

Date: 11th November 2021

FOUNDATION OF DATABASE MANAGEMENT
SYSTEM (BCIS-5420)
Full Project

APEX ORACLE: HARIKAUNT, PREETHIUNT

EMAIL: HARIKAKKIRAJU@MY.UNT.EDU

PREETHI919414@GMAIL.COM

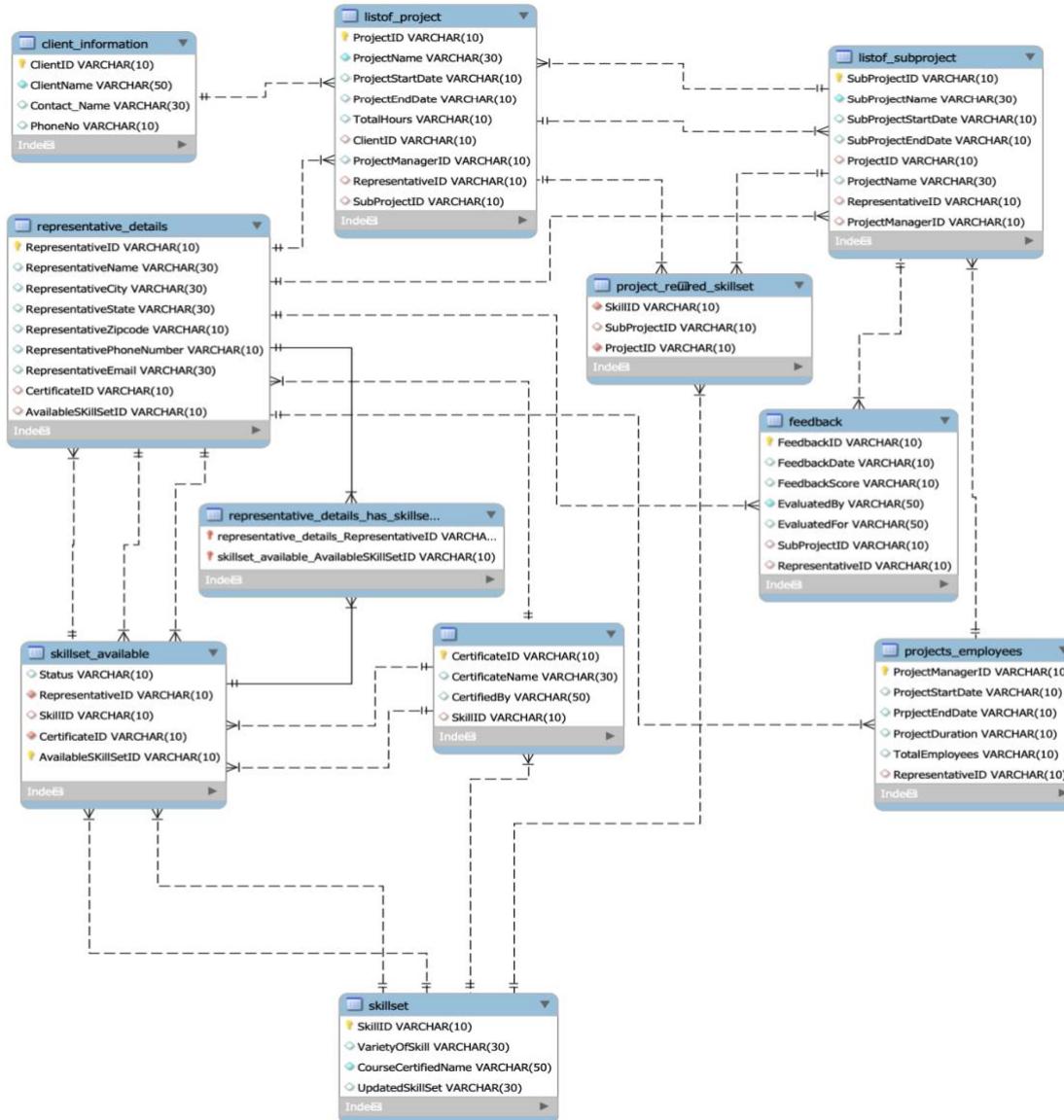
TEAM -38

TEAM MEMBERS:

HARIKA AKKIRAJU (11481127)

PREETHI BHANDARI (11503683)

- ER-diagram:



- **Tables and Loaded data:**

1. **CLIENT INFORMATION:**

```
CREATE TABLE CLIENT_INFORMATION  
(ClientID          VARCHAR(10)  NOT NULL PRIMARY KEY,  
ClientName        VARCHAR(50)  NOT NULL,  
Contact_Name      VARCHAR(30),  
PhoneNo           VARCHAR(10));
```

```
Insert into CLIENT_INFORMATION VALUES (100156,'AMAZON_PRIME', 'HARIKA', 4586351247);  
Insert into CLIENT_INFORMATION VALUES (100245,'VPLAYED', 'PREETHI', 5632459635);  
Insert into CLIENT_INFORMATION VALUES (100323,'NETFLIX', 'GEETHA4539652358);  
Insert into CLIENT_INFORMATION VALUES (100554,'DISNEY', 'SWATHI', 6583651247) ;  
Insert into CLIENT_INFORMATION VALUES (100653,'IBM_CLOUD_VIDEO', 'VEDA', 9652475635);
```

In Apex:

The screenshot shows the Oracle APEX SQL Workshop interface. At the top, there are navigation tabs: APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. On the right, there's a user profile for "Harika Akkiraju" (ha@harikaunt). Below the tabs, the "SQL Commands" section is active. The "Language" dropdown is set to "SQL". The "Rows" dropdown is set to "10". There are buttons for "Clear Command" and "Find Tables". On the far right, there are "Save" and "Run" buttons. The main area contains the following SQL code:

```
1 CREATE TABLE CLIENT_INFORMATION
2   (ClientID  VARCHAR(10) NOT NULL PRIMARY KEY,
3    ClientName VARCHAR(50) NOT NULL,
4    Contact_Name  VARCHAR(30),
5    PhoneNo     VARCHAR(10));
6
7   Insert into CLIENT_INFORMATION VALUES (100156,'AMAZON_PRIME', 'HARIKA', 4586351247);
8   Insert into CLIENT_INFORMATION VALUES (100245,'VPLAYED', 'PREETHI', 5632459635);
9   Insert into CLIENT_INFORMATION VALUES (100323,'NETFLIX', 'GEETHA', 4539652358);
10  Insert into CLIENT_INFORMATION VALUES (100554,'DISNEY', 'SWATHI', 6583651247);
11  Insert into CLIENT_INFORMATION VALUES (100653,'IBM_CLOUD_VIDEO', 'VEDA', 9652475635);
12
13
14
15 SELECT * FROM CLIENT_INFORMATION
```

Below the code, there are tabs for "Results", "Explain", "Describe", "Saved SQL", and "History". The "Results" tab is selected, displaying the following table:

CLIENTID	CLIENTNAME	CONTACT_NAME	PHONENO
100156	AMAZON_PRIME	HARIKA	4586351247
100323	NETFLIX	GEETHA	4539652358
100245	VPLAYED	PREETHI	5632459635
100554	DISNEY	SWATHI	6583651247
100653	IBM_CLOUD_VIDEO	VEDA	9652475635

At the bottom left, it says "5 rows returned in 0.06 seconds" and has a "Download" link. At the bottom right, it says "Copyright © 1999, 2021, Oracle and/or its affiliates." and "Oracle APEX 21.2.0".

2. LIST OF PROJECTS DETAILS:

```
CREATE TABLE LISTOF_PROJECT
(ProjectID      VARCHAR(10)  NOT NULL PRIMARY KEY,
ProjectName    VARCHAR(30)  NOT NULL,
ProjectStartDate VARCHAR(10),
ProjectEndDate   VARCHAR(10),
TotalHours     VARCHAR(10),
ClientID       VARCHAR(10),
ProjectManagerID  VARCHAR(10),
RepresentativeID  VARCHAR(10));
```

```
ALTER TABLE LISTOF_PROJECT
ADD (FOREIGN KEY (ClientID) REFERENCES CLIENT_INFORMATION (ClientID),
     FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
     FOREIGN KEY (PROJECTMANAGERID) REFERENCES PROJECTS_EMPLOYEES (PROJECTMANAGERID));
```

```
INSERT INTO LISTOF_PROJECT VALUES ( 6001 , 'AMAZON_PRIME_NEW_RELEASE' , '01/03/2020' , '01/03/2021' , 2453 , 100156 , 2500 , 4500 );
INSERT INTO LISTOF_PROJECT VALUES ( 6002 , 'VPLAYED_ADS_PLAYED' , '01/05/2020' , '01/05/2022' , 2454 , 100245 , 2501 , 4502 );
INSERT INTO LISTOF_PROJECT VALUES ( 6003 , 'NETFLIX_DOCUMENTARY' , '01/07/2020' , '01/07/2022' , 2455 , 100323 , 2502 , 4504 );
INSERT INTO LISTOF_PROJECT VALUES ( 6004 , 'DISNEY_SCI_FI' , '01/09/2020' , '01/07/2023' , 2456 , 100554 , 2503 , 4506 );
INSERT INTO LISTOF_PROJECT VALUES ( 6005 , 'IBM_EDUCATIONAL_VIDEOS' , '01/11/2020' , '01/11/2023' , 2457 , 100653 , 2504 , 4508 );
```

In Apex:

The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The user, Harika Akkiraju, is logged in with schema WKSP_HARIKAUNT.

The SQL editor contains the following code:

```
31 | FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
32 | FOREIGN KEY (PROJECTMANAGERID) REFERENCES PROJECTS_EMPLOYEES (PROJECTMANAGERID));
33 |
34 | INSERT INTO LISTOF_PROJECT VALUES ( 6001 , 'AMAZON_PRIME_NEW_RELEASE', '01/03/2020','01/03/2021',
35 | 2453, 100156, 2500, 4500);
36 | INSERT INTO LISTOF_PROJECT VALUES ( 6002 , 'VPLAYED ADS_PLAYED', '01/05/2020','01/05/2022',2454 , 100245, 2501, 4502);
37 | INSERT INTO LISTOF_PROJECT VALUES ( 6003 , 'NETFLIX_DOCUMENTARY', '01/07/2020','01/07/2022',2455 , 100323,
38 | 2502, 4504);
39 | INSERT INTO LISTOF_PROJECT VALUES ( 6004 , 'DISNEY SCI_FI', '01/09/2020', '01/07/2023',2456 , 100554, 2503, 4506);
40 | INSERT INTO LISTOF_PROJECT VALUES ( 6005 , 'IBM_EDUCATIONAL_VIDEOS','01/11/2020','01/11/2023',2457 , 100653,
41 | 2504, 4508);
42 |
43 | SELECT * from LISTOF_PROJECT
```

The Results tab displays the output of the query:

PROJECTID	PROJECTNAME	PROJECTSTARTDATE	PROJECTENDDATE	TOTALHOURS	CLIENTID	PROJECTMANAGERID	REPRESENTATIVEID
6001	AMAZON_PRIME_NEW_RELEASE	01/03/2020	01/03/2021	2453	100156	2500	4500
6002	VPLAYED ADS_PLAYED	01/05/2020	01/05/2022	2454	100245	2501	4502
6003	NETFLIX_DOCUMENTARY	01/07/2020	01/07/2022	2455	100323	2502	4504
6004	DISNEY SCI_FI	01/09/2020	01/07/2023	2456	100554	2503	4506
6005	IBM_EDUCATIONAL_VIDEOS	01/11/2020	01/11/2023	2457	100653	2504	4508

5 rows returned in 0.04 seconds [Download](#)

Copyright © 1999, 2021, Oracle and/or its affiliates. Oracle APEX 21.2.0

3. LIST OF SUBPROJECTS:

```
CREATE TABLE LISTOF_SUBPROJECT
(SubProjectID  VARCHAR(10)  NOT NULL PRIMARY KEY,
SubProjectName      VARCHAR(30)  NOT NULL,
SubProjectStartDate  VARCHAR(10),
SubProjectEndDate    VARCHAR(10),
ProjectID          VARCHAR(10),
ProjectName        VARCHAR(30),
RepresentativeID    VARCHAR(10),
ProjectManagerID   VARCHAR(10));
```

```
ALTER TABLE LISTOF_SUBPROJECT
ADD (FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
     FOREIGN KEY (ProjectManagerID) REFERENCES PROJECTS_EMPLOYEES(ProjectManagerID),
     FOREIGN KEY (PROJECTID) REFERENCES LISTOF_PROJECT (PROJECTID));
```

```
INSERT INTO LISTOF_SUBPROJECT VALUES (401,'AMAZON PRIME NEW RELEASE-PART1','25/03/2020', '08/09/2020',
6001,'AMAZON_PRIME_NEW_RELEASE', 4500, 2500);
INSERT INTO LISTOF_SUBPROJECT VALUES (402,'VPLAYED痈ADS_PLAYED_PART_6','20/12/2020', '08/06/2021', 6002, 'VPLAYED痈ADS_PLAYED', 4502,
2501);
INSERT INTO LISTOF_SUBPROJECT VALUES (403,'NETFLIX_DOCUMENTARY_PART_2','16/03/2021', '08/09/2022', 6003,'NETFLIX_DOCUMENTARY',
4506, 2503);
INSERT INTO LISTOF_SUBPROJECT VALUES (404,'DISNEY_SCI_FI_PART_5','16/08/2021', '08/11/2022', 6004,'DISNEY_SCI_FI', 4504, 2502);
INSERT INTO LISTOF_SUBPROJECT VALUES (405,'IBM_EDUCATIONAL_VIDEOS_PART_2','03/05/2021', '08/09/2021',
6005,'IBM_EDUCATIONAL_VIDEOS', 4508, 2504);
```

In apex:

The screenshot shows the Oracle APEX interface with the SQL Workshop tab selected. The user, Harika Akkiraju, is logged in with the schema WKSP_HARIKAUNT.

The SQL editor contains the following code:

```
66  INSERT INTO LISTOF_SUBPROJECT VALUES (401,'AMAZON PRIME NEW RELEASE-PART1','25/03/2020',
67    '08/09/2020', 6001,'AMAZON_PRIME_NEW_RELEASE', 4500, 2500);
68  INSERT INTO LISTOF_SUBPROJECT VALUES (402,'VPLAYED_AMS_PLAYED_PART_6','20/12/2020', '08/06/2021',
69    6002, 'VPLAYED_AMS_PLAYED', 4502, 2501);
70  INSERT INTO LISTOF_SUBPROJECT VALUES (403,'NETFLIX_DOCUMENTARY_PART_2','16/03/2021',
71    '08/09/2022', 6003,'NETFLIX_DOCUMENTARY', 4506, 2503);
72  INSERT INTO LISTOF_SUBPROJECT VALUES (404,'DISNEY_SCI_FI_PART_5','16/08/2021', '08/11/2022', 6004,
73    'DISNEY_SCI_FI', 4504, 2502);
74  INSERT INTO LISTOF_SUBPROJECT VALUES (405,'IBM_EDUCATIONAL_VIDEOS_PART_2','03/05/2021',
75    '08/09/2021', 6005,'IBM_EDUCATIONAL_VIDEOS', 4508, 2504);
76
77
78
79  Select * from LISTOF_SUBPROJECT
```

The results section displays the data inserted into the LISTOF_SUBPROJECT table:

SUBPROJECTID	SUBPROJECTNAME	SUBPROJECTSTARTDATE	SUBPROJECTENDDATE	PROJECTID	PROJECTNAME	REPRESENTATIVEID	PROJECTMANAGERID
401	AMAZON PRIME NEW RELEASE-PART1	25/03/2020	08/09/2020	6001	AMAZON_PRIME_NEW_RELEASE	4500	2500
402	VPLAYED_AMS_PLAYED_PART_6	20/12/2020	08/06/2021	6002	VPLAYED_AMS_PLAYED	4502	2501
403	NETFLIX_DOCUMENTARY_PART_2	16/03/2021	08/09/2022	6003	NETFLIX_DOCUMENTARY	4506	2503
404	DISNEY_SCI_FI_PART_5	16/08/2021	08/11/2022	6004	DISNEY_SCI_FI	4504	2502
405	IBM_EDUCATIONAL_VIDEOS_PART_2	03/05/2021	08/09/2021	6005	IBM_EDUCATIONAL_VIDEOS	4508	2504

5 rows returned in 0.06 seconds [Download](#)

Copyright © 1999, 2021, Oracle and/or its affiliates.

Oracle APEX 21.2.0

4. PROJECT EMPLOYEES DETAILS:

```
CREATE TABLE PROJECTS_EMPLOYEE  
( PROJECTMANAGERID VARCHAR (10) NOT NULL PRIMARY KEY,  
  RepresentativeID      VARCHAR(10),  
  PROJECT_START_DATE VARCHAR (10),  
  PROJECT_END_DATE VARCHAR (10),  
  PROJECT_DURATION VARCHAR (10),  
  TOTAL_EMPLOYEES VARCHAR (10));
```

```
ALTER TABLE PROJECTS_EMPLOYEES  
ADD FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS (RepresentativeID);
```

```
INSERT INTO PROJECTS_EMPLOYEES VALUES (2500, 4500, '01/03/2020','01/03/2021', 2453, 30);  
INSERT INTO PROJECTS_EMPLOYEES VALUES (2501, 4502, '01/05/2020','01/05/2022',2454 , 32);  
INSERT INTO PROJECTS_EMPLOYEES VALUES (2502, 4504, '01/07/2020','01/07/2022',2455 , 30);  
INSERT INTO PROJECTS_EMPLOYEES VALUES (2503, 4506, '01/09/2020','01/07/2023',2456 , 35);  
INSERT INTO PROJECTS_EMPLOYEES VALUES (2504, 4508, '01/11/2020','01/11/2023',2457 , 30)
```

IN APEX:

The screenshot shows the Oracle APEX interface with the SQL Workshop tab selected. The schema is set to WKSP_HARIKAUNT. The code editor contains the following SQL statements:

```
88
89
90    ALTER TABLE PROJECTS_EMPLOYEES
91      ADD FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS (RepresentativeID);
92
93    INSERT INTO PROJECTS_EMPLOYEES VALUES (2500, 4500, '01/03/2020','01/03/2021', 2453, 30);
94    INSERT INTO PROJECTS_EMPLOYEES VALUES (2501, 4502, '01/05/2020','01/05/2022',2454 , 32);
95    INSERT INTO PROJECTS_EMPLOYEES VALUES (2502, 4504, '01/07/2020','01/07/2022',2455 , 30);
96    INSERT INTO PROJECTS_EMPLOYEES VALUES (2503, 4506, '01/09/2020','01/07/2023',2456 , 35);
97    INSERT INTO PROJECTS_EMPLOYEES VALUES (2504, 4508, '01/11/2020','01/11/2023',2457 , 30);
98
99
100   SELECT * FROM PROJECTS_EMPLOYEES
```

The results section displays the following data:

PROJECTMANAGERID	REPRESENTATIVEID	PROJECT_START_DATE	PROJECT_END_DATE	PROJECT_DURATION	TOTAL_EMPLOYEES
2501	4502	01/05/2020	01/05/2022	2454	32
2503	4506	01/09/2020	01/07/2023	2456	35
2500	4500	01/03/2020	01/03/2021	2453	30
2502	4504	01/07/2020	01/07/2022	2455	30
2504	4508	01/11/2020	01/11/2023	2457	30

5 rows returned in 0.04 seconds [Download](#)

Copyright © 1999, 2021, Oracle and/or its affiliates.

Oracle APEX 21.2.0

5. REPRESENTATIVE DETAILS:

```
CREATE TABLE REPRESENTATIVE_DETAILS  
(RepresentativeID      VARCHAR(10)  NOT NULL PRIMARY KEY,  
RepresentativeFirstName    VARCHAR(30),  
RepresentativeLastName     VARCHAR(30),  
RepresentativeCity        VARCHAR(30),  
RepresentativeState       VARCHAR(30),  
RepresentativeZipcode     VARCHAR(10),  
RepresentativePhoneNumber  VARCHAR(10),  
RepresentativeEmail       VARCHAR(30),  
CertificateID      VARCHAR(10));
```

```
ALTER TABLE REPRESENTATIVE_DETAILS  
ADD FOREIGN KEY (CertificateID) REFERENCES CERTIFIED.Course(CertificateID)
```

```
INSERT INTO REPRESENTATIVE_DETAILS VALUES (4500, 'JOHN', 'KEL', 'DENTON', 'TEXAS', 76201, 3569874145, 'John.i@gmail.com', 5001);  
INSERT INTO REPRESENTATIVE_DETAILS VALUES (4502, 'KATE', 'JOHNSON', 'DALLAS', 'TEXAS', 76201, 8563214588, 'Kate.a@gmail.com', 5002);  
INSERT INTO REPRESENTATIVE_DETAILS VALUES (4504, 'MARK', 'MAYERS', 'IRVINE', 'TEXAS', 76201, 4576255886, 'Andy.y@gmail.com', 5003);  
INSERT INTO REPRESENTATIVE_DETAILS VALUES (4506, 'STEVE', 'JONS', 'LA', 'CALIFORNIA', 76201, 4455625576, 'Steve@gmail.com', 5002);  
INSERT INTO REPRESENTATIVE_DETAILS VALUES (4508, 'TRUE', 'JERRY', 'LA', 'CALIFORNIA', 76201, 4586325412, 'True.m@gmail.com', 5003);
```

IN APEX:

The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The top navigation bar includes links for APEX, App Builder, SQL Workshop, Team Development, and Gallery, along with user information for Harika Akkiraju.

In the SQL Commands tab, several SQL statements are entered:

```
122 | INSERT INTO REPRESENTATIVE_DETAILS VALUES (4504, 'MARK','MAYERS', 'IRVINE', 'TEXAS', 76201,
123 | 4576255886, 'Andy.y@gmail.com', 5003);
124 | INSERT INTO REPRESENTATIVE_DETAILS VALUES (4506, 'STEVE', 'JONS', 'LA', 'CALIFORNIA', 76201,
125 | 4455625576, 'Steve@gmail.com', 5002);
126 | INSERT INTO REPRESENTATIVE_DETAILS VALUES (4508, 'TRUE', 'JERRY','LA', 'CALIFORNIA', 76201, 4586325412,
127 | 'True.m@gmail.com', 5003);
128 |
129 |
130 | select * from REPRESENTATIVE_DETAILS |
```

The Results tab displays the output of the last query:

REPRESENTATIVEID	REPRESENTATIVEFIRSTNAME	REPRESENTATIVELASTNAME	REPRESENTATIVECITY	REPRESENTATIVESTATE	REPRESENTATIVEZIPCODE	REPRESENTATIVEPHONENUMBER	REPRESENT
4500	JOHN	KEL	DENTON	TEXAS	76201	3569874145	John.i@gma
4508	TRUE	JERRY	LA	CALIFORNIA	76201	4586325412	True.m@gm
4502	KATE	JOHNSON	DALLAS	TEXAS	76201	8563214588	Kate.a@gma
4506	STEVE	JONS	LA	CALIFORNIA	76201	4455625576	Steve@gma
4504	MARK	MAYERS	IRVINE	TEXAS	76201	4576255886	Andy.y@gm

At the bottom, it shows "rows returned in 0.04 seconds" and "Download". The footer includes links for user profile, language, and copyright information: "Copyright © 1999, 2021, Oracle and/or its affiliates." and "Oracle APEX 21.2.0".

6. SKILLSET AVAILABLE DETAILS:

```
CREATE TABLE SKILLSET_AVAILABLE
(Status          VARCHAR(10),
RepresentativeID  VARCHAR(10) NOT NULL,
SkillID          VARCHAR(10),
CertificateID    VARCHAR(10) NOT NULL,
AVAILABLE_SKILLSETID VARCHAR (10) PRIMARY KEY );

ALTER TABLE SKILLSET_AVAILABLE
ADD (FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
FOREIGN KEY (SkillID) REFERENCES SKILLSET(SkillID),
FOREIGN KEY (CertificateID) REFERENCES CERTIFIED_COURSE(CertificateID));

INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4500, 1, 5001, 200);
INSERT INTO SKILLSET_AVAILABLE VALUES ('PROGRESS', 4502, 2, 5002, 201);
INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4504, 3, 5003, 202);
INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4506, 4, 5004, 203);
INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4508, 5, 5005, 204);
```

IN APEX:

The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop, Team Development, and Gallery. The user is logged in as Harika Akkiraju (HA). The SQL Commands tab is active, showing a code editor with the following SQL script:

```
142 |     ALTER TABLE SKILLSET_AVAILABLE
143 |       ADD (FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
144 |             FOREIGN KEY (SkillID) REFERENCES SKILLSET(SkillID),
145 |             FOREIGN KEY (CertificateID) REFERENCES CERTIFIED_COURSE(CertificateID));
146 |
147 |       INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4500, 1, 5001, 200);
148 |       INSERT INTO SKILLSET_AVAILABLE VALUES ('PROGRESS', 4502, 2, 5002, 201);
149 |       INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4504, 3, 5003, 202);
150 |       INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4506, 4, 5004, 203);
151 |       INSERT INTO SKILLSET_AVAILABLE VALUES ('DONE', 4508, 5, 5005, 204);
152 |
153 | select * from SKILLSET_AVAILABLE
```

The results section displays the output of the query:

STATUS	REPRESENTATIVEID	SKILLID	CERTIFICATEID	AVAILABLE_SKILLSETID
DONE	4500	1	5001	200
DONE	4508	5	5005	204
DONE	4504	3	5003	202
PROGRESS	4502	2	5002	201
DONE	4506	4	5004	203

Below the results, it says "5 rows returned in 0.04 seconds" and provides a "Download" link.

The bottom of the page includes footer links for email (akkirajuharika@gmail.com), profile (harikaunt), and language (en). It also states "Copyright © 1999, 2021, Oracle and/or its affiliates." and "Oracle APEX 21.2.0".

7. SKILLSET TABLE:

```
CREATE TABLE SKILLSET
(SkillID  VARCHAR(10)  NOT NULL PRIMARY KEY,
VarietyOfSkill  VARCHAR(30),
CourseCertifiedName  VARCHAR(50)  NOT NULL,
UpdatedSkillSet      VARCHAR(30));

INSERT INTO SKILLSET VALUES ( 1, 'JAVA', 'IBM_CERTIFICATION', 'VERSION 2.3.1');
INSERT INTO SKILLSET VALUES ( 2, 'NOSQL', 'GOOGLE_CERTIFICATION', 'VERSION 3.11.5');
INSERT INTO SKILLSET VALUES ( 3, 'PYTHON', 'UNT_CERTIFICATION', 'VERSION 22.1');
INSERT INTO SKILLSET VALUES ( 4, 'PYTHON', 'UNT_CERTIFICATION', 'VERSION2022');
INSERT INTO SKILLSET VALUES ( 5, 'R_PROGRAMMING', 'IBM_CERTIFICATION', 'VERSION 3.14');
```

IN APEX:

The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. The right side of the header shows the user's profile: Harika Akkiraju (HA) harikaunt. The main area is titled "SQL Commands". The language is set to SQL, and the results are limited to 10 rows. The query entered is:

```
156 |     (SkillID      VARCHAR(10) NOT NULL PRIMARY KEY,  
157 |      VarietyOfSkill  VARCHAR(30),  
158 |      CourseCertifiedName VARCHAR(50) NOT NULL,  
159 |      UpdatedSkillSet    VARCHAR(30));  
160 |  
161 |      INSERT INTO SKILLSET VALUES ( 1, 'JAVA', 'IBM_CERTIFICATION', 'VERSION 2.3.1');  
162 |      INSERT INTO SKILLSET VALUES ( 2, 'NOSQL', 'GOOGLE_CERTIFICATION', 'VERSION 3.11.5');  
163 |      INSERT INTO SKILLSET VALUES ( 3, 'PYTHON', 'UNT_CERTIFICATION', 'VERSION 22.1');  
164 |      INSERT INTO SKILLSET VALUES ( 4, 'PYTHON', 'UNT_CERTIFICATION', 'VERSION2022');  
165 |      INSERT INTO SKILLSET VALUES ( 5, 'R_PROGRAMMING', 'IBM_CERTIFICATION', 'VERSION 3.14');  
166 |  
167 | select * from SKILLSET
```

The results section displays the following table:

SKILLID	VARIETYOFSKILL	COURSECERTIFIEDNAME	UPDATEDSKILLSET
1	JAVA	IBM_CERTIFICATION	VERSION 2.3.1
2	NOSQL	GOOGLE_CERTIFICATION	VERSION 3.11.5
3	PYTHON	UNT_CERTIFICATION	VERSION 22.1
4	PYTHON	UNT_CERTIFICATION	VERSION2022
5	R_PROGRAMMING	IBM_CERTIFICATION	VERSION 3.14

Below the table, it says "5 rows returned in 0.05 seconds" and provides a "Download" link. The footer includes the user's email (akkirajuharika@gmail.com), the schema name (harikaunt), and the language (en). The copyright notice reads "Copyright © 1999, 2021, Oracle and/or its affiliates." and the version "Oracle APEX 21.2.0".

8. CERTIFIED COURSE DETAILS:

```
CREATE TABLE CERTIFIED.Course  
(CertificateID      VARCHAR(10)  NOT NULL PRIMARY KEY,  
CertificateName    VARCHAR(30),  
CertifiedBy        VARCHAR(50),  
SkillID           VARCHAR(10));
```

```
ALTER TABLE CERTIFIED.Course  
ADD FOREIGN KEY (SkillID) REFERENCES SKILLSET(SkillID);
```

```
INSERT INTO CERTIFIED.Course VALUES (5001, 'IBM_CERTIFICATION', 'IBM', 1);  
INSERT INTO CERTIFIED.Course VALUES (5002, 'GOOGLE_CERTIFICATION', 'GOOGLE', 2);  
INSERT INTO CERTIFIED.Course VALUES (5003, 'UNT_CERTIFICATION', 'UNT', 3);  
INSERT INTO CERTIFIED.Course VALUES (5004, 'UNT_CERTIFICATION', 'UNT', 4);  
INSERT INTO CERTIFIED.Course VALUES (5005, 'IBM_CERTIFICATION', 'IBM', 5);
```

IN APEX:

Screenshot of Oracle APEX SQL Workshop interface showing the execution of SQL code and its results.

The SQL code executed is:

```
176 | ALTER TABLE CERTIFIED_COURSE
177 | ADD FOREIGN KEY (SkillID) REFERENCES SKILLSET(SkillID);
178 |
179 | INSERT INTO CERTIFIED_COURSE VALUES (5001, 'IBM_CERTIFICATION', 'IBM', 1);
180 | INSERT INTO CERTIFIED_COURSE VALUES (5002, 'GOOGLE_CERTIFICATION', 'GOOGLE', 2);
181 | INSERT INTO CERTIFIED_COURSE VALUES (5003, 'UNT_CERTIFICATION', 'UNT', 3);
182 | INSERT INTO CERTIFIED_COURSE VALUES (5004, 'UNT_CERTIFICATION', 'UNT', 4);
183 | INSERT INTO CERTIFIED_COURSE VALUES (5005, 'IBM_CERTIFICATION', 'IBM', 5);
184 |
185 | select * from CERTIFIED_COURSE
```

The Results section displays the following data:

CERTIFICATEID	CERTIFICATENAME	CERTIFIEDBY	SKILLID
5003	UNT_CERTIFICATION	UNT	3
5002	GOOGLE_CERTIFICATION	GOOGLE	2
5001	IBM_CERTIFICATION	IBM	1
5005	IBM_CERTIFICATION	IBM	5
5004	UNT_CERTIFICATION	UNT	4

5 rows returned in 0.04 seconds [Download](#)

Page footer:

- akkirajuharika@gmail.com
- harikaunt
- en
- Copyright © 1999, 2021, Oracle and/or its affiliates.
- Oracle APEX 21.2.0

9. PROJECT REQUIRED SKILLSET:

```
CREATE TABLE PROJECT_REQUIRED_SKILLSET  
(SkillID VARCHAR(10) NOT NULL,  
SubProjectID VARCHAR(10),  
ProjectID VARCHAR(10) NOT NULL);
```

```
ALTER TABLE PROJECT_REQUIRED_SKILLSET  
ADD (FOREIGN KEY (SkillID) REFERENCES SKILLSET(SkillID),  
FOREIGN KEY (SubProjectID) REFERENCES LISTOF_SUBPROJECT(SubProjectID),  
FOREIGN KEY (ProjectID) REFERENCES LISTOF_PROJECT(ProjectID));
```

```
INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (1,401, 6001);  
INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (2, 402, 6002);  
INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (3, 403, 6003);  
INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (4, 404, 6004);  
INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (5, 405, 6005);
```

IN APEX:

Screenshot of Oracle APEX SQL Workshop interface showing the execution of SQL commands and their results.

The SQL Commands section contains the following code:

```
194 ADD (FOREIGN KEY (SkillID) REFERENCES SKILLSET(SkillID),
195 FOREIGN KEY (SubProjectID) REFERENCES LISTOF_SUBPROJECT(SubProjectID),
196 FOREIGN KEY (ProjectID) REFERENCES LISTOF_PROJECT(ProjectID);
197
198 INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (1,401, 6001);
199 INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (2, 402, 6002);
200 INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (3, 403, 6003);
201 INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (4, 404, 6004);
202 INSERT INTO PROJECT_REQUIRED_SKILLSET VALUES (5, 405, 6005);
203
204
205 select * from PROJECT_REQUIRED_SKILLSET
```

The Results section displays the following table:

SKILLID	SUBPROJECTID	PROJECTID
1	401	6001
2	402	6002
3	403	6003
5	405	6005
4	404	6004

5 rows returned in 0.04 seconds [Download](#)

Page footer:

- akkirajuharika@gmail.com
- harikaunt
- en

Copyright © 1999, 2021, Oracle and/or its affiliates.

Oracle APEX 21.2.0

10. FEEDBACK:

CREATE TABLE FEEDBACK

```
(FeedbackID      VARCHAR(10)  NOT NULL PRIMARY KEY,  
FeedbackDate    VARCHAR(10),  
FeedbackScore   VARCHAR(10),  
EvaluatedBy     VARCHAR(50)  NOT NULL,  
EvaluatedFor    VARCHAR(50),  
SubProjectID   VARCHAR(10),  
RepresentativeID      VARCHAR(10))
```

ALTER TABLE FEEDBACK

```
ADD (FOREIGN KEY (SubProjectID) REFERENCES LISTOF_SUBPROJECT(SubProjectID),  
FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID));
```

```
INSERT INTO FEEDBACK VALUES (101, '01/05/2021', 6, 'VESS', 'PROJECT_END', 401, 4500);  
INSERT INTO FEEDBACK VALUES (102, '05/06/2021', 9, 'BEN', 'LEAVING_PROJECT', 402, 4502);  
INSERT INTO FEEDBACK VALUES (103, '06/08/2021', 8, 'JUNE', 'PROJECT_END', 403, 4504);  
INSERT INTO FEEDBACK VALUES (104, '02/11/2021', 7, 'MARCH', 'PROJECT_END', 404, 4506);  
INSERT INTO FEEDBACK VALUES (105, '05/09/2021', 9, 'MAC', 'LEAVING_PROJECT', 405, 4508);
```

IN APEX:

APEX App Builder SQL Workshop Team Development Gallery

SQL Commands Schema WKSP_HARIKANT

Language SQL Rows 10 Clear Command Find Tables Save Run

217 ADD (FOREIGN KEY (SubProjectID) REFERENCES LISTOF_SUBPROJECT(SubProjectID),
218 FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID));
219
220
221 INSERT INTO FEEDBACK VALUES (101, '01/05/2021', 6, 'VESS', 'PROJECT_END', 401, 4500);
222 INSERT INTO FEEDBACK VALUES (102, '05/06/2021', 9, 'BEN', 'LEAVING_PROJECT', 402, 4502);
223 INSERT INTO FEEDBACK VALUES (103, '06/08/2021', 8, 'JUNE', 'PROJECT_END', 403, 4504);
224 INSERT INTO FEEDBACK VALUES (104, '02/11/2021', 7, 'MARCH', 'PROJECT_END', 404, 4506);
225 INSERT INTO FEEDBACK VALUES (105, '05/09/2021', 9, 'MAC', 'LEAVING_PROJECT', 405, 4508);
226
227
228 select * from feedback

Results Explain Describe Saved SQL History

FEEDBACKID	FEEDBACKDATE	FEEDBACKSCORE	EVALUATEDBY	EVALUATEDFOR	SUBPROJECTID	REPRESENTATIVEID
101	01/05/2021	6	VESS	PROJECT_END	401	4500
102	05/06/2021	9	BEN	LEAVING_PROJECT	402	4502
105	05/09/2021	9	MAC	LEAVING_PROJECT	405	4508
103	06/08/2021	8	JUNE	PROJECT_END	403	4504
104	02/11/2021	7	MARCH	PROJECT_END	404	4506

5 rows returned in 0.04 seconds [Download](#)

akkirajuharika@gmail.com harikaunt en Copyright © 1999, 2021, Oracle and/or its affiliates. Oracle APEX 21.2.0

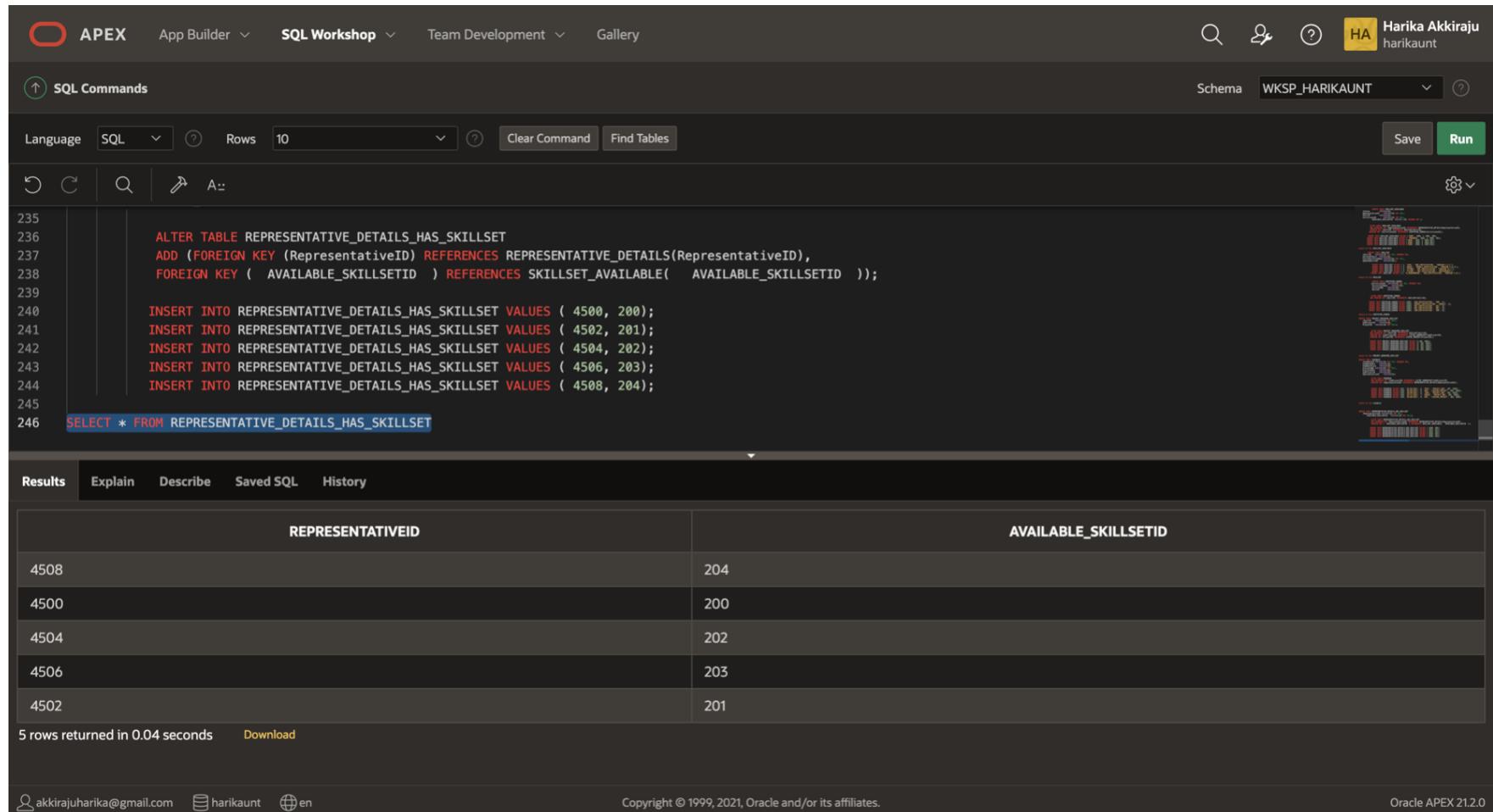
11. REPRESENTATIVE SKILLSET DETAILS:

```
CREATE TABLE REPRESENTATIVE_DETAILS_HAS_SKILLSET
(RepresentativeID VARCHAR(10) NOT NULL,
 AVAILABLE_SKILLSETID  VARCHAR(10) NOT NULL);

ALTER TABLE REPRESENTATIVE_DETAILS_HAS_SKILLSET
ADD (FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
FOREIGN KEY ( AVAILABLE_SKILLSETID ) REFERENCES SKILLSET_AVAILABLE( AVAILABLE_SKILLSETID ));

INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4500, 200);
INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4502, 201);
INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4504, 202);
INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4506, 203);
INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4508, 204);
```

IN APEX:



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop, Team Development, and Gallery. The user is logged in as Harika Akkiju (ha@harikaunt). The SQL Commands tab is active, showing a code editor with the following SQL statements:

```
235
236 ALTER TABLE REPRESENTATIVE_DETAILS_HAS_SKILLSET
237 ADD (FOREIGN KEY (RepresentativeID) REFERENCES REPRESENTATIVE_DETAILS(RepresentativeID),
238 FOREIGN KEY ( AVAILABLE_SKILLSETID ) REFERENCES SKILLSET_AVAILABLE( AVAILABLE_SKILLSETID ) );
239
240 INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4500, 200 );
241 INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4502, 201 );
242 INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4504, 202 );
243 INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4506, 203 );
244 INSERT INTO REPRESENTATIVE_DETAILS_HAS_SKILLSET VALUES ( 4508, 204 );
245
246 SELECT * FROM REPRESENTATIVE_DETAILS_HAS_SKILLSET
```

The results tab displays the output of the last query:

REPRESENTATIVEID	AVAILABLE_SKILLSETID
4508	204
4500	200
4504	202
4506	203
4502	201

Below the results, it says "5 rows returned in 0.04 seconds" and provides a "Download" link.

The bottom footer includes links for user profile, workspace, and help, along with copyright information: "Copyright © 1999, 2021, Oracle and/or its affiliates." and "Oracle APEX 21.2.0".

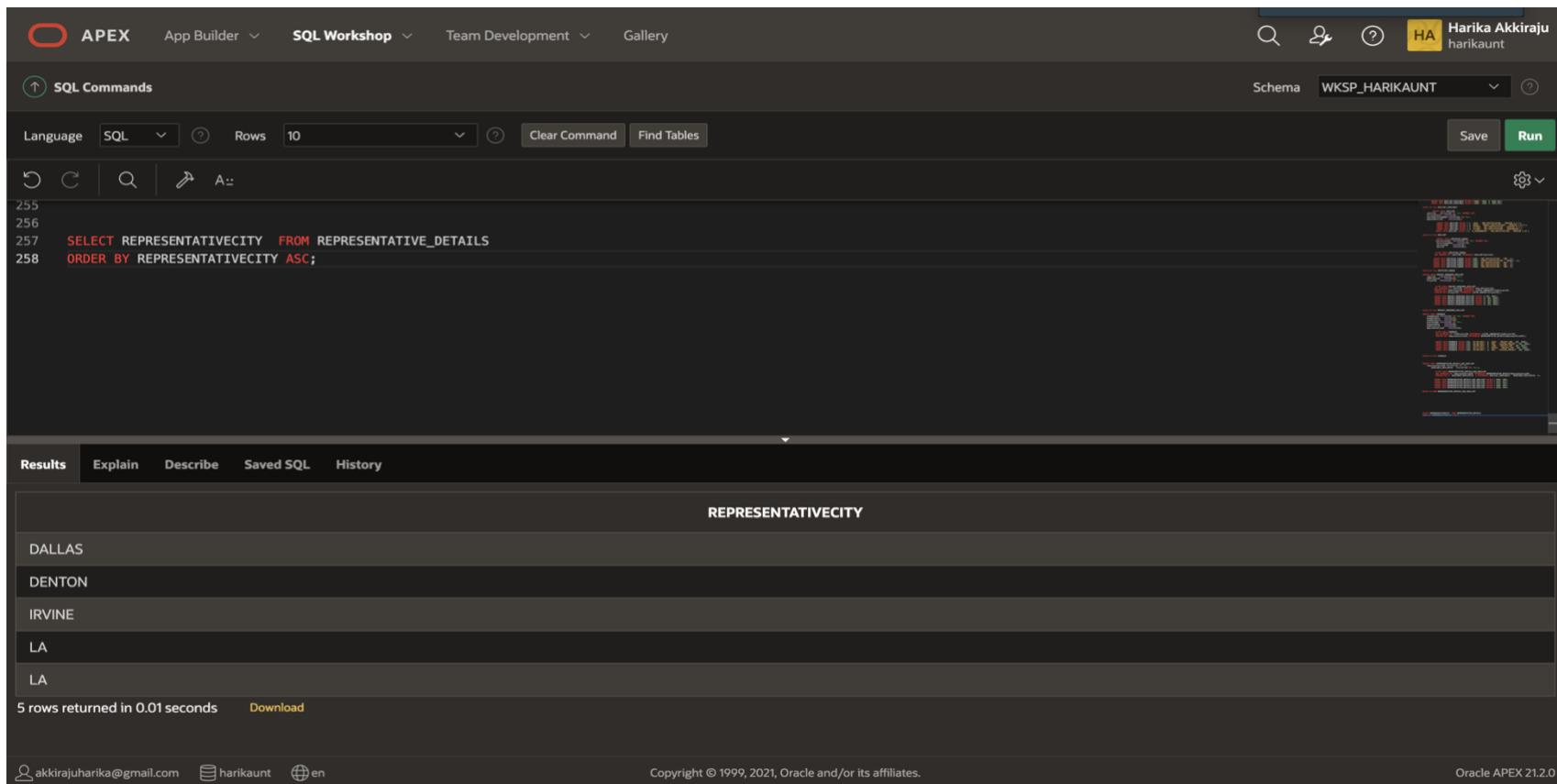
- **SQL QUERIES AND RESULTS:**

- a) Retrieve the name of each city where a consultant lives. Suppress duplicate output and display the values in alphabetical order:

Query:

```
SELECT REPRESENTATIVECITY FROM REPRESENTATIVE_DETAILS  
ORDER BY REPRESENTATIVECITY ASC;
```

RESULT:



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. The top right corner shows the user's profile: HA Harika Akkiraju harikaunt. The main workspace is titled "SQL Commands". The query entered is:

```
255  
256  
257 SELECT REPRESENTATIVECITY FROM REPRESENTATIVE_DETAILS  
258 ORDER BY REPRESENTATIVECITY ASC;
```

The results tab is selected, displaying the output:

REPRESENTATIVECITY
DALLAS
DENTON
IRVINE
LA
LA

Below the results, a message indicates "5 rows returned in 0.01 seconds" and provides a "Download" link.

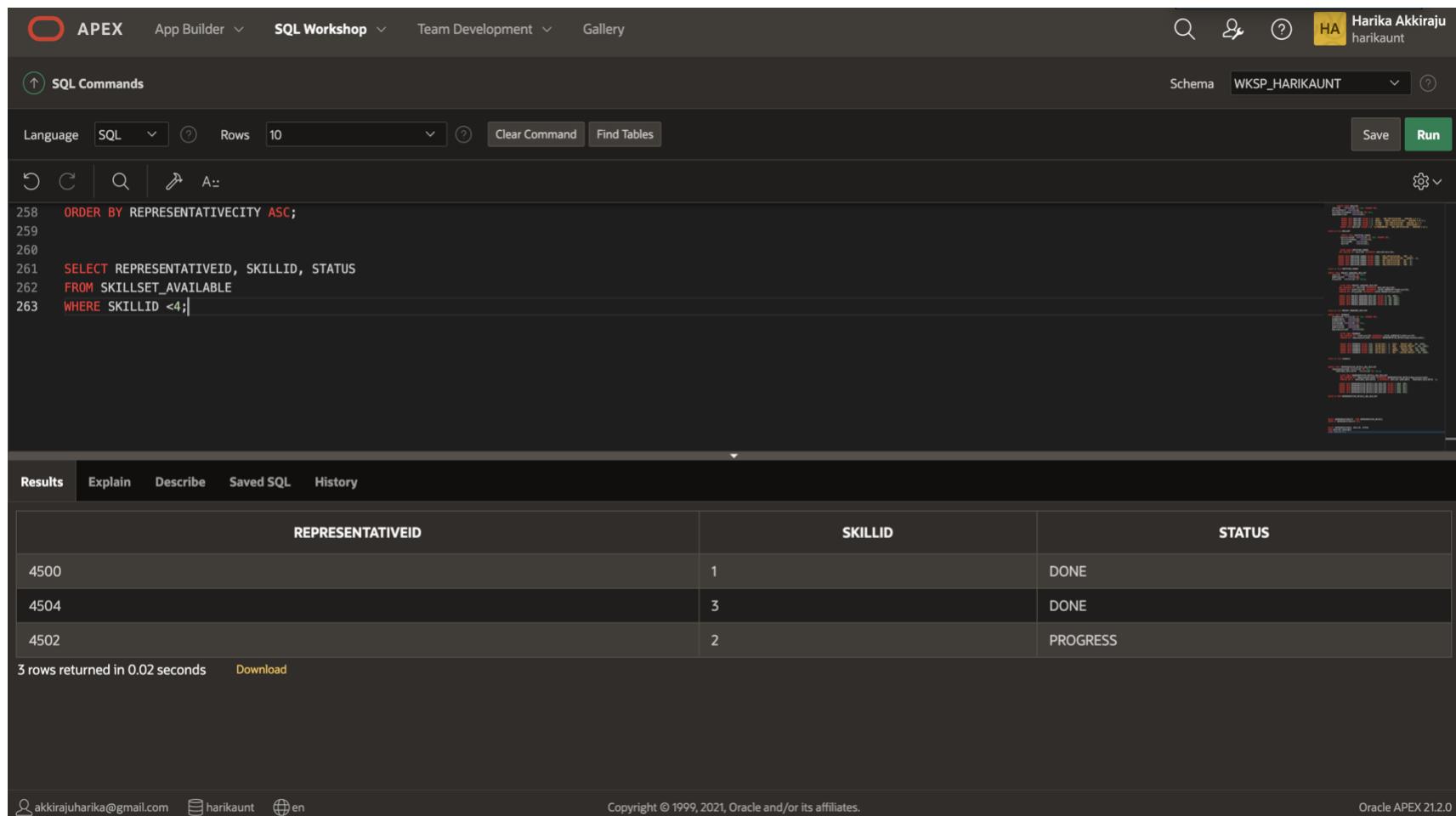
At the bottom of the page, there are footer links for email (akkirajuharika@gmail.com), user profile (harikaunt), and language (en). The copyright notice reads "Copyright © 1999, 2021, Oracle and/or its affiliates." and the version is "Oracle APEX 21.2.0".

- b) Retrieve the consultant id, skill id and certification status for every consultant who is proficient with skill ID 1, 2, 3;

Query:

```
SELECT REPRESENTATIVEID, SKILLID, STATUS  
FROM SKILLSET_AVAILABLE  
WHERE SKILLID <4;
```

RESULT:



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. The user is logged in as 'Harika Akkiraju' (ha). The SQL Commands tab is active, showing the following SQL code:

```
258 ORDER BY REPRESENTATIVECITY ASC;  
259  
260  
261 SELECT REPRESENTATIVEID, SKILLID, STATUS  
262 FROM SKILLSET_AVAILABLE  
263 WHERE SKILLID <4;
```

The Results tab is selected, displaying the query results in a table:

REPRESENTATIVEID	SKILLID	STATUS
4500	1	DONE
4504	3	DONE
4502	2	PROGRESS

At the bottom left, it says '3 rows returned in 0.02 seconds'. The bottom right corner indicates the version is Oracle APEX 21.2.0.

- c) Retrieve the first and last name of those consultant whose name begin with an “m”

Query:

```
SELECT REPRESENTATIVEFIRSTNAME, REPRESENTATIVELASTNAME  
FROM REPRESENTATIVE_DETAILS  
WHERE REPRESENTATIVELASTNAME LIKE 'M%';
```

RESULT:

The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The query entered is:

```
1 SELECT REPRESENTATIVEFIRSTNAME, REPRESENTATIVELASTNAME  
2 FROM REPRESENTATIVE_DETAILS  
3 WHERE REPRESENTATIVELASTNAME LIKE 'M%'
```

The results section displays a single row:

REPRESENTATIVEFIRSTNAME	REPRESENTATIVELASTNAME
MARK	MAYERS

Below the results, it says "1 rows returned in 0.00 seconds".

At the bottom, there are footer links: akkirajuharika@gmail.com, harikaunt, en, Copyright © 1999, 2021, Oracle and/or its affiliates., and Oracle APEX 21.2.0.

- d) Retrieve the last name of each consultant and the name of each project they work on

Query:

```
SELECT REPRESENTATIVELASTNAME ,ProjectName  
FROM REPRESENTATIVE_DETAILS  
RIGHT JOIN LISTOF_PROJECT ON REPRESENTATIVE_DETAILS.REPRESENTATIVEID= LISTOF_PROJECT.REPRESENTATIVEID;
```

RESULTS:

The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. On the right, there's a user profile for 'Harika Akkiraju' (ha@harikaunt). The main area is titled 'SQL Commands' and contains the following SQL code:

```
1 SELECT REPRESENTATIVELASTNAME, REPRESENTATIVELASTNAME  
2 FROM REPRESENTATIVE_DETAILS  
3 WHERE REPRESENTATIVELASTNAME LIKE 'M%'  
4  
5  
6 SELECT REPRESENTATIVELASTNAME ,ProjectName  
7 FROM REPRESENTATIVE_DETAILS  
8 RIGHT JOIN LISTOF_PROJECT ON REPRESENTATIVE_DETAILS.REPRESENTATIVEID= LISTOF_PROJECT.REPRESENTATIVEID;  
9
```

Below the code, there are tabs for 'Results', 'Explain', 'Describe', 'Saved SQL', and 'History'. The 'Results' tab is selected, displaying a table with two columns: 'REPRESENTATIVELASTNAME' and 'PROJECTNAME'. The data is as follows:

REPRESENTATIVELASTNAME	PROJECTNAME
KEL	AMAZON_PRIME_NEW_RELEASE
JOHNSON	VPLAYED痈ADS_PLAYED
MAYERS	NETFLIX_DOCUMENTARY
JONS	DISNEY_SCI_FI
JERRY	IBM_EDUCATIONAL_VIDEOS

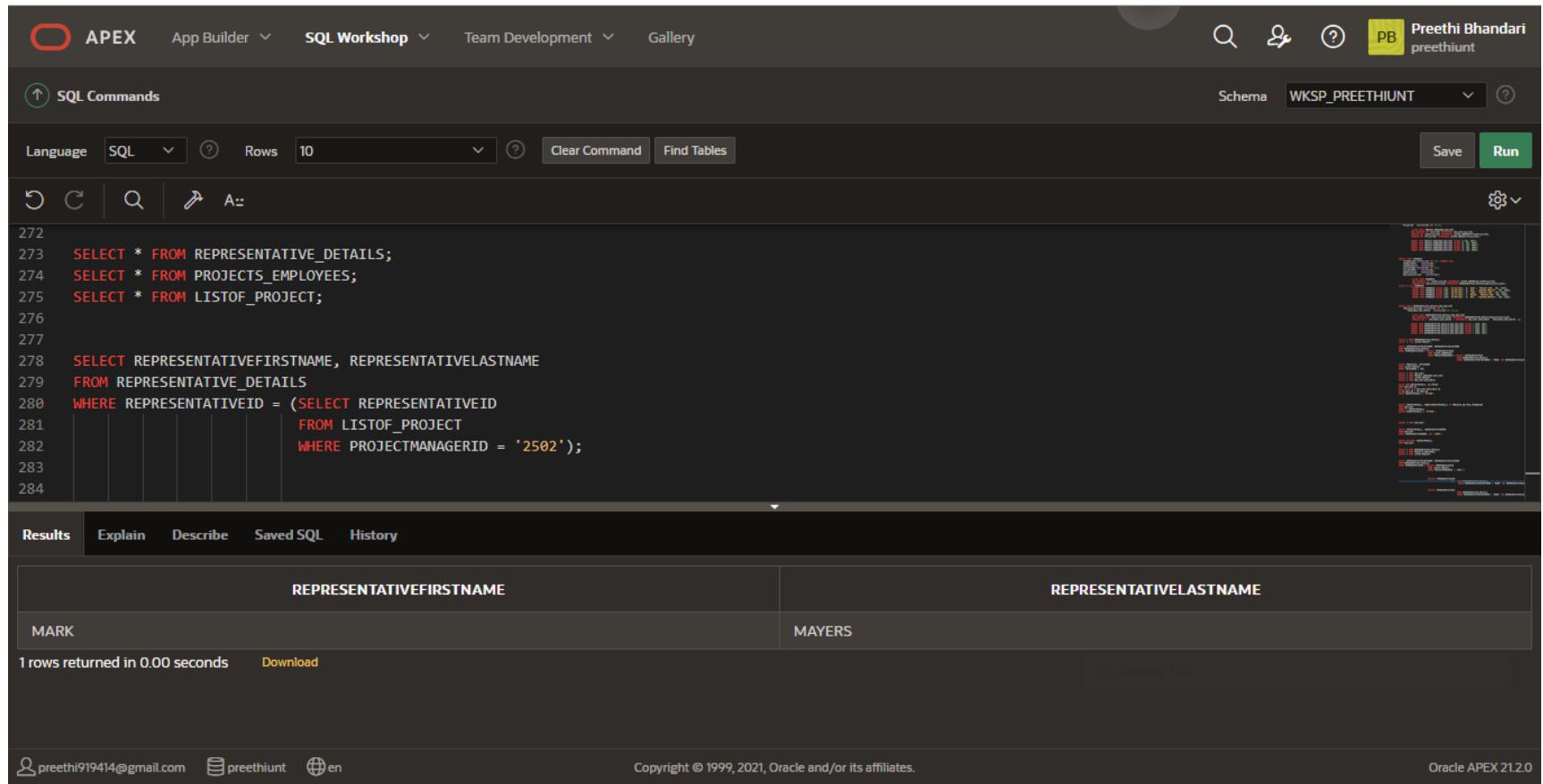
At the bottom left, it says '5 rows returned in 0.02 seconds' and has a 'Download' link. The bottom footer includes links for 'akkirajuharika@gmail.com', 'harikaunt', and 'en', along with copyright information: 'Copyright © 1999, 2021, Oracle and/or its affiliates.' and 'Oracle APEX 21.2.0'.

- e) List the first and last name of every consultant who has worked with Mark Meyers (use a subquery);

QUERY:

```
SELECT REPRESENTATIVEFIRSTNAME, REPRESENTATIVELASTNAME  
FROM REPRESENTATIVE_DETAILS  
WHERE REPRESENTATIVEID = (SELECT REPRESENTATIVEID FROM LISTOF_PROJECT WHERE PROJECTMANAGERID = '2502');
```

RESULT:



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop, Team Development, and Gallery. On the right side, there is a user profile for 'Preethi Bhandari' (preethiunt). The main workspace is titled 'SQL Commands'. The language is set to 'SQL', and the number of rows is set to 10. The schema is 'WKSP_PREETHIUNT'. Below the toolbar, there are icons for Undo, Redo, Find, and Paste. The SQL editor area contains the following code:

```
272  
273  SELECT * FROM REPRESENTATIVE_DETAILS;  
274  SELECT * FROM PROJECTS_EMPLOYEES;  
275  SELECT * FROM LISTOF_PROJECT;  
276  
277  
278  SELECT REPRESENTATIVEFIRSTNAME, REPRESENTATIVELASTNAME  
279  FROM REPRESENTATIVE_DETAILS  
280  WHERE REPRESENTATIVEID = (SELECT REPRESENTATIVEID  
281          FROM LISTOF_PROJECT  
282          WHERE PROJECTMANAGERID = '2502');  
283  
284
```

The results tab is selected, showing the output of the query:

REPRESENTATIVEFIRSTNAME	REPRESENTATIVELASTNAME
MARK	MAYERS

Below the results, it says '1 rows returned in 0.00 seconds' and has a 'Download' link.

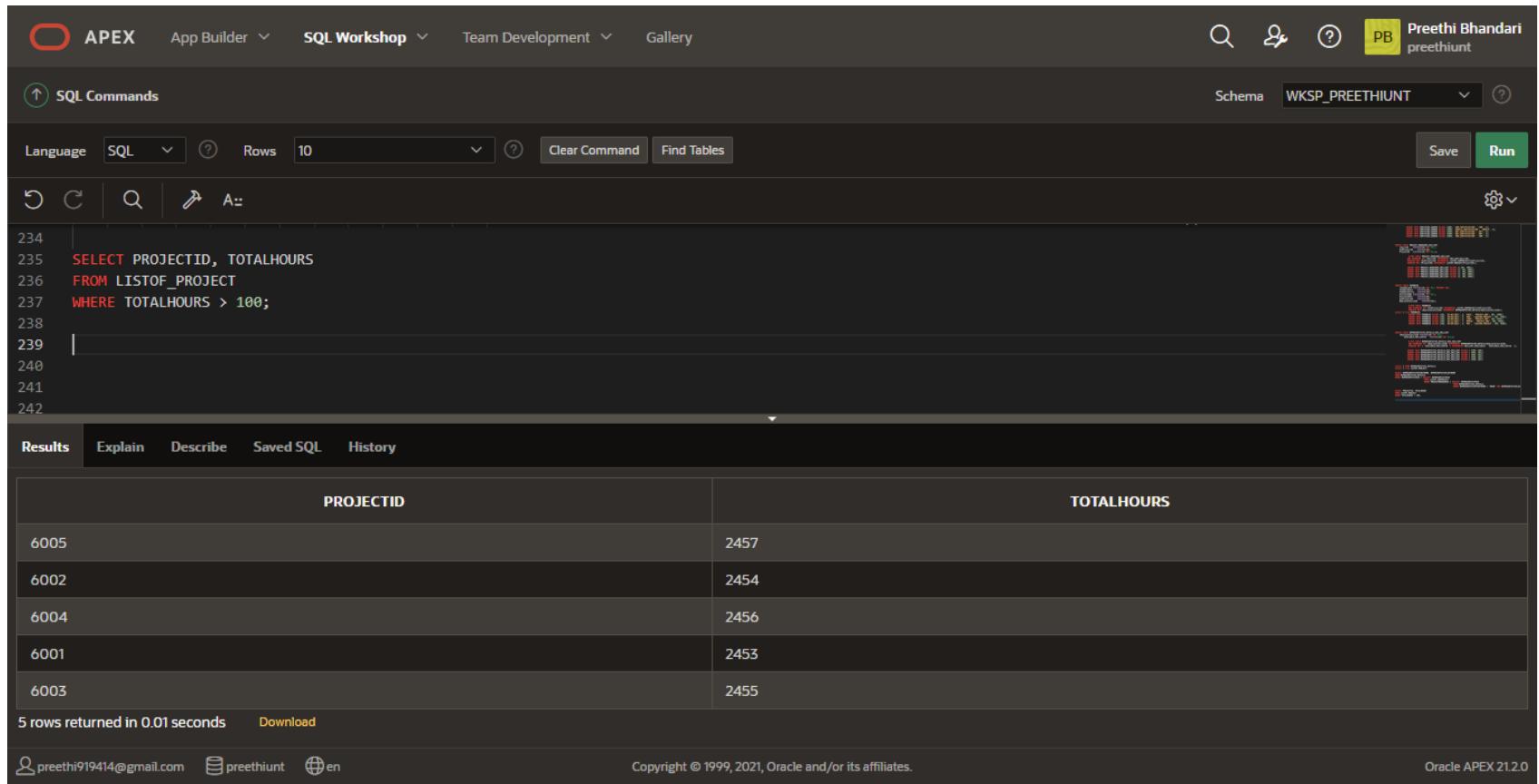
At the bottom of the page, there are footer links for email (preethi919414@gmail.com), profile (preethiunt), and language (en). The copyright notice reads 'Copyright © 1999, 2021, Oracle and/or its affiliates.' and the page version is 'Oracle APEX 21.2.0'.

- f) Display each project id and the total number of hours that all consultants have spent on that project (only display data for projects that have accumulated over 100 hours);

QUERY:

```
SELECT PROJECTID, TOTALHOURS  
FROM LISTOF_PROJECT  
WHERE TOTALHOURS > 100;
```

RESULT:



The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The query has been run, and the results are displayed in a table. The results show five rows of data, each containing a PROJECTID and its corresponding TOTALHOURS.

PROJECTID	TOTALHOURS
6005	2457
6002	2454
6004	2456
6001	2453
6003	2455

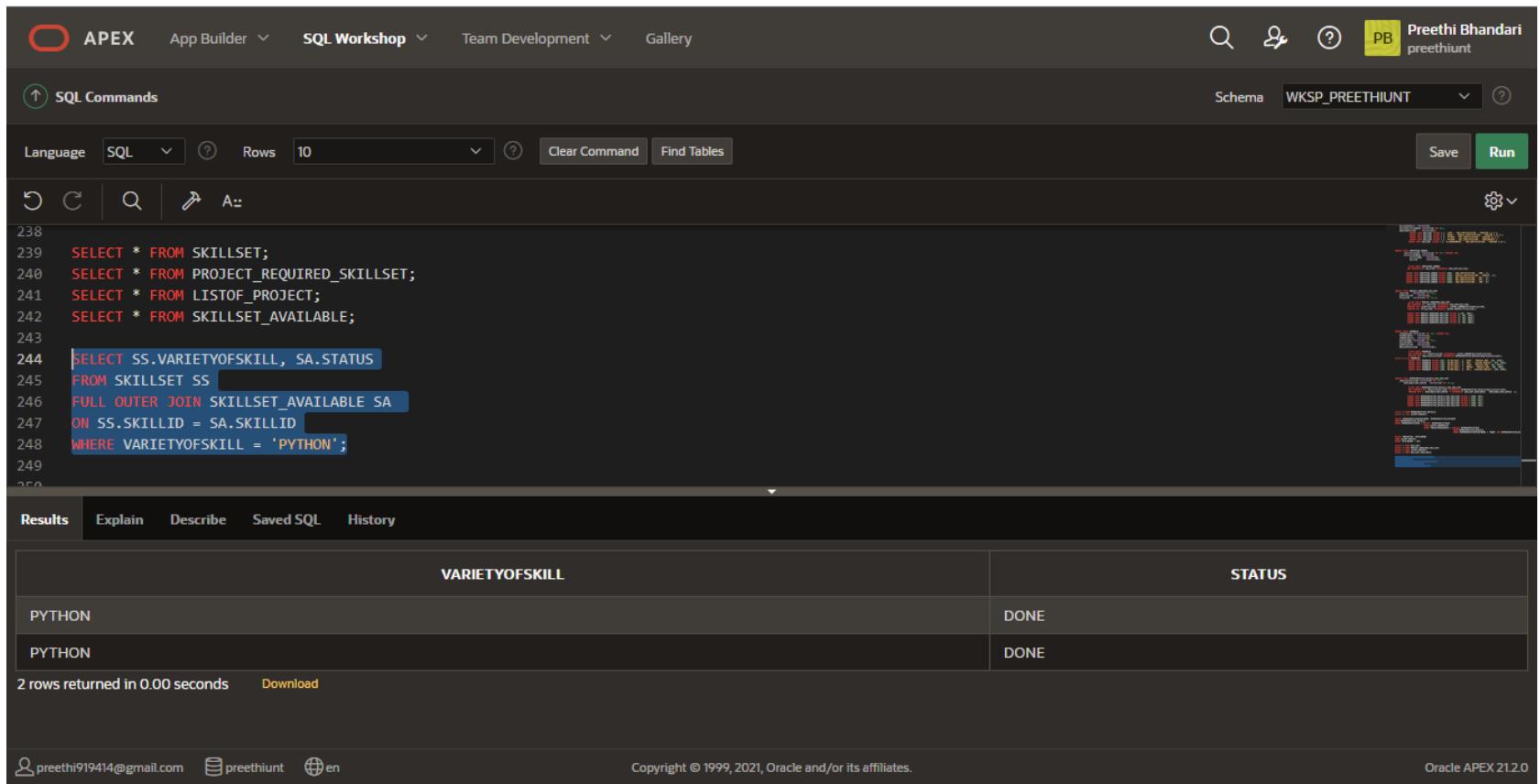
Below the table, it says "5 rows returned in 0.01 seconds". The bottom of the page includes standard footer links and copyright information.

- g) Develop your own query that uses an outer join;

QUERY:

```
SELECT SS.VARIETYOFSKILL, SA.STATUS  
FROM SKILLSET SS  
FULL OUTER JOIN SKILLSET_AVAILABLE SA  
ON SS.SKILLID = SA.SKILLID  
WHERE VARIETYOFSKILL = 'PYTHON';
```

RESULT:



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes links for APEX, App Builder, SQL Workshop (selected), Team Development, and Gallery. The user is identified as Preethi Bhandari (preethiunt). The main workspace is titled "SQL Commands". The language is set to SQL, and the number of rows to display is 10. The query editor contains the following code:

```
238  SELECT * FROM SKILLSET;  
239  SELECT * FROM PROJECT_REQUIRED_SKILLSET;  
240  SELECT * FROM LISTOF_PROJECT;  
241  SELECT * FROM SKILLSET_AVAILABLE;  
242  
243 244  SELECT SS.VARIETYOFSKILL, SA.STATUS  
245  FROM SKILLSET SS  
246  FULL OUTER JOIN SKILLSET_AVAILABLE SA  
247  ON SS.SKILLID = SA.SKILLID  
248  WHERE VARIETYOFSKILL = 'PYTHON';  
249  
250
```

The results tab shows the output of the query:

VARIETYOFSKILL	STATUS
PYTHON	DONE
PYTHON	DONE

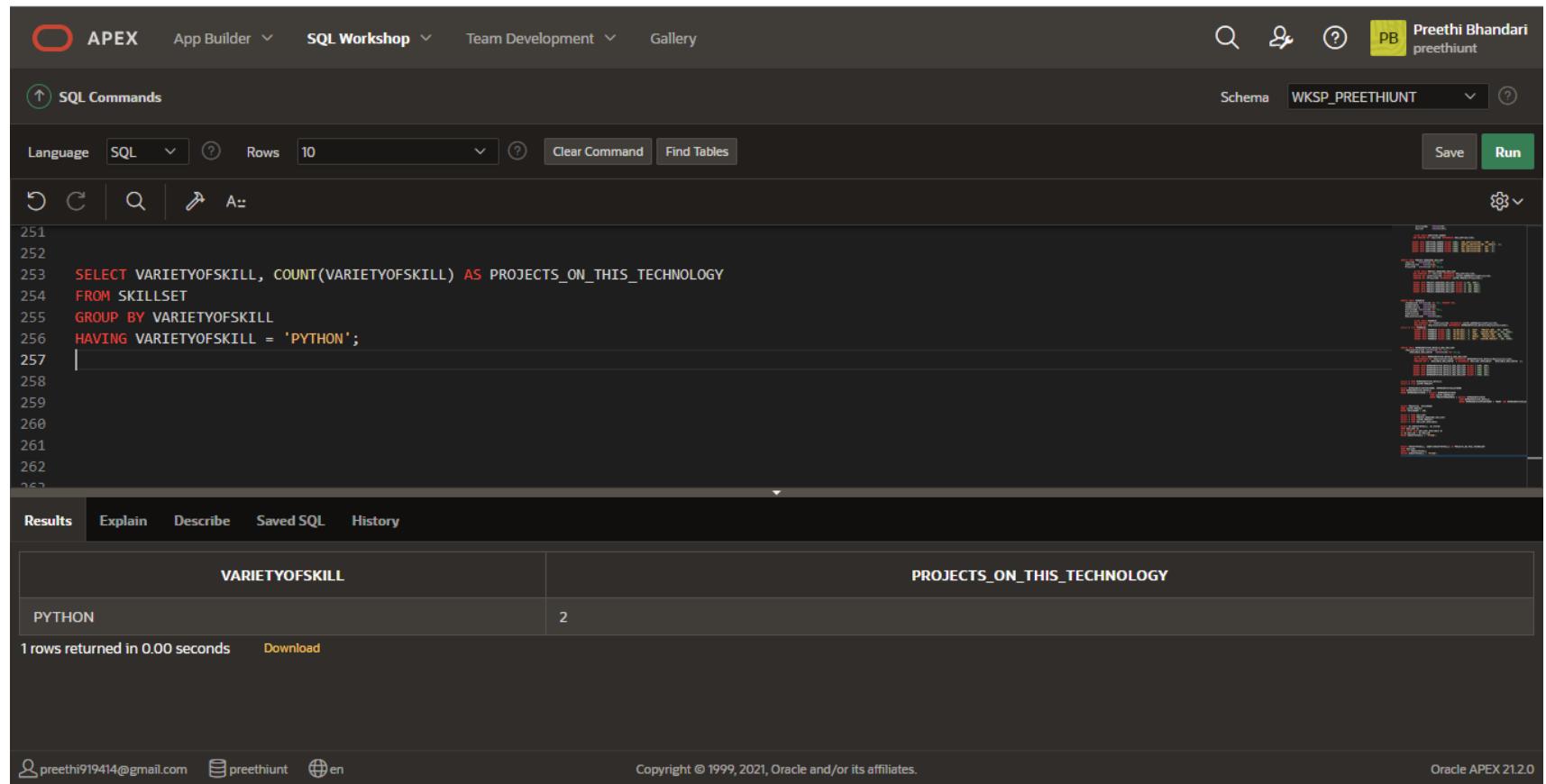
Below the results, it says "2 rows returned in 0.00 seconds" and provides a "Download" link. The bottom of the page includes user information (preethi919414@gmail.com, preethiunt, en), a copyright notice (Copyright © 1999, 2021, Oracle and/or its affiliates.), and the version "Oracle APEX 21.2.0".

- h) Develop your own query that uses a group by with the having clause;

QUERY:

```
SELECT VARIETYOFSKILL, COUNT(VARIETYOFSKILL) AS PROJECTS_ON_THIS_TECHNOLOGY  
FROM SKILLSET  
GROUP BY VARIETYOFSKILL  
HAVING VARIETYOFSKILL = 'PYTHON';
```

RESULT:



The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The query is displayed in the SQL Commands pane:

```
251  
252  
253 SELECT VARIETYOFSKILL, COUNT(VARIETYOFSKILL) AS PROJECTS_ON_THIS_TECHNOLOGY  
254 FROM SKILLSET  
255 GROUP BY VARIETYOFSKILL  
256 HAVING VARIETYOFSKILL = 'PYTHON';  
257  
258  
259  
260  
261  
262  
263
```

The Results pane shows the output of the query:

VARIETYOFSKILL	PROJECTS_ON_THIS_TECHNOLOGY
PYTHON	2

Below the results, it says "1 rows returned in 0.00 seconds" and has a "Download" link.

At the bottom of the page, there are footer links for user profile, language, and copyright information.

- i) Develop your own query that uses the LIKE keyword;

QUERY:

```
SELECT VARIETYOFSKILL, COURSECERTIFIEDNAME  
FROM SKILLSET  
WHERE COURSECERTIFIEDNAME LIKE '%IBM%';
```

RESULT:

The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The user, Preethi Bhandari (preethiunt), is logged in. The schema is set to WKSP_PREETHIUNT. The SQL command entered is:

```
259  
260  
261 SELECT * FROM SKILLSET;  
262  
263 |  
264 SELECT VARIETYOFSKILL, COURSECERTIFIEDNAME  
265 FROM SKILLSET  
266 WHERE COURSECERTIFIEDNAME LIKE '%IBM%';  
267  
268  
269  
270
```

The results section displays the following data:

VARIETYOFSKILL	COURSECERTIFIEDNAME
JAVA	IBM_CERTIFICATION
R_PROGRAMMING	IBM_CERTIFICATION

2 rows returned in 0.01 seconds [Download](#)

At the bottom, the footer includes links for preethi919414@gmail.com, preethiunt, and en, along with copyright information: Copyright © 1999, 2021, Oracle and/or its affiliates. and Oracle APEX 21.2.0.

- j) Develop your own query that uses the DISTINCT keyword.

QUERY:

```
SELECT DISTINCT VARIETYOFSKILL  
FROM SKILLSET;
```

RESULT:

The screenshot shows the Oracle APEX interface with the SQL Workshop module selected. The query `SELECT DISTINCT VARIETYOFSKILL FROM SKILLSET;` is entered in the command editor. The results pane displays four distinct skill categories: NOSQL, JAVA, PYTHON, and R_PROGRAMMING. The interface includes various navigation and configuration buttons typical of a database development tool.

VARIETYOFSKILL
NOSQL
JAVA
PYTHON
R_PROGRAMMING

4 rows returned in 0.00 seconds [Download](#)

Copyright © 1999, 2021, Oracle and/or its affiliates.

Oracle APEX 21.2.0