08-2020','DD-MM-YYYY'), 5, 'IN PROGRESS');

```
INSERT INTO PROJECT VALUES (3004, 'AUTOMATED_CAR', 1004, 'P', 'CHAMPIONS', TO_DATE('09-04-2021','DD-MM-YYYY'), 2, 'IN PROGRESS');

INSERT INTO PROJECT VALUES (3005, 'SaaS_WEBPAGE', 1005, 'P', 'CAFFEINE', TO_DATE('25-06-2020','DD-MM-YYYY'), 6, 'IN PROGRESS');

DESC PROJECT

SELECT * FROM PROJECT
```



```
SELECT* FROM PROFESSOR;

INSERT INTO PROJECT VALUES (3001, 'STOCK_PREDICTION', 1001, 'P', 'ALLIES', TO_DATE('17-02-2022','DD-MM-YYYY'), 4, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3002, 'LIBRARY_MANAGEMENT_SYSTEM', 1002, 'P', 'PHOENIX', TO_DATE('16-05-2022','DD-MM-YYYY'), 6, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3003, 'RESTAURANT_APP', 1003, 'P', 'STARS', TO_DATE('20-08-2020','DD-MM-YYYY'), 5, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3004, 'AUTOMATED_CAR', 1004, 'P', 'CHAMPIONS', TO_DATE('09-04-2021','DD-MM-YYYY'), 2, 'IN PROGRESS');
INSERT INTO PROJECT VALUES (3005, 'SaaS_WEBPAGE', 1005, 'P', 'CAFFEINE', TO_DATE('25-06-2020','DD-MM-YYYY'), 6, 'IN PROGRESS');
DESC PROJECT
SELECT * FROM PROJECT

INSERT INTO STUDENT VALUES(102007584,'COE',2024,2,3001,'RAHUL','KADIYAN');
INSERT INTO STUDENT VALUES(102007560,'ENC',2025,1,3002,'PREM','KAPOOR');
INSERT INTO STUDENT VALUES(102007550,'EIC',2023,3,3003,'ROHAN','SINGH');
INSERT INTO STUDENT VALUES(102007556,'ECE',2024,2,3004,'SIMRAN','MALHOTRA');
```

```
8 rows selected.
```

PROJECT_ID	PROJ_NAME	PROF_ID	TYPE	TEAM_NAME	START_DATE	DURATION_IN_MONTHS	STATUS
3001	STOCK_PREDICTION	1001	P	ALLIES	17-FEB-22	4	IN PROGRESS
3002	LIBRARY_MANAGEMENT_SYSTEM	1002	P	PHOENIX	16-MAY-22	6	IN PROGRESS
3003	RESTAURANT_APP	1003	P	STARS	20-AUG-20	5	IN PROGRESS
3004	AUTOMATED_CAR	1004	P	CHAMPIONS	09-APR-21	2	IN PROGRESS
3005	SaaS_WEBPAGE	1005	P	CAFFEINE	25-JUN-20	6	IN PROGRESS

Download CSV

```
5 rows selected.
```

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```
INSERT INTO STUDENT VALUES(102007584,'COE',2024,2,3001,'RAHUL','KADIYAN');
```

INSERT INTO STUDENT

VALUES(102007560,'ENC',2025,1,3002,'PREM','KAPOOR');

INSERT INTO STUDENT

VALUES(102007550,'EIC',2023,3,3003,'ROHAN','SINGH');

INSERT INTO STUDENT

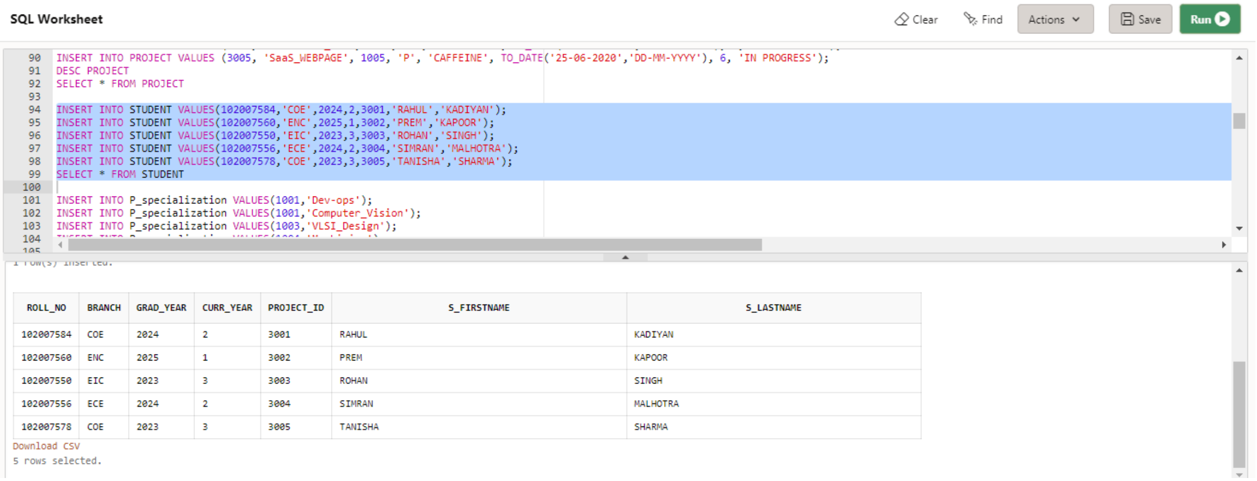
VALUES(102007556,'ECE',2024,2,3004,'SIMRAN','MALHOTRA')

;

INSERT INTO STUDENT

VALUES(102007578,'COE',2023,3,3005,'TANISHA','SHARMA');

SELECT * FROM STUDENT



```
INSERT INTO PROJECT VALUES (3005, 'SaaS_WEBPAGE', 1005, 'P', 'CAFFEINE', TO_DATE('25-06-2020','DD-MM-YYYY'), 6, 'IN PROGRESS');
DESC PROJECT
SELECT * FROM PROJECT

INSERT INTO STUDENT VALUES(102007584,'COE',2024,2,3001,'RAHUL','KADIYAN');
INSERT INTO STUDENT VALUES(102007560,'ENC',2025,1,3002,'PREM','KAPOOR');
INSERT INTO STUDENT VALUES(102007550,'EIC',2023,3,3003,'ROHAN','SINGH');
INSERT INTO STUDENT VALUES(102007556,'ECE',2024,2,3004,'SIMRAN','MALHOTRA');
INSERT INTO STUDENT VALUES(102007578,'COE',2023,3,3005,'TANISHA','SHARMA');
SELECT * FROM STUDENT

INSERT INTO P_specialization VALUES(1001,'Dev-ops');
INSERT INTO P_specialization VALUES(1001,'Computer_Vision');
INSERT INTO P_specialization VALUES(1003,'VLSI_Design');
```

```
1 row(s) inserted.
```

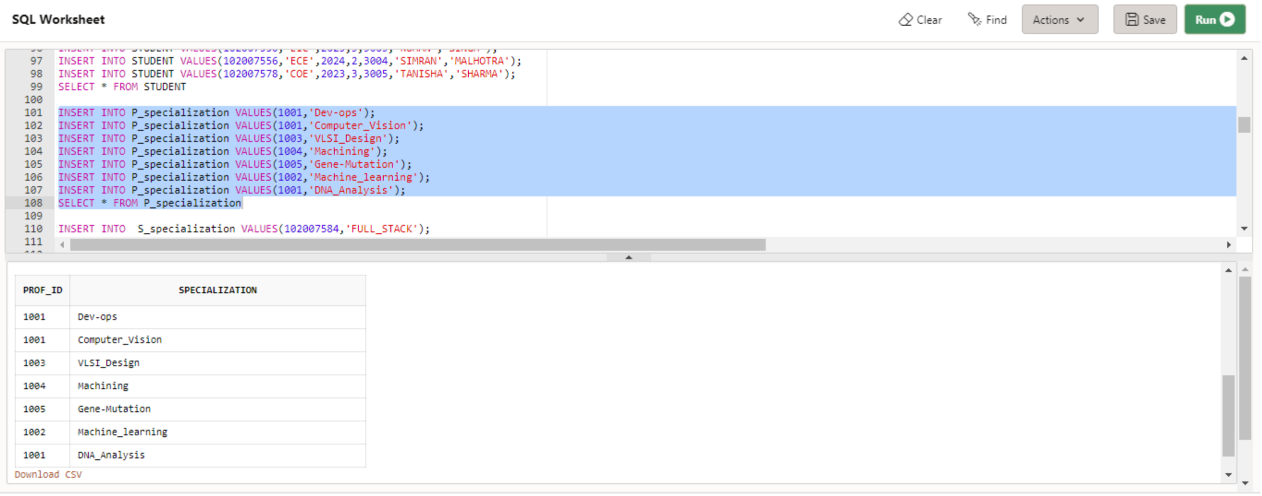
ROLL_NO	BRANCH	GRAD_YEAR	CURR_YEAR	PROJECT_ID	S_FIRSTNAME	S_LASTNAME
102007584	COE	2024	2	3001	RAHUL	KADIYAN
102007560	ENC	2025	1	3002	PREM	KAPOOR
102007550	EIC	2023	3	3003	ROHAN	SINGH
102007556	ECE	2024	2	3004	SIMRAN	MALHOTRA
102007578	COE	2023	3	3005	TANISHA	SHARMA

Download CSV

```
5 rows selected.
```

INSERT INTO P_specialization VALUES(1001,'Dev-ops');

```
INSERT INTO P_specialization VALUES(1001,'Computer_Vision');

INSERT INTO P_specialization VALUES(1003,'VLSI_Design');

INSERT INTO P_specialization VALUES(1004,'Machining');

INSERT INTO P_specialization VALUES(1005,'Gene-Mutation');

INSERT INTO P_specialization VALUES(1002,'Machine_learning');

INSERT INTO P_specialization VALUES(1001,'DNA_Analysis');

SELECT * FROM P_specialization
```



```
INSERT INTO STUDENT VALUES(102007556,'ECE',2024,2,3004,'SIMRAN','MALHOTRA');
INSERT INTO STUDENT VALUES(102007578,'COE',2023,3,3005,'TANISHA','SHARMA');
SELECT * FROM STUDENT

INSERT INTO P_specialization VALUES(1001,'Dev-ops');
INSERT INTO P_specialization VALUES(1001,'Computer_Vision');
INSERT INTO P_specialization VALUES(1003,'VLSI_Design');
INSERT INTO P_specialization VALUES(1004,'Machining');
INSERT INTO P_specialization VALUES(1005,'Gene-Mutation');
INSERT INTO P_specialization VALUES(1002,'Machine_learning');
INSERT INTO P_specialization VALUES(1001,'DNA_Analysis');
SELECT * FROM P_specialization

INSERT INTO  S_specialization VALUES(102007584,'FULL_STACK');
```

PROF_ID	SPECIALIZATION
1001	Dev-ops
1001	Computer_Vision
1003	VLSI_Design
1004	Machining
1005	Gene-Mutation
1002	Machine_learning
1001	DNA_Analysis

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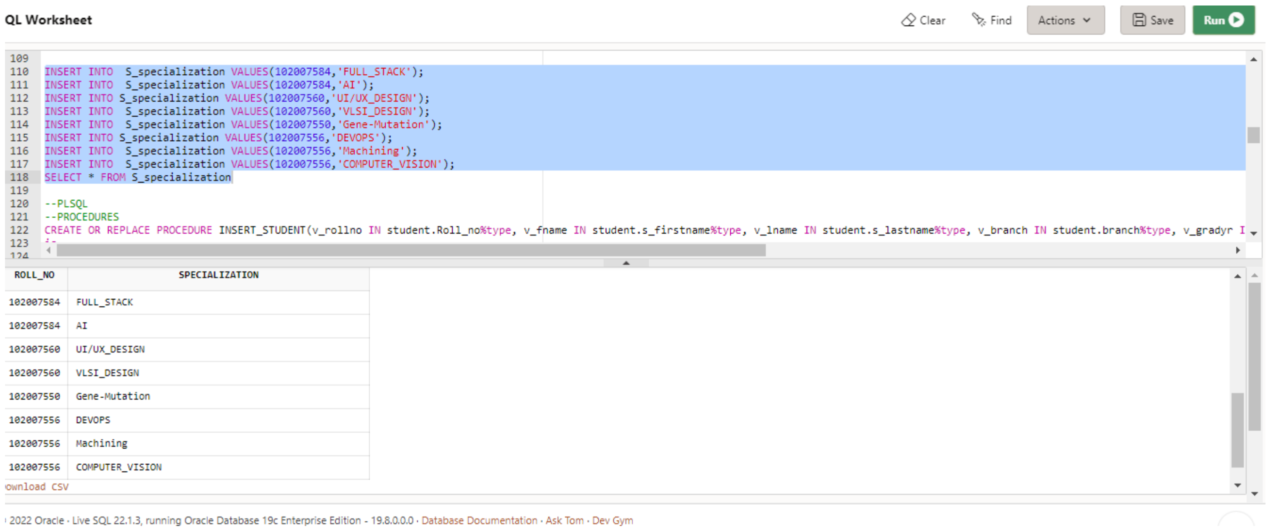
```
INSERT INTO  S_specialization VALUES(102007584,'FULL_STACK');

INSERT INTO  S_specialization VALUES(102007584,'AI');
INSERT INTO S_specialization
VALUES(102007560,'UI/UX_DESIGN');

INSERT INTO  S_specialization
VALUES(102007560,'VLSI_DESIGN');

INSERT INTO  S_specialization
VALUES(102007550,'Gene-Mutation');

INSERT INTO S_specialization VALUES(102007556,'DEVOPS');

INSERT INTO  S_specialization VALUES(102007556,'Machining');

INSERT INTO  S_specialization
VALUES(102007556,'COMPUTER_VISION');

SELECT * FROM S_specialization
```



```

INSERT INTO  S_specialization VALUES(102007584,'FULL_STACK');
INSERT INTO  S_specialization VALUES(102007584,'AI');
INSERT INTO S_specialization VALUES(102007560,'UI/UX_DESIGN');
INSERT INTO  S_specialization VALUES(102007560,'VLSI_DESIGN');
INSERT INTO  S_specialization VALUES(102007550,'Gene-Mutation');
INSERT INTO S_specialization VALUES(102007556,'DEVOPS');
INSERT INTO  S_specialization VALUES(102007556,'Machining');
INSERT INTO  S_specialization VALUES(102007556,'COMPUTER_VISION');
SELECT * FROM S_specialization

--PLSQL
--PROCEDURES
CREATE OR REPLACE PROCEDURE INSERT_STUDENT(v_rollno IN student.Roll_no%type, v_fname IN student.s_firstname%type, v_lname IN student.s_lastname%type, v_branch IN student.branch%type, v_gradyr I
```

ROLL_NO	SPECIALIZATION
102007584	FULL_STACK
102007584	AI
102007560	UI/UX_DESIGN
102007560	VLSI_DESIGN
102007550	Gene-Mutation
102007556	DEVOPS
102007556	Machining
102007556	COMPUTER_VISION

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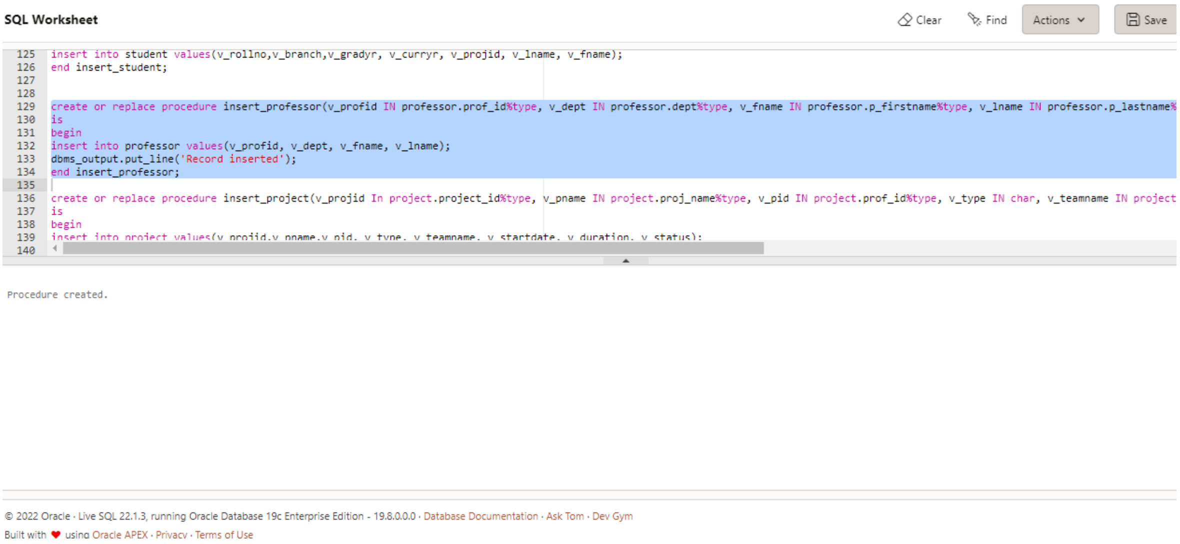
PL/SQL IMPLEMENTATION

PROCEDURES

```
CREATE OR REPLACE PROCEDURE
INSERT_STUDENT(v_rollno IN student.Roll_no%type, v_fname
IN student.s_firstname%type, v_lname IN
student.s_lastname%type, v_branch IN student.branch%type,
v_gradyr IN student.grad_year%type, v_curryr IN
student.curr_year%type, v_projid IN student.project_id%type)

is

begin

insert into student values(v_rollno,v_branch,v_gradyr, v_curryr,
v_projid, v_lname, v_fname);

end insert_student;
```

```
create or replace procedure insert_professor(v_profid IN
professor.prof_id%type, v_dept IN professor.dept%type,
v_fname IN professor.p_firstname%type, v_lname IN
professor.p_lastname%type)

is

begin

insert into professor values(v_profid, v_dept, v_fname,
v_lname);

dbms_output.put_line('Record inserted');

end insert_professor;


create or replace procedure insert_project(v_projid In
project.project_id%type, v_pname IN project.proj_name%type,
v_pid IN project.prof_id%type, v_type IN char, v_teamname IN
project.team_name%type, v_startdate IN
project.start_date%type, v_duration IN
project.duration_in_months%type, v_status IN
project.status%type)

is

begin
```

```
insert into project values(v_projid,v_pname,v_pid, v_type,
v_teamname, v_startdate, v_duration, v_status);

dbms_output.put_line('Record inserted');

end insert_project;


create or replace procedure insert_team(v_teamname IN
team.team_name%type, v_projname IN
team.proj_name%type, v_noofstudents IN
team.no_of_students%type)

is

begin

insert into team values(v_teamname, v_projname,
v_noofstudents);

dbms_output.put_line('Record inserted');

end insert_team;
```



```
insert into student values(v_rollno,v_branch,v_gradyr, v_curryr, v_projid, v_lname, v_fname);
end insert_student;


create or replace procedure insert_professor(v_profid IN professor.prof_id%type, v_dept IN professor.dept%type, v_fname IN professor.p_firstname%type, v_lname IN professor.p_lastname%
is
begin
insert into professor values(v_profid, v_dept, v_fname, v_lname);
dbms_output.put_line('Record inserted');
end insert_professor;

create or replace procedure insert_project(v_projid In project.project_id%type, v_pname IN project.proj_name%type, v_pid IN project.prof_id%type, v_type IN char, v_teamname IN project
is
begin
insert into project values(v_projid,v_pname,v_pid, v_type, v_teamname, v_startdate, v_duration, v_status);
```

```
Procedure created.
```

desc Project

desc Team

desc Professor

desc STudent

desc s_specialization

desc p_specialization

select *from project;

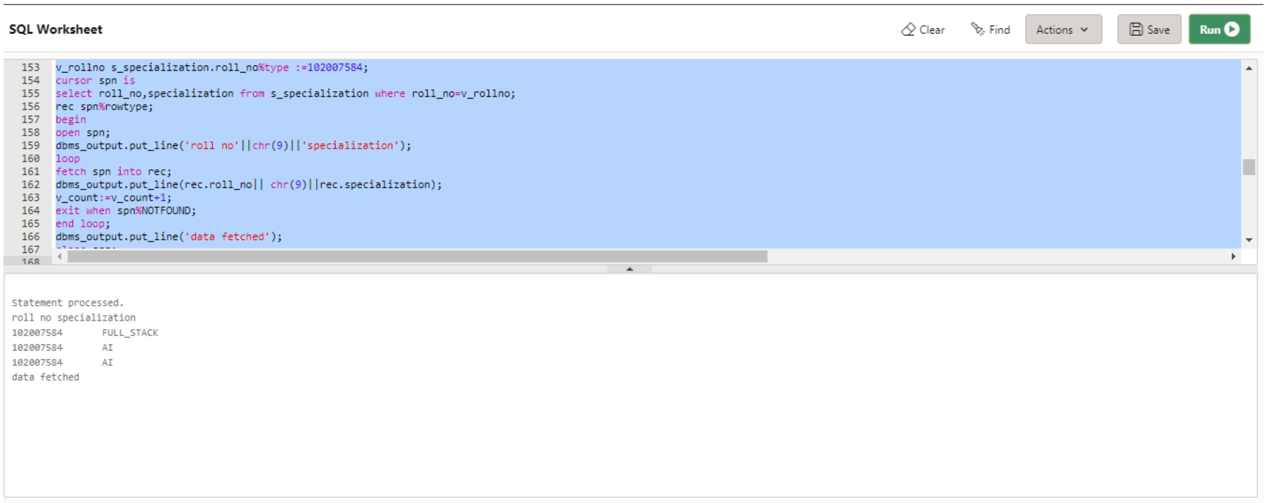
select *from professor;

```
select *from student;

select *from team;

select *from p_specialization;

select *from s_specialization;
```

CURSORS

```
declare

v_count   number(3):=0;

v_rollno s_specialization.roll_no%type;

cursor spn is

select roll_no,specialization from s_specialization where
roll_no=v_rollno;

rec spn%rowtype;

begin
```

```
open spn;
dbms_output.put_line('roll no'||chr(9)||'specialization');
loop
fetch spn into rec;
dbms_output.put_line(rec.roll_no|| chr(9)||rec.specialization);
v_count:=v_count+1;
exit when spn%NOTFOUND;
end loop;
dbms_output.put_line('data fetched');
close spn;
end;
```

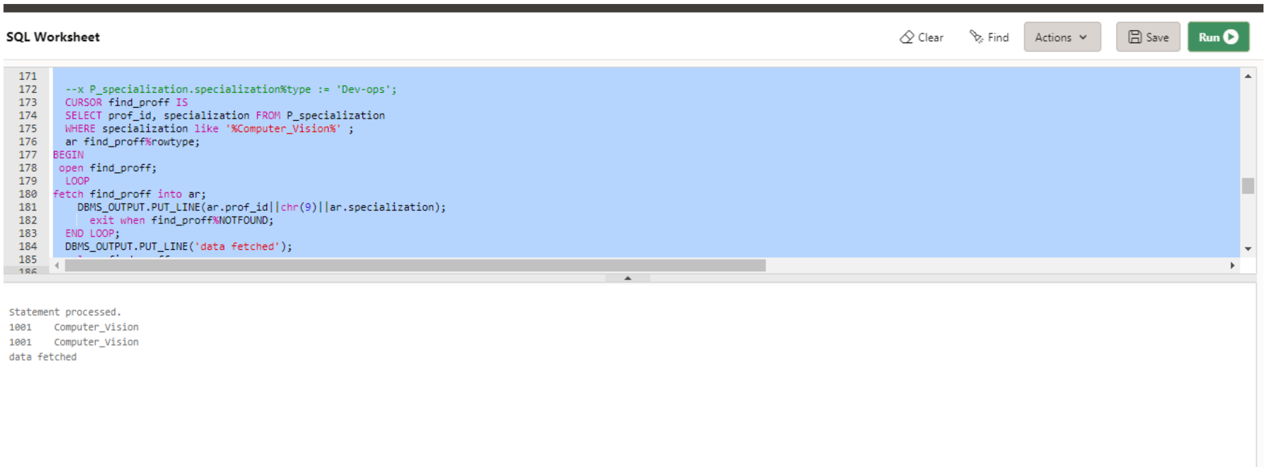


```
v_rollno s_specialization.roll_no%type :=102007584;
cursor spn is
select roll_no,specialization from s_specialization where roll_no=v_rollno;
rec spn%rowtype;
begin
open spn;
dbms_output.put_line('roll no'||chr(9)||'specialization');
loop
fetch spn into rec;
dbms_output.put_line(rec.roll_no|| chr(9)||rec.specialization);
v_count:=v_count+1;
exit when spn%NOTFOUND;
end loop;
dbms_output.put_line('data fetched');
```

```
Statement processed.
roll no specialization
102007584       FULL_STACK
102007584       AI
102007584       AI
data fetched
```

```
DECLARE


 --x P_specialization.specialization%type := 'Dev-ops';
 CURSOR find_proff IS
 SELECT prof_id, specialization FROM P_specialization
 WHERE specialization like '%Computer_Vision%' ;
 ar find_proff%rowtype;
BEGIN
 open find_proff;
 LOOP
fetch find_proff into ar;
   DBMS_OUTPUT.PUT_LINE(ar.prof_id||chr(9)||ar.specialization);
     exit when find_proff%NOTFOUND;
 END LOOP;
```

```
  DBMS_OUTPUT.PUT_LINE('data fetched');
   close find_proff;
END;
```



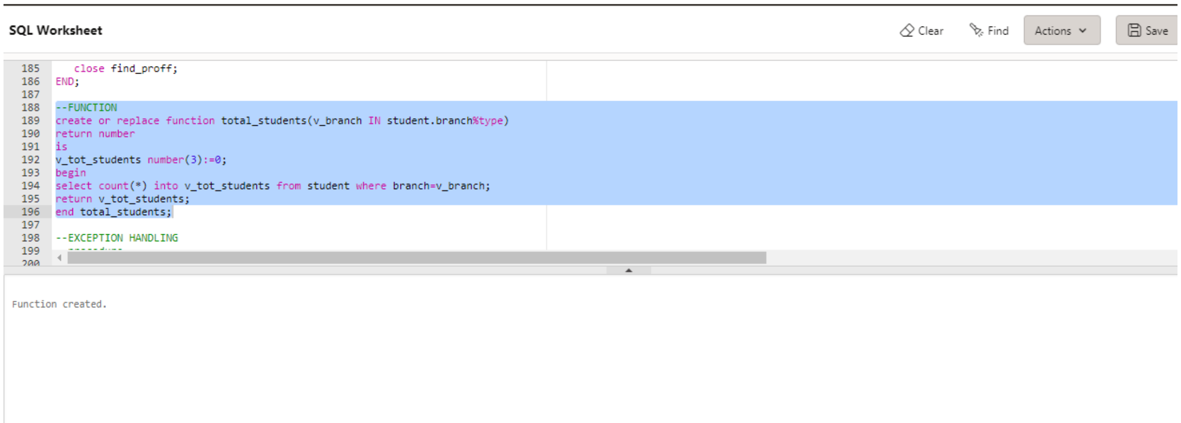
```
  --x P_specialization.specialization%type := 'Dev-ops';
  CURSOR find_proff IS
  SELECT prof_id, specialization FROM P_specialization
  WHERE specialization like '%Computer_Vision%' ;
  ar find_proff%rowtype;
BEGIN
 open find_proff;
  LOOP
fetch find_proff into ar;
    DBMS_OUTPUT.PUT_LINE(ar.prof_id||chr(9)||ar.specialization);
      exit when find_proff%NOTFOUND;
  END LOOP;
  DBMS_OUTPUT.PUT_LINE('data fetched');
```

```
Statement processed.
1001    Computer_Vision
1001    Computer_Vision
data fetched
```

FUNCTIONS

```
create or replace function total_students(v_branch IN
student.branch%type)

return number

is

v_tot_students number(3):=0;
```

```
begin

select count(*) into v_tot_students from student where
branch=v_branch;

return v_tot_students;

end total_students;
```



```
   close find_proff;
END;

--FUNCTION
create or replace function total_students(v_branch IN student.branch%type)
return number
is
v_tot_students number(3):=0;
begin
select count(*) into v_tot_students from student where branch=v_branch;
return v_tot_students;
end total_students;

--EXCEPTION HANDLING
```

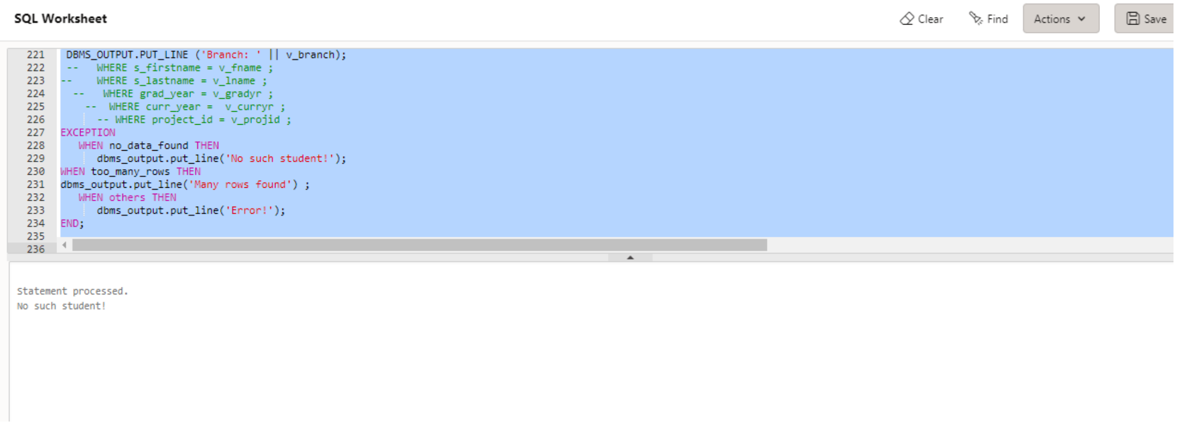
```
Function created.
```

EXCEPTION HANDLING-

```
--procedure

CREATE OR REPLACE PROCEDURE
INSERT_STUDENT(v_rollno IN student.Roll_no%type, v_fname
IN student.s_firstname%type, v_lname IN
student.s_lastname%type, v_branch IN student.branch%type,
v_gradyr IN student.grad_year%type, v_curryr IN
student.curr_year%type, v_projid IN student.project_id%type)

is

begin

insert into student values(v_rollno,v_branch,v_gradyr, v_curryr,
v_projid, v_lname, v_fname);

end insert_student;


--exception handling

DECLARE

   v_rollno student.Roll_no%type;

  -- v_fname  student.s_firstname%type;

--   v_lname student.s_lastname%type;

    v_branch student.branch%type;

  --  v_gradyr  student.grad_year%type;
```

```
 --  v_curryr student.curr_year%type;

 --  v_projid  student.project_id%type;


BEGIN

   SELECT  Roll_no, branch INTO  v_rollno, v_branch

   FROM student where s_firstname LIKE '%TANISHA%';


DBMS_OUTPUT.PUT_LINE ('Roll_no: '||  v_rollno);

 DBMS_OUTPUT.PUT_LINE ('Branch: ' || v_branch);

 --   WHERE s_firstname = v_fname ;

--    WHERE s_lastname = v_lname ;

 --   WHERE grad_year = v_gradyr ;

   --  WHERE curr_year =  v_curryr ;

     -- WHERE project_id = v_projid ;

EXCEPTION
```

```
  WHEN no_data_found THEN
    dbms_output.put_line('No such student!');
WHEN too_many_rows THEN
dbms_output.put_line('Many rows found') ;
  WHEN others THEN
    dbms_output.put_line('Error!');
END;
```



```
 DBMS_OUTPUT.PUT_LINE ('Branch: ' || v_branch);
 --   WHERE s_firstname = v_fname ;
--    WHERE s_lastname = v_lname ;
  --   WHERE grad_year = v_gradyr ;
    --  WHERE curr_year =  v_curryr ;
      -- WHERE project_id = v_projid ;
EXCEPTION
   WHEN no_data_found THEN
      dbms_output.put_line('No such student!');
WHEN too_many_rows THEN
dbms_output.put_line('Many rows found') ;
   WHEN others THEN
      dbms_output.put_line('Error!');
END;
```

```
Statement processed.
No such student!
```

TRIGGERS-

--trigger that one project duration cannot be more than 12 months

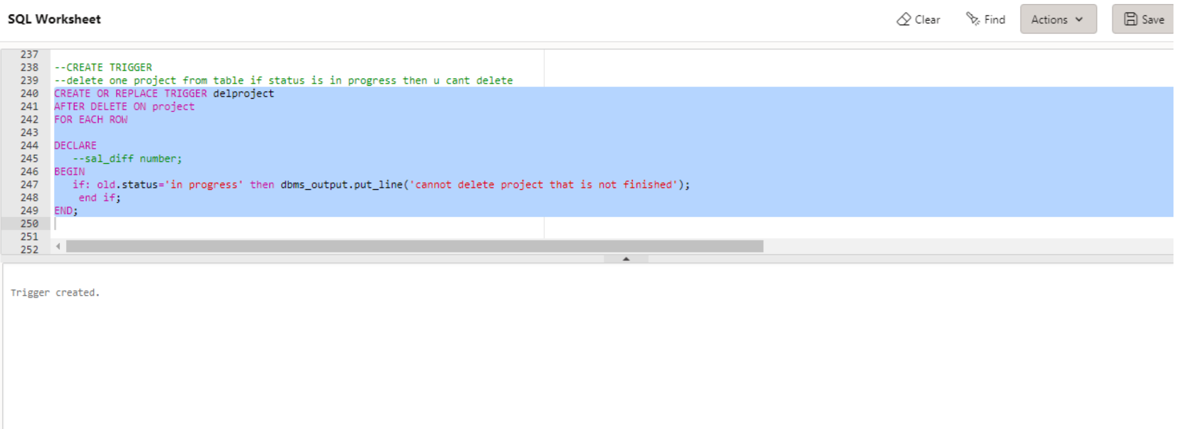
```
create or replace trigger check_duration

before

insert of duration_in_months

on project

for each row

begin

if: duration_in_months>6 then

raise_application_error('Duration should not be more than 12 months');

end if;

end;
```

2.

```
--delete one project from table if status is in progress then u cant delete

CREATE OR REPLACE TRIGGER delproject
```

```
AFTER DELETE ON project

FOR EACH ROW



DECLARE

   --sal_diff number;

BEGIN

   if: old.status='in progress' then
dbms_output.put_line('cannot delete project that is not finished');

    end if;

END;





--CALL TRIGGER



DECLARE      v_projid project.project_id%type :=3003;
```

```
  BEGIN
 DELETE FROM project
 WHERE project_id =v_projid;
 IF sql%notfound THEN
   dbms_output.put_line('no project deleted');
 ELSif sql%found THEN
      dbms_output.put_line('one row deleted');
 END IF;
END;
```



```

--CREATE TRIGGER
--delete one project from table if status is in progress then u cant delete
CREATE OR REPLACE TRIGGER delproject
AFTER DELETE ON project
FOR EACH ROW

DECLARE
   --sal_diff number;
BEGIN
   if: old.status='in progress' then dbms_output.put_line('cannot delete project that is not finished');
    end if;
END;
```

```
Trigger created.
```

SUBMITTED BY-

GROUP 1 OF 2CO18

BE COE

TIET

Signature of Faculty member