

EXPERIMENT-7(AGGREGATE FUNCTIONS)

1.Create EMPLOYEE Table:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The URL bar shows the address. The main area is titled 'Live SQL' and contains a 'SQL Worksheet' tab. A green button labeled 'Run' is visible. The code in the worksheet is:

```
1 v CREATE TABLE employee(
2 ID NUMBER PRIMARY KEY,
3 name VARCHAR2(50) NOT NULL,
4 gender CHAR NOT NULL,
5 salary NUMBER(10,2) NOT NULL
6 );
```

Below the code, the message 'Table created.' is displayed. At the bottom of the page, there is a watermark: 'Activate Windows Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use'.

2.INSERT VALUES INTO THE TABLE:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The main area is titled 'Live SQL' and contains a 'SQL Worksheet' tab. A green button labeled 'Run' is visible. The code in the worksheet is:

```
1 v INSERT ALL
2 INTO employee VALUES (1,'RAJU','M',90000)
3 INTO employee VALUES (2,'Balaji','M',95000)
4 INTO employee VALUES (3,'Aravind','M',80000)
5 INTO employee VALUES (4,'Abhilash','M',100000)
6 INTO employee VALUES (5,'Rani','F',85000)
7 INTO employee VALUES (6,'Pinky','F',85000)
8 SELECT * FROM dual;
```

Below the code, the message '6 row(s) inserted.' is displayed. At the bottom of the page, there is a watermark: 'Activate Windows Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use'.

3.SELECT from EMPLOYEE TABLE:

The screenshot shows the Oracle Live SQL interface. At the top, there's a toolbar with various icons like back, forward, search, and help. Below the toolbar, the URL is `livesql.oracle.com/apex/f?p=590:1:116692390325615::RP::`. The main area is titled "SQL Worksheet". A code editor window displays the following SQL query:

```
1 SELECT * FROM employee;
```

The results of the query are shown in a table:

ID	NAME	G	SALARY
1	RAJU	M	90000
2	Balaji	M	95000
3	Aravind	M	80000
4	Abhilash	M	100000
5	Rani	F	85000
6	Pinky	F	85000

Below the table, there's a small preview of the data in a grid format:

ID	NAME	GENDER	SALARY
1	RAJU	M	90000
2	Balaji	M	95000
3	Aravind	M	80000
4	Abhilash	M	100000
5	Rani	F	85000
6	Pinky	F	85000

At the bottom of the interface, there's a watermark: "Activate Windows" and "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

This screenshot is identical to the one above, showing the same SQL worksheet interface and the results of the `SELECT * FROM employee;` query. The data table and the watermark at the bottom are the same.

4.SUM:

The screenshot shows the Oracle LiveSQL interface. At the top, there's a navigation bar with links to Gmail, YouTube, Outlook, Teams-Mindtree, and a placeholder for 'Easy to use Online P...'. On the right of the nav bar are icons for Feedback, Help, and a user account (224g1a0593@srit.ac.in). Below the nav bar is a toolbar with 'Live SQL' (highlighted with a red circle), 'Clear', 'Find', 'Actions', 'Save', and a 'Run' button. The main area is titled 'SQL Worksheet' and contains the following code:

```
1 SELECT SUM(salary) FROM employee;
```

The results pane below shows a single row with the value '535000' under the column 'SUM(SALARY)'. At the bottom of the page, there's a watermark for 'Activate Windows' and copyright information for Oracle.

5.AVG:

6.COUNT:

SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:116692390325615::RP::

Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

Live SQL

Feedback Help 224g1a0593@srit.ac.in

SQL Worksheet

Clear Find Actions Save Run

```
1 SELECT COUNT(salary) FROM employee;
```

COUNT(SALARY)
6

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7.MIN:

SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:116692390325615::RP::

Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

Live SQL

Feedback Help 224g1a0593@srit.ac.in

SQL Worksheet

Clear Find Actions Save Run

```
1 SELECT MIN(salary) FROM employee;
```

MIN(SALARY)
80000

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8.MAX:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The page includes standard browser controls (back, forward, search, etc.) and navigation links (Gmail, YouTube, Outlook, Teams-Mindtree). A 'Live SQL' button is visible. The main area is titled 'SQL Worksheet' with a toolbar for Clear, Find, Actions, Save, and Run. The SQL code entered is:

```
1 SELECT MAX(salary) FROM employee;
```

The results pane shows a single row with the value '100000' under the header 'MAX(SALARY)'. At the bottom of the page, there is a watermark: 'Activate Windows' with a link to 'Go to Settings to activate Windows.' and a note: 'Built with ❤ using Oracle APEX - Privacy - Terms of Use'.

Conclusion: In this lab, we successfully practiced SQL Queries to perform AGGREGATE Operations.

EXPERIMENT-8(BUILT-IN-FUNCTIONS)

1.CREATE TABLE names:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The page includes standard browser controls (back, forward, search, etc.) and navigation links (Gmail, YouTube, Outlook, Teams-Mindtree). A 'Live SQL' button is visible. The main area is titled 'SQL Worksheet' with a toolbar for Clear, Find, Actions, Save, and Run. The SQL code entered is:

```
1 v CREATE TABLE names(
2   first_name VARCHAR2(30)
3   ) NOT NULL,
4   LAST_name VARCHAR2(30) NOT NULL
5 );
```

The results pane shows the message 'Table created.' At the bottom of the page, there is a watermark: 'Activate Windows' with a link to 'Go to Settings to activate Windows.' and a note: 'Built with ❤ using Oracle APEX - Privacy - Terms of Use'.

2.INSERT ALL VALUES:

SQL Worksheet

```
1 v INSERT ALL
2   INTO names VALUES ('Antony','Robert')
3   INTO names VALUES ('Mark','Antony')
4   INTO names VALUES ('Stuart','Smart')
5   INTO names VALUES ('Rakesh','k')
6   select * from dual;
7
```

4 row(s) inserted.

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3.SELECT LOWER:

SQL Worksheet

```
1 SELECT LOWER(first_name) FROM names;
```

LOWER(FIRST_NAME)

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SQL Worksheet

LOWER(FIRST_NAME)
antony
mark
stuart
rakesh

Download CSV

Activate Windows
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4.SELECT UPPER:

The screenshot shows the Live SQL interface with the following details:

- Toolbar:** Includes icons for Feedback, Help, User (224g1a0593@srit.ac.in), and a refresh button.
- SQL Worksheet:** Shows the query `SELECT UPPER(first_name) FROM names;`.
- Result Area:** Displays the output of the query:

UPPER(FIRST_NAME)
ANTONY
MARK
STUART
RAKESH

A "Download CSV" button is visible below the table.

At the bottom, a footer bar displays: "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

5.SELECT INITCAP:

The screenshot shows the Live SQL interface with the following details:

- Toolbar:** Includes icons for Feedback, Help, User (224g1a0593@srit.ac.in), and a refresh button.
- SQL Worksheet:** Shows the query `SELECT INITCAP(first_name) FROM names;`.
- Result Area:** Displays the output of the query:

INITCAP(FIRST_NAME)
Antony
Mark
Stuart
Rakesh

The screenshot shows the Oracle LiveSQL interface. The query `INITCAP(FIRST_NAME)` has been run, resulting in the following output:

Antony
Mark
Stuart
Rakesh

Below the results, there is a "Download CSV" button. At the bottom of the interface, a message bar displays: "Activate Windows" and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with ❤️ using Oracle APEX - Privacy - Terms of Use".

6.SELECT CONCAT:

The screenshot shows the Oracle LiveSQL interface. The query `SELECT CONCAT(first_name,last_name) FROM names;` has been run, resulting in the following output:

AntonyRobert
MarkAnthony
StuartSmart
Rakeshk

The screenshot shows the Oracle LiveSQL interface. The query `SELECT LENGTH(first_name) FROM names;` has been run, resulting in the following output:

7
5
8
6

7.SELECT LENGTH:

The screenshot shows the Oracle LiveSQL interface. The query `SELECT LENGTH(first_name) FROM names;` has been run, resulting in the following output:

7
5
8
6

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main content area displays the results of a SQL query: "LENGTH(FIRST_NAME)". The results are as follows:

	LENGTH(FIRST_NAME)
1	6
2	4
3	6
4	6

Below the results, there is a "Download CSV" button. At the bottom of the page, a message from Oracle states: "Activate Windows 2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

8.SELECT ROUND:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main content area displays the results of a SQL query: "SELECT ROUND(11.111,2) FROM dual;". The result is:

ROUND(11.111,2)
11.11

Below the results, a message from Oracle states: "Activate Windows 2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

9.SELECT SYSDATE:

A screenshot of the Oracle Live SQL Worksheet interface. The title bar shows "SQL Worksheet". The toolbar includes standard browser controls (Back, Forward, Stop, Refresh) and links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main area is titled "Live SQL" and "SQL Worksheet". A code editor window contains the following SQL query:

```
1 | SELECT SYSDATE FROM dual;
```

The results pane shows the output:

SYSDATE
07-JAN-24

At the bottom of the interface, a message from Microsoft prompts activation: "Activate Windows" and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

10.SELECT MONTHS:

A screenshot of the Oracle Live SQL Worksheet interface. The title bar shows "SQL Worksheet". The toolbar includes standard browser controls (Back, Forward, Stop, Refresh) and links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main area is titled "Live SQL" and "SQL Worksheet". A code editor window contains the following SQL query:

```
1 | SELECT MONTHS_BETWEEN(SYSDATE, '08-DEC-2024') FROM dual;
```

The results pane shows the output:

MONTHS_BETWEEN(SYSDATE, '08-DEC-2024')
-11.01113015232974910394265232974910394265

At the bottom of the interface, a message from Microsoft prompts activation: "Activate Windows" and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

11.SELECT ADD:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL bar shows "livesql.oracle.com/apex/f?p=590:1:104497272365051::R::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main content area is titled "Live SQL" and "SQL Worksheet". A code editor window displays the following SQL query:

```
1 SELECT ADD_MONTHS(SYSDATE,12) FROM dual;
```

The results pane shows the output of the query:

ADD_MONTHS(SYSDATE,12)
07-JAN-25

A status bar at the bottom indicates: "Activate Windows" and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

12.SELECT NEXT:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL bar shows "livesql.oracle.com/apex/f?p=590:1:104497272365051::R::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main content area is titled "Live SQL" and "SQL Worksheet". A code editor window displays the following SQL query:

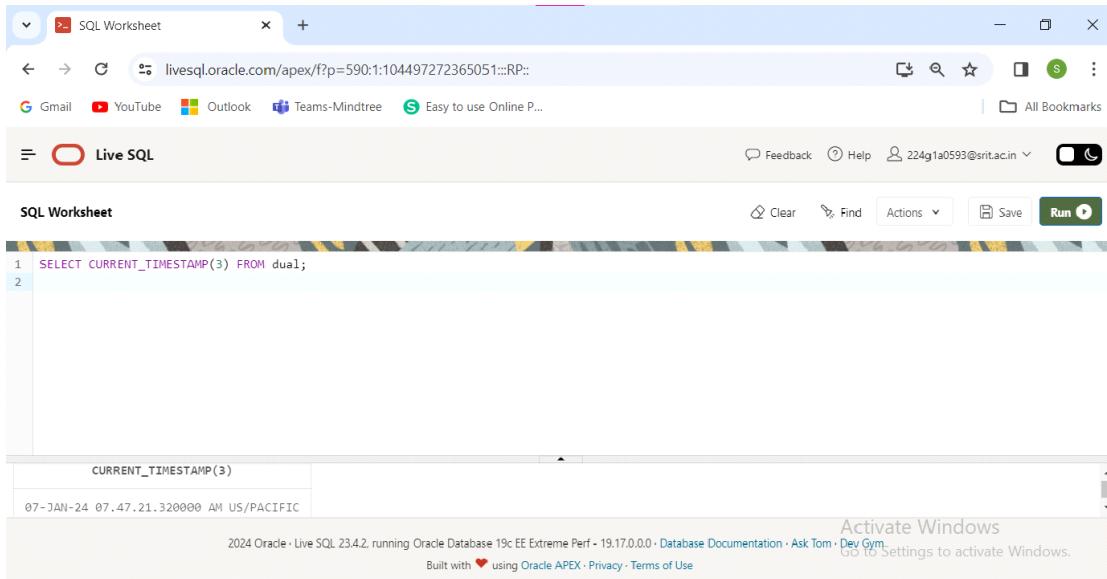
```
1 SELECT NEXT_DAY(SYSDATE,'MONDAY') FROM dual;
```

The results pane shows the output of the query:

NEXT_DAY(SYSDATE,'MONDAY')
08-JAN-24

A status bar at the bottom indicates: "Activate Windows" and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

13.SELECT CURRENT:



The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The page includes standard browser navigation and search tools. The main content area is titled 'Live SQL' and contains a 'SQL Worksheet' tab. A code editor window displays the following SQL query:

```
1 SELECT CURRENT_TIMESTAMP(3) FROM dual;
```

The results pane shows the output of the query:

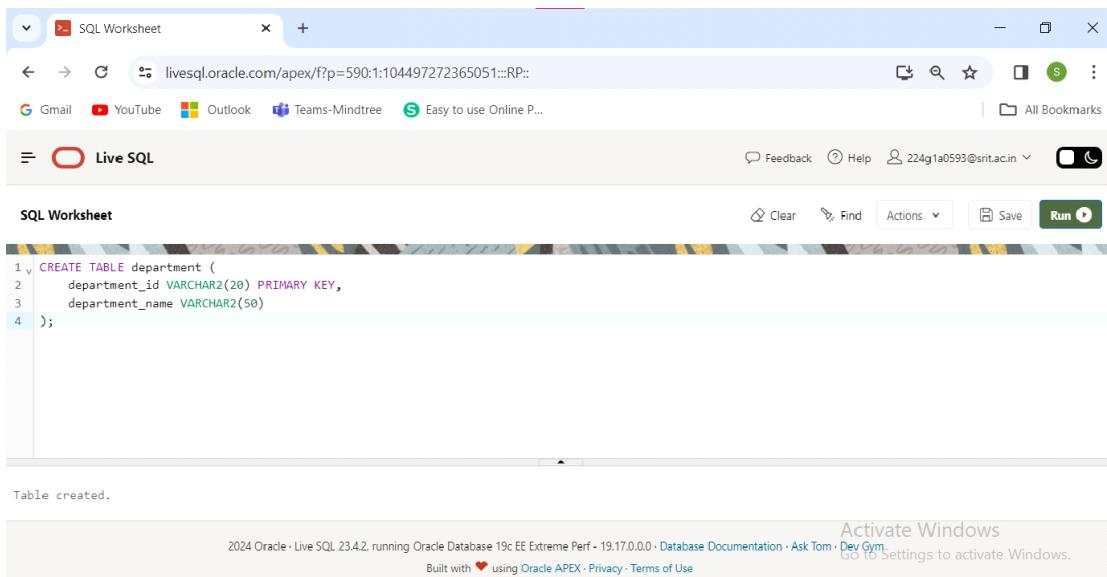
CURRENT_TIMESTAMP(3)
07-JAN-24 07.47.21.320000 AM US/PACIFIC

At the bottom of the page, there is a watermark: 'Activate Windows' with the text '2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use'.

CONCLUSION: In this lab, we successfully practiced sql queries to perform BUILT-IN-FUNCTIONS.

EXPERIMENT-9:(KEY CONSTRAINTS)

1.CREATE TABLE PRIMARY KEY:



The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The page includes standard browser navigation and search tools. The main content area is titled 'Live SQL' and contains a 'SQL Worksheet' tab. A code editor window displays the following SQL query:

```
1 v CREATE TABLE department (
2   department_id VARCHAR2(20) PRIMARY KEY,
3   department_name VARCHAR2(50)
4 );
```

The results pane shows the message 'Table created.' At the bottom of the page, there is a watermark: 'Activate Windows' with the text '2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use'.

2.CREATE TABLE FOREIGN KEY:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The main area contains the following SQL code:

```
1 v CREATE TABLE employee (
2   id VARCHAR2(20) PRIMARY KEY,
3   name VARCHAR2(50),
4   department_id VARCHAR2(20),
5   CONSTRAINT fk_employee_department
6     FOREIGN KEY (department_id)
7     REFERENCES department(department_id)
8 );
```

Below the code, the message 'Table created.' is displayed. At the bottom right of the worksheet, there is an 'Activate Windows' watermark.

3.CREATE TABLES CHECK:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The main area contains the following SQL code:

```
1 v CREATE TABLE depart (
2   department_id VARCHAR2(20) PRIMARY KEY,
3   department_name VARCHAR2(50)
4 );
5
6 v CREATE TABLE employ (
7   id VARCHAR2(20) PRIMARY KEY,
8   name VARCHAR2(50),
9   department_id VARCHAR2(20),
10  CONSTRAINT fk_employee_department
11    FOREIGN KEY (department_id)
```

Below the code, the message 'Table created.' is displayed. At the bottom right of the worksheet, there is an 'Activate Windows' watermark.

4.DEFAULT:

The screenshot shows the Oracle Live SQL Worksheet interface. In the code editor, the following SQL code is written:

```
1 v CREATE TABLE emplo (
2   id VARCHAR2(20) PRIMARY KEY,
3   name VARCHAR2(50) DEFAULT 'John Doe',
4   department_id VARCHAR2(20) DEFAULT 'default_department'
5 );
```

After executing the code, the message "Table created." is displayed below the code editor.

At the bottom of the interface, there is a watermark: "Activate Windows" with a link to "Go to Settings to activate Windows".

CONCLUSION:In this lab,we successfully executed SQL Queries to perform KEY CONSTRAINTS.

EXPERIMENT-10:(FACTORIAL PROGRAM)

The screenshot shows the Oracle Live SQL Worksheet interface. In the code editor, the following PL/SQL code is written:

```
1 v DECLARE
2   fac NUMBER :=1;
3   n NUMBER :=4;
4 v BEGIN
5   WHILE n>0 LOOP
6     fac:=n*fac;
7     n:=n-1;
8   END LOOP;
9   DBMS_OUTPUT.PUT_LINE(FAC);
10 END;
```

After executing the code, the message "Statement processed." is displayed below the code editor.

At the bottom of the interface, there is a watermark: "Activate Windows" with a link to "Go to Settings to activate Windows".

CONCLUSION:In this lab,we successfully practiced a program for calculating the factorial of a given number.

EXPERIMENT:11(PRIME OR NOT):

The screenshot shows the Oracle Live SQL Worksheet interface. The code in the worksheet is:

```
1 v DECLARE
2 n NUMBER;
3 i NUMBER;
4 temp NUMBER;
5 v BEGIN
6 n := 13;
7 i := 2;
8 temp := 1;
9 u FOR i IN 2..n/2
10 LOOP
11 IF MOD(n, i) = 0
```

The output window shows:

```
Statement processed.
24
```

The status bar at the bottom indicates:

```
2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows.
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```

CONCLUSION:In this lab,we successfully practiced a program for Findind the given Number is prime or not.

EXPERIMENT 12:(FIBONACCI SERIES)

The screenshot shows the Oracle Live SQL Worksheet interface. The code in the worksheet is:

```
1 v DECLARE
2 FIRST NUMBER := 0;
3 SECOND NUMBER := 1;
4 TEMP NUMBER;
5 N NUMBER := 5;
6 I NUMBER;
7 v BEGIN
8 DBMS_OUTPUT.PUT_LINE('SERIES:');
9 DBMS_OUTPUT.PUT_LINE('');
10 Statement processed.
```

The output window shows:

```
SERIES:
0
1
1
2
3
```

The status bar at the bottom indicates:

```
2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows.
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```

CONCLUSION:In this lab,we successfully practiced a program for displaying FIBONACCI Series up to an integer.

EXPERIMENT:13(STORED PROCEDURE)

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, the following code is run:

```
1 CREATE TABLE SAILOR(ID NUMBER(10) PRIMARY KEY,NAME VARCHAR2(100));
2 v CREATE OR REPLACE PROCEDURE INSERTUSER
3 (ID IN NUMBER,
4 NAME IN VARCHAR2)
5 IS
6 BEGIN
7 INSERT INTO SAILOR VALUES(ID,NAME);
8 DBMS_OUTPUT.PUT_LINE('RECORD INSERTED SUCCESSFULLY');
9 END;
```

Output from the worksheet:

```
Table created.  
Procedure created.
```

A message bar at the top right says "Activate Windows" and provides activation details.

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, the following code is run:

```
1 v DECLARE
2 CNT NUMBER;
3 v BEGIN
4 INSERTUSER(101,'NARASIMHA');
5 v SELECT COUNT(*) INTO CNT FROM SAILOR;
6 DBMS_OUTPUT.PUT_LINE(CNT||' RECORD IS INSERTED SUCCESSFULLY');
7 END;
8
```

Output from the worksheet:

```
Statement processed.  
RECORD INSERTED SUCCESSFULLY  
1 RECORD IS INSERTED SUCCESSFULLY
```

A message bar at the top right says "Activate Windows" and provides activation details.

CONCLUSION:In this lab,we successfully practiced How to write a program to implement Stored Practiced on table.

EXPERIMENT:14(STORED FUNCTION)

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, a PL/SQL code block is displayed:

```
1 v CREATE FUNCTION fact(x number)
2 RETURN number
3 IS
4 f number;
5 v BEGIN
6 IF x>0 THEN
7 f := 1;
8 v ELSE
9 f := x * fact(x-1);
10 END IF;
11 RETURN f;
```

Below the code, the message "Function created." is visible. A status bar at the bottom indicates the session details: "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, a PL/SQL block is executed:

```
1 v DECLARE
2 num number;
3 factorial number;
4 v BEGIN
5 num:= 6;
6 factorial := fact(num);
7 dbms_output.put_line(' Factorial '|| num || ' is ' || factorial);
8 END;
```

Below the code, the message "Statement processed. Factorial 6 is 720" is visible. A status bar at the bottom indicates the session details: "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

CONCLUSION:In this lab,we successfully practiced PL/SQL Program to implement Stored Function on Table.

EXPERIMENT-15:(TRIGGER)

1.CREATE TABLE INSTRUCTOR:

The screenshot shows a browser window titled "SQL Worksheet" with the URL "livesql.oracle.com/apex/f?p=590:1:104497272365051::R:P...". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and a user profile. A "Live SQL" button is visible in the top right. The main content area is titled "SQL Worksheet" and contains the following SQL code:

```
1 v CREATE TABLE INSTRUCTOR
2 (ID VARCHAR2(5),
3 NAME VARCHAR2(20) NOT NULL,
4 DEPT_NAME VARCHAR2(20),
5 SALARY NUMERIC(8,2) CHECK (SALARY > 29000)
6 );
7
```

Below the code, a message says "Table created." and a watermark at the bottom right reads "Activate Windows".

2. INSERT VALUES INTO TABLE:

The screenshot shows a browser window titled "SQL Worksheet" with the URL "livesql.oracle.com/apex/f?p=590:1:104497272365051::R:P...". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and a user profile. A "Live SQL" button is visible in the top right. The main content area is titled "SQL Worksheet" and contains the following SQL code:

```
1 insert into instructor values ('10101', 'Srinivasan', 'Comp. Sci.', '65000');
2 insert into instructor values ('12121', 'Wu', 'Finance', '90000');
3 insert into instructor values ('15151', 'Mozart', 'Music', '40000');
4 insert into instructor values ('22222', 'Einstein', 'Physics', '95000');
5 insert into instructor values ('32343', 'El Said', 'History', '60000');
6 insert into instructor values ('33456', 'Gold', 'Physics', '87000');
7 insert into instructor values ('45565', 'Katz', 'Comp. Sci.', '75000');
8 insert into instructor values ('58583', 'Califieri', 'History', '62000');
9 insert into instructor values ('76543', 'Singh', 'Finance', '80000');
10 insert into instructor values ('76766', 'Crick', 'Biology', '72000');
11 insert into instructor values ('83821', 'Brandt', 'Comp. Sci.', '92000');
```

Below the code, a message says "1 row(s) inserted." and a watermark at the bottom right reads "Activate Windows".

The screenshot shows a browser window titled "SQL Worksheet" with the URL "livesql.oracle.com/apex/f?p=590:1:104497272365051::R:P...". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and a user profile. A "Live SQL" button is visible in the top right. The main content area is titled "SQL Worksheet" and contains the following SQL code:

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

Below the code, a watermark at the bottom right reads "Activate Windows".

3.REPLACE TRIGGER:

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, the following PL/SQL code is executed:

```
1 v CREATE OR REPLACE TRIGGER display_salary_changes
2 BEFORE UPDATE ON instructor
3 FOR EACH ROW
4 WHEN (NEW.ID = OLD.ID)
5 DECLARE
6 sal_diff number;
7 v BEGIN
8 sal_diff := :NEW.salary - :OLD.salary;
9 dbms_output.put_line('Old salary: ' || :OLD.salary);
10 dbms_output.put_line('New salary: ' || :NEW.salary);
11 dbms_output.put_line('Salary difference: ' || sal_diff);
```

After running the code, a message "Trigger created." is displayed. A status bar at the bottom indicates: "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

4.UPDATE INSTRUCTOR:

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, the following PL/SQL code is executed:

```
1 v DECLARE
2 total_rows number(2);
3 v BEGIN
4 UPDATE instructor
5 SET salary = salary + 5000;
6 v IF sql%notfound THEN
7 dbms_output.put_line('no instructors updated');
8 v ELSIF sql%found THEN
9 total_rows := sql%rowcount;
10 dbms_output.put_line( total_rows || ' instructors updated ');
11 END IF;
```

After running the code, the output shows the updated salaries for multiple rows. The output text is as follows:

```
Statement processed.
Old salary: 65000
New salary: 70000
Salary difference: 5000
Old salary: 90000
New salary: 95000
Salary difference: 5000
Old salary: 40000
New salary: 45000
Salary difference: 5000
Old salary: 95000
New salary: 100000
Salary difference: 5000
Old salary: 60000
New salary: 65000
Salary difference: 5000
Old salary: 87000
New salary: 92000
```

A status bar at the bottom indicates: "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

CONCLUSION:In this lab,we successfully Executed PL/SQL Program to implement Trigger on Table.

EXPERIMENT:16(CURSOR)

1.CREATE TABLE customers:

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, the following SQL code is executed:

```
1 v CREATE TABLE customers(
2 ID NUMBER PRIMARY KEY,
3 NAME VARCHAR2(20) NOT NULL,
4 AGE NUMBER,
5 ADDRESS VARCHAR2(20),
6 SALARY NUMERIC(20,2));
```

After running the code, a message "Table created." is displayed. A status bar at the bottom indicates: "Activate Windows 2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

2.INSERT VALUES INTO customers:

The screenshot shows the Oracle Live SQL interface. In the SQL Worksheet pane, the following SQL code is executed:

```
1 : INSERT INTO customers VALUES(1,'Ramesh',23,'Allabad',25000);
2 : INSERT INTO customers VALUES(2,'Suresh',22,'Kanpur',27000);
3 : INSERT INTO customers VALUES(3,'Mahesh',24,'Ghaziabad',29000);
4 : INSERT INTO customers VALUES(4,'chandhan',25,'Noida',31000);
5 : INSERT INTO customers VALUES(5,'Alex',21,'paris',33000);
6 : INSERT INTO customers VALUES(6,'Sunita',20,'delhi',35000);
```

After running the code, six rows are inserted, as indicated by the message "1 row(s) inserted." repeated six times. A status bar at the bottom indicates: "Activate Windows 2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym. Built with ❤ using Oracle APEX · Privacy · Terms of Use".

3.pl/sql program using cursor:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main content area displays a PL/SQL script:

```
1 v DECLARE
2   c_id customers.id%type;
3   c_name customers.name%type;
4   c_addr customers.address%type;
5 v CURSOR c_customers is
6   SELECT id, name, address FROM customers;
7 v BEGIN
8   OPEN c_customers;
9 v LOOP
```

Below the code, the output of the execution is shown:

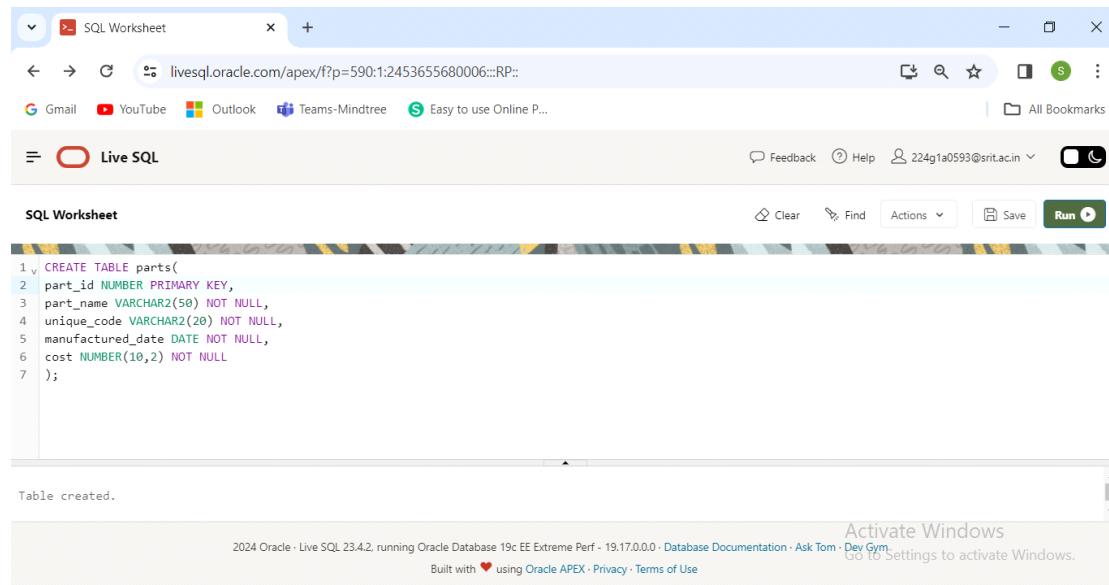
```
Statement processed.
1 Ramesh Allabad
2 Suresh Kanpur
3 Mahesh Ghaziabad
4 chandhan Noida
5 Alex paris
6 Sunita delhi
```

At the bottom right of the interface, there is a watermark: "Activate Windows" and "Built with ❤ using Oracle APEX - Privacy - Terms of Use".

CONCLUSION: In this lab, we successfully Practiced PL/SQL Program to implement Cursor on Table.

EXPERIMENT:1(DDL COMMANDS)

1.CREATE TABLE parts:

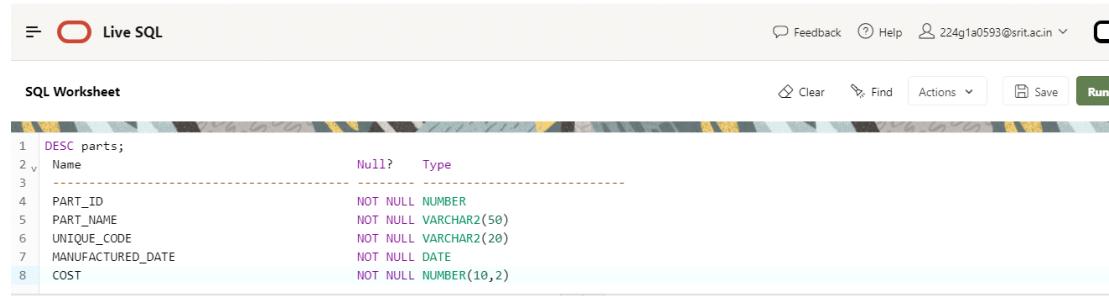


The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:2453655680006::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and Easy to use Online P... The user is logged in as "224g1a0593@srit.ac.in". The main content area is titled "SQL Worksheet" and contains the following SQL code:

```
1 v CREATE TABLE parts(
2 part_id NUMBER PRIMARY KEY,
3 part_name VARCHAR2(50) NOT NULL,
4 unique_code VARCHAR2(20) NOT NULL,
5 manufactured_date DATE NOT NULL,
6 cost NUMBER(10,2) NOT NULL
7 );
```

Below the code, a message says "Table created." A status bar at the bottom indicates "Activate Windows" and "Built with ❤ using Oracle APEX · Privacy · Terms of Use".

DESC parts;



The screenshot shows a browser window titled "Live SQL" on the "livesql.oracle.com" website. The page header includes links for Feedback, Help, and the user "224g1a0593@srit.ac.in". The main content area is titled "SQL Worksheet" and contains the following SQL code:

```
1 DESC parts;
2 v Name Null? Type
3 -----
4 PART_ID NOT NULL NUMBER
5 PART_NAME NOT NULL VARCHAR2(50)
6 UNIQUE_CODE NOT NULL VARCHAR2(20)
7 MANUFACTURED_DATE NOT NULL DATE
8 COST NOT NULL NUMBER(10,2)
```

The screenshot shows the Oracle Live SQL interface. At the top, there's a navigation bar with links to Gmail, YouTube, Outlook, Teams-Mindtree, and a placeholder for 'Easy to use Online P...'. Below the navigation bar is a toolbar with icons for Feedback, Help, and a user account. The main area is titled 'SQL Worksheet' and contains a table definition:

Column	Null?	Type
PART_ID	NOT NULL	NUMBER
PART_NAME	NOT NULL	VARCHAR2(50)
UNIQUE_CODE	NOT NULL	VARCHAR2(20)
MANUFACTURED_DATE	NOT NULL	DATE
COST	NOT NULL	NUMBER(10,2)

At the bottom of the worksheet, there's a message from Oracle: "Activate Windows" followed by "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with ❤️ using Oracle APEX - Privacy - Terms of Use".

2. ALTER TABLE :

The screenshot shows the Oracle Live SQL interface. The SQL worksheet contains the following code:

```
1 v ALTER TABLE parts
2   ADD quantity NUMBER NOT NULL;
3
```

Below the code, the message "Table altered." is displayed.

The screenshot shows the Oracle Live SQL interface. The SQL worksheet contains the following code:

```
1 DESC parts;
2 v Name Null? Type
3 -----
4 PART_ID NOT NULL NUMBER
5 PART_NAME NOT NULL VARCHAR2(50)
6 UNIQUE_CODE NOT NULL VARCHAR2(20)
7 MANUFACTURED_DATE NOT NULL DATE
8 COST NOT NULL NUMBER(10,2)
9 QUANTITY NOT NULL NUMBER
```

Below the code, the message "Table altered." is displayed.

The screenshot shows the Oracle Live SQL interface. At the top, there's a navigation bar with links to Gmail, YouTube, Outlook, Teams-Mindtree, and a placeholder for 'Easy to use Online P...'. Below the navigation bar is a toolbar with icons for Feedback, Help, and a user account. The main area is titled 'SQL Worksheet' and contains a table named 'PARTS'. The table has columns: Column, Null?, and Type. The data in the table is as follows:

Column	Null?	Type
PART_ID	NOT NULL	NUMBER
PART_NAME	NOT NULL	VARCHAR2(50)
UNIQUE_CODE	NOT NULL	VARCHAR2(20)
MANUFACTURED_DATE	NOT NULL	DATE
COST	NOT NULL	NUMBER(10,2)
QUANTITY	NOT NULL	NUMBER

Below the table, there's a 'Download CSV' button. A message at the bottom indicates '6 rows selected.' and provides activation information for Windows.

ALTER TABLE:

The screenshot shows the Oracle Live SQL interface. The top navigation bar and toolbar are identical to the previous screenshot. The main area is titled 'SQL Worksheet' and contains the following SQL code:

```
1 v ALTER TABLE parts
2   MODIFY manufactured_date DATE;
3
```

The code is highlighted in purple and green. A message at the bottom indicates 'Table altered.'

At the bottom of the interface, there's a footer with activation information for Windows.

The screenshot shows the Oracle Live SQL interface. In the top navigation bar, there are links for Gmail, YouTube, Outlook, Teams-Mindtree, and a placeholder for 'Easy to use Online P...'. The main area is titled 'SQL Worksheet' and contains the following SQL code:

```
1 DESC parts;
2 v
3      Name          Null?    Type
4 PART_ID           NOT NULL NUMBER
5 PART_NAME        NOT NULL VARCHAR2(50)
6 UNIQUE_CODE      NOT NULL VARCHAR2(20)
7 COST              NOT NULL NUMBER(10,2)
```

Below the code, a table named 'PARTS' is displayed with the following columns and types:

Column	Null?	Type
PART_ID	NOT NULL	NUMBER
PART_NAME	NOT NULL	VARCHAR2(50)
UNIQUE_CODE	NOT NULL	VARCHAR2(20)
MANUFACTURED_DATE	NOT NULL	DATE
COST	NOT NULL	NUMBER(10,2)

At the bottom right of the interface, there is an 'Activate Windows' message: 'Activate Windows Go to Settings to activate Windows.' and a footer note: '2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym Built with ❤ using Oracle APEX · Privacy · Terms of Use'.

3.CREATE TABLE boats:

The screenshot shows the Oracle Live SQL interface. In the top navigation bar, there are links for Gmail, YouTube, Outlook, Teams-Mindtree, and a placeholder for 'Easy to use Online P...'. The main area is titled 'SQL Worksheet' and contains the following SQL code:

```
1 v CREATE TABLE boats(
2 boat_id NUMBER PRIMARY KEY,
3 boat_name VARCHAR2(50) NOT NULL
4 );
```

Below the code, a message 'Table created.' is displayed. At the bottom right of the interface, there is an 'Activate Windows' message: 'Activate Windows Go to Settings to activate Windows.' and a footer note: '2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym Built with ❤ using Oracle APEX · Privacy · Terms of Use'.

4.DROP TABLE:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:2453655680006::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". The main content area is titled "Live SQL" and contains a "SQL Worksheet" section. A single line of SQL code, "1 DROP TABLE boats;", is entered. Below the code, the message "Table dropped." is displayed. At the bottom, a footer bar shows "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows.".

```
1 DROP TABLE boats;
```

Table dropped.

5.TRUNCATE TABLE:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:2453655680006::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". The main content area is titled "Live SQL" and contains a "SQL Worksheet" section. Two lines of SQL code, "1 TRUNCATE TABLE parts;" and "2", are entered. Below the code, the message "Table truncated." is displayed. At the bottom, a footer bar shows "2024 Oracle · Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Go to Settings to activate Windows.".

```
1 TRUNCATE TABLE parts;
```

Table truncated.

```
1 select * from PARTS;
```

no data found

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CONCLUSION: In this lab, we successfully performed sql queries using DDL commands.

EXPERIMENT:2(DML COMMANDS)

1.CREATE TABLE persons:

```
1 v CREATE TABLE persons(
2   person_id NUMBER PRIMARY KEY,
3   First_name VARCHAR2(50) NOT NULL,
4   Last_name VARCHAR2(50) NOT NULL,
5   phone_no NUMBER(10) NOT NULL
6   )
```

Table created.

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2.INSERT INTO PERSONS:

SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:109042916377612::RP::

G Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

Live SQL

Feedback Help 224g1a0593@srit.ac.in

SQL Worksheet

Clear Find Actions Save Run

```
1 INSERT INTO persons(person_id,first_name,last_name,phone_no) VALUES(1,'Suresh','Krishna',7382790163);
2 INSERT INTO persons(person_id,first_name,last_name,phone_no) VALUES(2,'JHON','Cristofer',8548585678);
3 INSERT INTO persons(person_id,first_name,last_name,phone_no) VALUES(3,'RAM','SHANKAR',8548585678);
```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

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3.SELECT :

SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:109042916377612::RP::

G Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

Live SQL

Feedback Help 224g1a0593@srit.ac.in

SQL Worksheet

Clear Find Actions Save Run

```
1 SELECT * FROM persons;
```

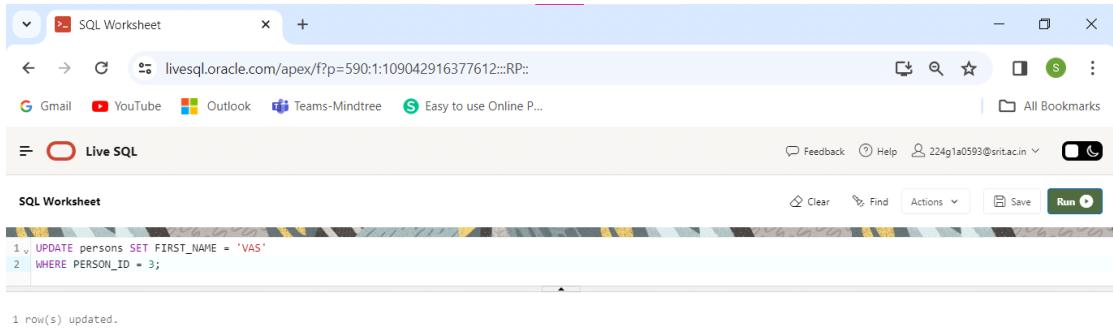
PERSON_ID	FIRST_NAME	LAST_NAME	PHONE_NO
1	Suresh	Krishna	7382790163
2	JHON	Cristofer	8548585678
3	RAM	SHANKAR	8548585678

Download CSV

3 rows selected.

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4.UPDATE:



SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:109042916377612::RP::

G Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

All Bookmarks

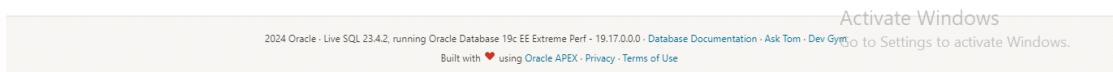
Live SQL

Feedback Help 224g1a0593@srit.ac.in

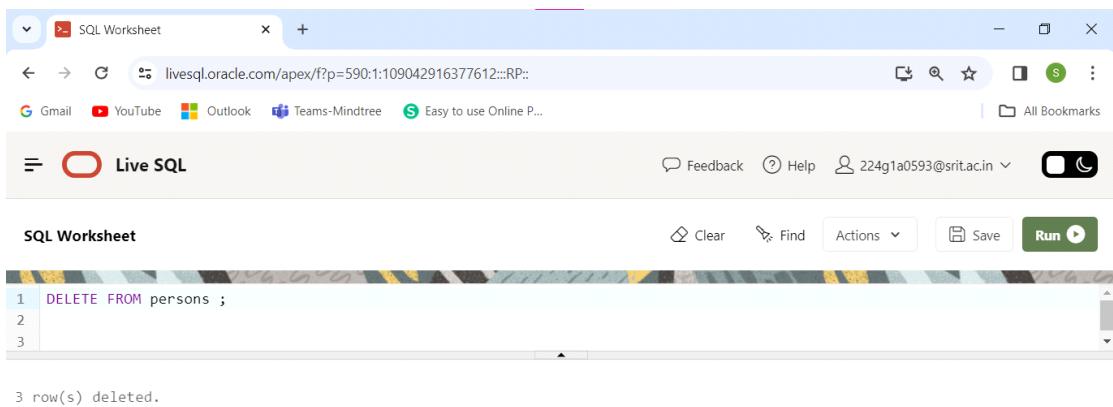
SQL Worksheet

1 ✓ UPDATE persons SET FIRST_NAME = 'VAS'
2 WHERE PERSON_ID = 3;

1 row(s) updated.



5.DELETE:



SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:109042916377612::RP::

G Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

All Bookmarks

Live SQL

Feedback Help 224g1a0593@srit.ac.in

SQL Worksheet

1 DELETE FROM persons ;
2
3

3 row(s) deleted.



CONCLUSION : In this lab, we successfully performed sql queries using DML commands.

EXPERIMENT:3(VIEWS)

1.CREATE TABLE dept:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main area is labeled "Live SQL". A SQL query is entered in the "SQL Worksheet" pane:

```
1 CREATE TABLE dept(dept_name VARCHAR2(20),building VARCHAR2(15),budget NUMBER(12,2));
```

The output below the query shows the message "Table created." and a copyright notice from Oracle.

2.CREATE VIEW:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main area is labeled "Live SQL". A SQL query is entered in the "SQL Worksheet" pane:

```
1 CREATE VIEW dept_view AS SELECT dept_name,budget FROM dept;
```

The output below the query shows the message "View created." and a copyright notice from Oracle.

3.INSERT INTO VALUES:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:111656588341512::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". A "Live SQL" button is visible in the top right. The main area is a "SQL Worksheet" with a toolbar for Clear, Find, Actions, Save, and Run. The SQL code entered is:

```
1 INSERT INTO dept VALUES('ECE', 'A_BLOCK', '660000');
```

The output below the code shows the result of the insertion:

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

A watermark at the bottom right of the worksheet area reads "Activate Windows Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

4.SELECT :

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:111656588341512::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". A "Live SQL" button is visible in the top right. The main area is a "SQL Worksheet" with a toolbar for Clear, Find, Actions, Save, and Run. The SQL code entered is:

```
1 SELECT * FROM dept_view;
```

The result of the query is displayed as a table:

DEPT_NAME	BUDGET
ECE	660000

A "Download CSV" button is located below the table. A watermark at the bottom right of the worksheet area reads "Activate Windows Go to Settings to activate Windows. Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

5.UPDATE :

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:111656588341512::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". The main content area is titled "Live SQL" and contains a "SQL Worksheet" section. A SQL query is entered: "1 UPDATE dept_view SET budget=budget*1.5;". Below the query, the message "1 row(s) updated." is displayed. At the bottom right of the worksheet, there is a "Run" button.

1 UPDATE dept_view SET budget=budget*1.5;

1 row(s) updated.

6.DELETE :

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:111656588341512::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". The main content area is titled "Live SQL" and contains a "SQL Worksheet" section. A SQL query is entered: "1 DELETE FROM dept_view WHERE dept_name='ECE';". Below the query, the message "1 row(s) deleted." is displayed. At the bottom right of the worksheet, there is a "Run" button.

1 DELETE FROM dept_view WHERE dept_name='ECE';

1 row(s) deleted.

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7.DROP :

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:111656588341512::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and Easy to use Online P...". Below the header is a toolbar with "Live SQL" and "Feedback" buttons. The main area is titled "SQL Worksheet" and contains a code editor with the following SQL command:

```
1 DROP VIEW dept_view;
```

After running the query, a message "View dropped." is displayed. A status bar at the bottom right indicates "Activate Windows" and "Go to Settings to activate Windows".

CONCLUSION: In this lab, we successfully created VIEWS using sql queries.

EXPERIMENT:4(RELATIONAL SET OPERATIONS)

1.CREATE TABLE:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page header includes links for Gmail, YouTube, Outlook, Teams-Mindtree, and Easy to use Online P...". Below the header is a toolbar with "Live SQL" and "Feedback" buttons. The main area is titled "SQL Worksheet" and contains a code editor with the following SQL command:

```
1 v CREATE TABLE instructor(
2     ins_id NUMBER(10) PRIMARY KEY,
3     ins_name VARCHAR2(25) NOT NULL,
4     dep_name VARCHAR2(10) NOT NULL,
5     salary NUMBER(10,0)
6 );
```

After running the query, a message "Table created." is displayed. A status bar at the bottom right indicates "Activate Windows" and "Go to Settings to activate Windows".

2.CREATE TABLE department:

SQL Worksheet

```
1 v CREATE TABLE department(
2     dep_id NUMBER(10) PRIMARY KEY,
3     dep_name VARCHAR2(10) NOT NULL,
4     building VARCHAR2(10) NOT NULL,
5     budget NUMBER(10)
6 );
```

Table created.

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3.INSERT ALL VALUES:

SQL Worksheet

```
1 v INSERT ALL
2     INTO instructor VALUES (1,'Suresh','cse',40000)
3     INTO instructor VALUES (2,'Mahesh','csd',37000)
4     INTO instructor VALUES (3,'Aravind','csm',20000)
5     INTO instructor VALUES (4,'Jagadeesh','cse',50000)
6     INTO instructor VALUES (5,'Raju','physics',20000)
7     INTO instructor VALUES (6,'Somesh','EEE',30000)
8     INTO instructor VALUES (7,'Ravi','civil',35000)
9     INTO department VALUES (1,'cse','pandhi',350000)
```

11 row(s) inserted.

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4.SELECT:

```
1 SELECT * FROM INSTRUCTOR;
```

1	Suresh	cse	40000
2	Mahesh	csd	37000
3	Arevind	csm	20000
4	Jagadeesh	cse	50000
5	Raju	physics	20000
6	Somesh	EEE	30000
7	Ravi	civil	35000

Download CSV

7 rows selected.

Activate Windows
Go to Settings to activate Windows.

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5.SELECT departmet:

```
1 SELECT * FROM department;
```

1	cse	gandhi	3500000
2	csm	b_block	1000000
3	ECE	d_block	1500000
4	EEE	c_block	2000000

Download CSV

4 rows selected.

Activate Windows
Go to Settings to activate Windows.

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6.UNION:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page includes a header with links to Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". Below the header is a toolbar with "Live SQL" and "SQL Worksheet" tabs, and buttons for Feedback, Help, and a user ID. The main area contains a SQL editor with the following code:

```
1 v SELECT dep_name FROM instructor
2 UNION
3 SELECT dep_name FROM department;
```

The results of the query are displayed in a table:

dep_name
ECE
EEE
civil
csd
cse
csm
physics

Below the table are "Download CSV" and "Run" buttons. A status bar at the bottom indicates "7 rows selected." and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom / Dev Gym".

7.UNION ALL:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page includes a header with links to Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". Below the header is a toolbar with "Live SQL" and "SQL Worksheet" tabs, and buttons for Feedback, Help, and a user ID. The main area contains a SQL editor with the following code:

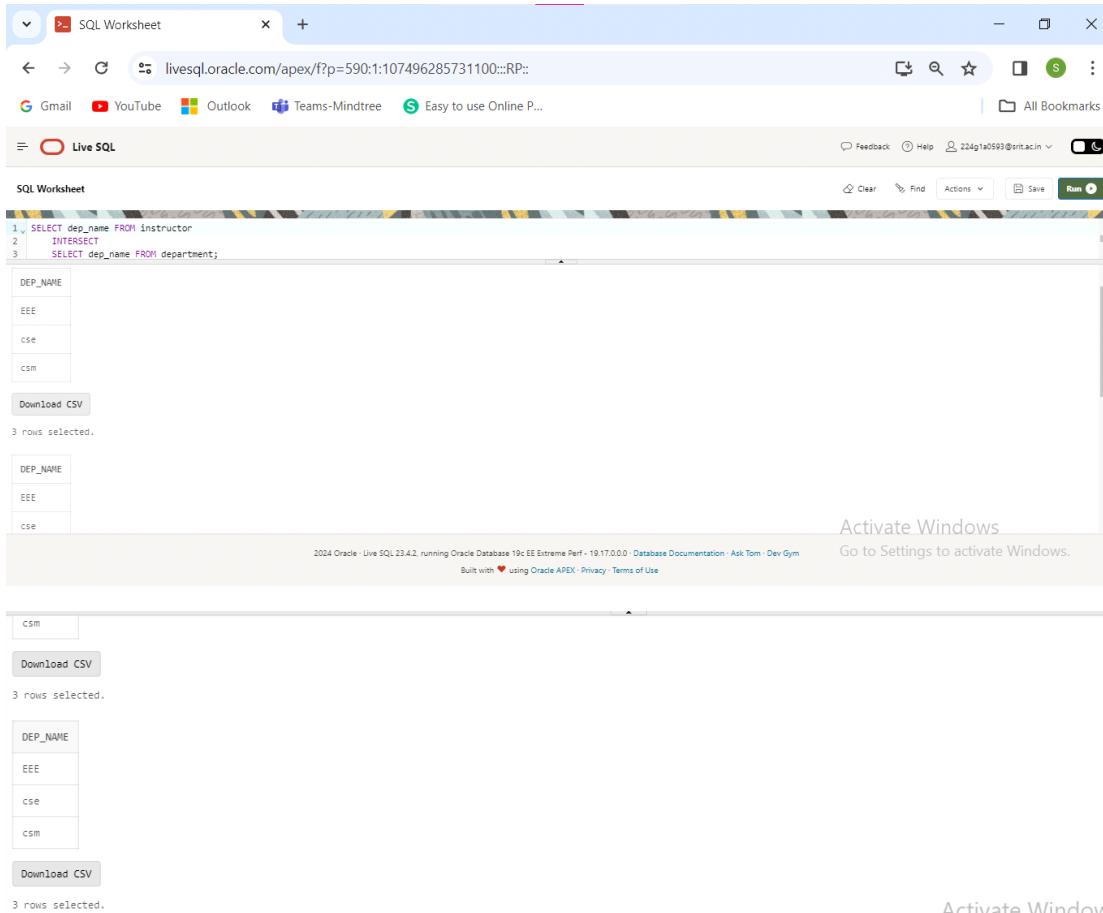
```
1 v SELECT dep_name FROM instructor
2 UNION ALL
3 SELECT dep_name FROM department;
```

The results of the query are displayed in a table:

dep_name
physics
EEE
civil
cse
csm
ECE
EEE

Below the table are "Download CSV" and "Run" buttons. A status bar at the bottom indicates "11 rows selected." and "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom / Dev Gym".

8.INTERSECT:



SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::

G Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

All Bookmarks

Live SQL

SQL Worksheet

```
1 v SELECT dep_name FROM instructor
2   INTERSECT
3   SELECT dep_name FROM department;
```

DEP_NAME
EEE
cse
csm

Download CSV

3 rows selected.

DEP_NAME
EEE
cse

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CSM

Download CSV

3 rows selected.

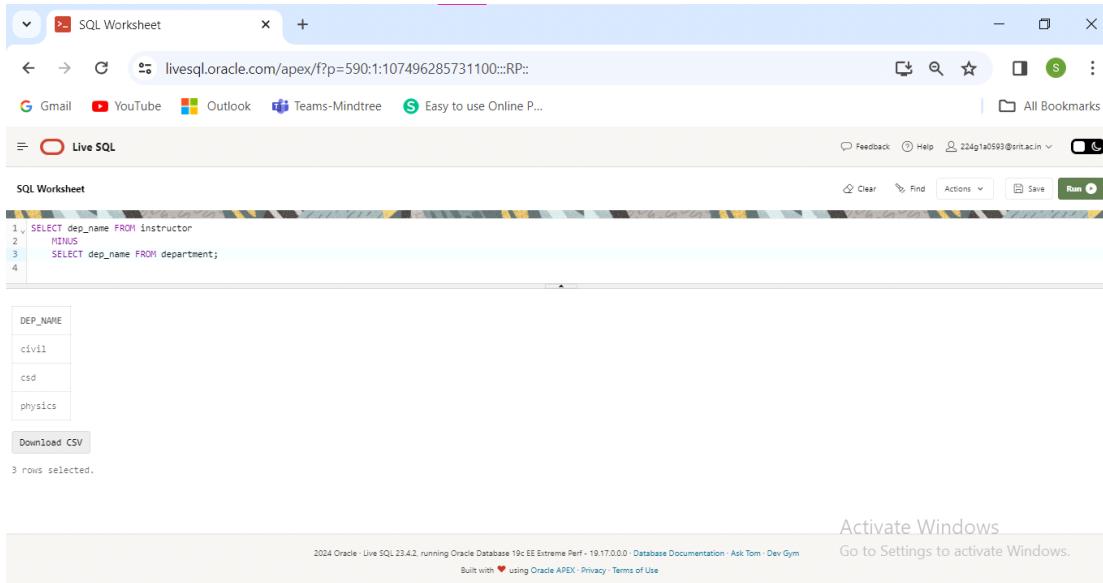
DEP_NAME
EEE
cse
csm

Download CSV

3 rows selected.

Activate Windows

9. MINUS:



SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::

G Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

All Bookmarks

Live SQL

SQL Worksheet

```
1 v SELECT dep_name FROM instructor
2   MINUS
3   SELECT dep_name FROM department;
4
```

DEP_NAME
civil
csd
physics

Download CSV

3 rows selected.

Activate Windows
Go to Settings to activate Windows.

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The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main content area is titled "Live SQL" and contains a "SQL Worksheet" section. The SQL code entered is:

```
1 v  SELECT dep_name FROM department
2      MINUS
3      SELECT dep_name FROM instructor;
```

The results are displayed in a table with a single column "DEP_NAME" containing the value "ECE". Below the table is a "Download CSV" button. At the bottom of the page, there is a message: "Activate Windows" followed by "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with ❤ using Oracle APEX - Privacy - Terms of Use".

SELECT:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main content area is titled "Live SQL" and contains a "SQL Worksheet" section. The SQL code entered is:

```
1 SELECT i.ins_name,d.dep_name,d.budget FROM instructor i,department d;
```

The results are displayed in a table with three columns: "Raju" (ins_name), "EEE" (dep_name), and "2000000" (budget). There are three rows in the table. Below the table is a "Download CSV" button. A message at the bottom states "28 rows selected.". At the very bottom of the page, there is a message: "Activate Windows" followed by "2024 Oracle - Live SQL 23.4.2, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with ❤ using Oracle APEX - Privacy - Terms of Use".

9.NATURAL JOIN:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The page displays a table of data from a query:

```
1 | SELECT i.ins_name,dep_name,d.budget FROM instructor i NATURAL JOIN department d;
```

	ins_name	dep_name	budget
1	Aravind	csm	1000000
2	Jagadeesh	cse	3500000
3	Somesh	EEE	2000000

Below the table, there is a 'Download CSV' button. A message at the bottom indicates '4 rows selected.'

At the bottom right of the interface, there is a watermark: 'Activate Windows' with a link to 'Go to Settings to activate Windows.'

CONCLUSION: In this lab, we successfully performed sql queries using RELATIONAL SET OPERATIONS.

EXPERIMENT:5(SPECIAL OPERATIONS)

1.CREATE TABLE departements:

The screenshot shows a browser window for 'livesql.oracle.com' with the title 'SQL Worksheet'. The page displays the creation of a table:

```
1 v CREATE TABLE departments(
2     id NUMBER PRIMARY KEY,
3     dept_name VARCHAR2(50)
4 );
```

A message at the bottom left says 'Table created.'

At the bottom right of the interface, there is a watermark: 'Activate Windows' with a link to 'Go to Settings to activate Windows.'

2.CREATE TABLE instructors:

SQL Worksheet

```
1 v CREATE TABLE instructors(
2     id NUMBER PRIMARY KEY,
3     name VARCHAR2(50) NOT NULL,
4     salary NUMBER
5 );
```

Table created.

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3.INSERT VALUES:

SQL Worksheet

```
1 v INSERT ALL
2   INTO instructors VALUES (1,'Ram',70000)
3   INTO instructors VALUES (2,'Sham',null)
4   INTO instructors VALUES (3,'Venkat',30000)
5   INTO departments VALUES (1,'CSE')
6   INTO departments VALUES (2,'EEE')
7   INTO departments VALUES (3,'CSM')
8   SELECT * FROM dual;
```

6 row(s) inserted.

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4.SELECT instructors:

The screenshot shows a browser window titled "SQL Worksheet" with the URL "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page includes standard browser navigation and search tools. At the top, there are links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main content area is labeled "Live SQL" and "SQL Worksheet". A SQL query is entered in the editor:

```
1 SELECT * FROM instructors;
```

The results are displayed in a table:

1	Ram	70000	
2	Sham	-	
3	Venkat	30000	

A "Download CSV" button is available at the bottom left. Below the table, it says "3 rows selected.". At the bottom right, there is an "Activate Windows" watermark.

5.SELECT department:

The screenshot shows a browser window titled "SQL Worksheet" with the URL "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page includes standard browser navigation and search tools. At the top, there are links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main content area is labeled "Live SQL" and "SQL Worksheet". A SQL query is entered in the editor:

```
1 SELECT * FROM department;
```

The results are displayed in a table:

1	cse	gandhi	3500000
2	csm	b_block	1000000
3	ECE	d_block	1500000
4	EEE	c_block	2000000

A "Download CSV" button is available at the bottom left. Below the table, it says "4 rows selected.". At the bottom right, there is an "Activate Windows" watermark.

6.ISNULL:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page includes standard browser navigation and a toolbar with "Feedback", "Help", and a user session indicator. Below the toolbar is a "Live SQL" section with a "SQL Worksheet" header. The SQL code entered is:

```
1 v SELECT * FROM instructors
2 WHERE
3   salary IS NULL;
```

The results are displayed in a table:

ID	NAME	SALARY
2	Sham	-

A "Download CSV" button is visible at the bottom.

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8.BETWEEN:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page includes standard browser navigation and a toolbar with "Feedback", "Help", and a user session indicator. Below the toolbar is a "Live SQL" section with a "SQL Worksheet" header. The SQL code entered is:

```
1 v SELECT * FROM instructors
2 WHERE
3   salary BETWEEN 10000 AND 80000;
```

The results are displayed in a table:

ID	NAME	SALARY
1	Ram	70000
3	Venkat	30000

A "Download CSV" button is visible at the bottom. A message at the bottom indicates "2 rows selected."

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9.LIKE:

Screenshot of the SQL Worksheet interface. The URL is livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::. The title bar says "SQL Worksheet". The toolbar includes Back, Forward, Home, Refresh, Search, and other standard browser icons. Below the toolbar, there are links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main area is titled "Live SQL" and "SQL Worksheet". A SQL query is displayed:

```
1 v SELECT * FROM instructors
2 WHERE
3     name LIKE 'R%';
```

The results are shown in a table:

ID	NAME	SALARY
1	Ram	70000

A "Download CSV" button is visible at the bottom.

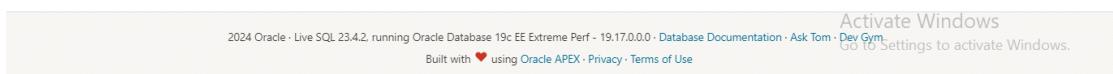
Screenshot of the SQL Worksheet interface. The URL is livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::. The title bar says "SQL Worksheet". The toolbar includes Back, Forward, Home, Refresh, Search, and other standard browser icons. Below the toolbar, there are links to Gmail, YouTube, Outlook, Teams-Mindtree, and a bookmark for "Easy to use Online P...". The main area is titled "Live SQL" and "SQL Worksheet". A SQL query is displayed:

```
1 v SELECT * FROM instructors
2 WHERE
3     name LIKE '__';
```

The results are shown in a table:

ID	NAME	SALARY
1	Ram	70000

A "Download CSV" button is visible at the bottom.



10.IN:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". Below the header is a toolbar with "Live SQL" and "Feedback" buttons, and a user profile "224g1a0593@srit.ac.in". The main area is titled "SQL Worksheet" and contains the following SQL code:

```
1 v_ SELECT * FROM instructors
2 WHERE
3 salary IN(10000,30000,20000);
```

Below the code is a table output:

ID	NAME	SALARY
3	Venkat	30000

A "Download CSV" button is present at the bottom left. A status bar at the bottom right indicates "Activate Windows" and "Built with ❤️ using Oracle APEX - Privacy - Terms of Use".

11.EXISTS:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The URL is "livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::". The page header includes links to Gmail, YouTube, Outlook, Teams-Mindtree, and "Easy to use Online P...". Below the header is a toolbar with "Live SQL" and "Feedback" buttons, and a user profile "224g1a0593@srit.ac.in". The main area is titled "SQL Worksheet" and contains the following SQL code:

```
1 v_ SELECT * FROM instructors
2 WHERE
3 EXISTS(SELECT * FROM departments WHERE instructors.id=departments.id);
```

Below the code is a table output:

ID	NAME	SALARY
1	Ram	70000
2	Sham	-
3	Venkat	30000

A "Download CSV" button is present at the bottom left. A status bar at the bottom right indicates "Activate Windows" and "Built with ❤️ using Oracle APEX - Privacy - Terms of Use".

CONCLUSION:In this lab,we successfully performed sql queries using SPECIAL OPERATIONS.

EXPERIMENT:6(JOIN OPERATIONS)

1.CREATE TABLE student:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main area contains the following SQL code:

```
1 v CREATE TABLE student(
2     roll_no NUMBER PRIMARY KEY,
3     name VARCHAR2(50) NOT NULL,
4     dept_name VARCHAR2(10) NOT NULL
5 );
6
```

Below the code, the message "Table created." is displayed. At the bottom of the page, there is a promotional banner for Windows activation.

2.CREATE TABLE block:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main area contains the following SQL code:

```
1 v CREATE TABLE blocks(
2     dept_name VARCHAR2(10) PRIMARY KEY,
3     block_name VARCHAR2(20) NOT NULL
4 );
```

Below the code, the message "Table created." is displayed. At the bottom of the page, there is a promotional banner for Windows activation.

3.INSERT ALL VALUES:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main area contains the following SQL code:

```
1 v INSERT ALL
2   INTO student VALUES (505,'Aravind','CSE')
3   INTO student VALUES (411,'Rani ','EEE')
4   INTO student VALUES (310,'Raju ','ECE')
5   INTO student VALUES (509,'Baba ','CSM')
6   INTO blocks VALUES ('CSE','C-BLOCK')
7   INTO blocks VALUES ('CSM','B-BLOCK')
8   INTO blocks VALUES ('EEE','A-BLOCK')
9   SELECT * FROM dual;
```

Below the code, the message "7 row(s) inserted." is displayed. At the bottom right, there is an "Activate Windows" watermark.

4.SELECT:

The screenshot shows a browser window titled "SQL Worksheet" on the "livesql.oracle.com" website. The main area contains the following SQL code:

```
1 SELECT * FROM student;
```

Below the code, a table is displayed with the following data:

ROLL_NO	NAME	DEPT_NAME
505	Aravind	CSE
411	Rani	EEE
310	Raju	ECE
509	Baba	CSM

At the bottom left, there is a "Download CSV" button. At the bottom right, there is an "Activate Windows" watermark.

```
1 SELECT * FROM blocks;
```

DEPT_NAME	BOLCK_NAME
CSE	C-BLOCK
CSM	B-BLOCK
EEE	A-BLOCK

Download CSV

3 rows selected.

Activate Windows

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7.JOIN:

```
1 SELECT * FROM student
2   JOIN blocks ON
3     student.dept_name=blocks.dept_name;
```

ROLL_NO	NAME	DEPT_NAME	DEPT_NAME	BOLCK_NAME
505	Aravind	CSE	CSE	C-BLOCK
411	Rani	EEE	EEE	A-BLOCK
509	Baba	CSM	CSM	B-BLOCK

Download CSV

3 rows selected.

Activate Windows

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```
1 SELECT * FROM student JOIN blocks
2      USING(dept_name);
```

DEPT_NAME	ROLL_NO	NAME	BLOCK_NAME
CSE	505	Aravind	C-BLOCK
EEE	411	Rani	A-BLOCK
CSM	509	Baba	B-BLOCK

Download CSV

3 rows selected.

Activate Windows

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8.LEFT OUTER JOIN:

```
1 SELECT * FROM student
2    LEFT OUTER JOIN blocks ON
3        student.dept_name=blocks.dept_name;
```

ROLL_NO	NAME	DEPT_NAME	DEPT_NAME	BLOCK_NAME
505	Aravind	CSE	CSE	C-BLOCK
411	Rani	EEE	EEE	A-BLOCK
310	Raju	ECE	-	-
509	Baba	CSM	CSM	B-BLOCK

Download CSV

4 rows selected.

Activate Windows

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9.RIGHT

OUTER JOIN:

```
1 v SELECT * FROM student
2   RIGHT OUTER JOIN blocks ON
3     student.dept_name=blocks.dept_name;
```

ROLL_NO	NAME	DEPT_NAME	DEPT_NAME	BOLCK_NAME
505	Aravind	CSE	CSE	C-BLOCK
411	Rani	EEE	EEE	A-BLOCK
509	Baba	CSM	CSM	B-BLOCK

Download CSV

3 rows selected.

Activate Windows

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10.FULL OUTER JOIN:

```
1 v SELECT * FROM student
2   FULL OUTER JOIN blocks
3     ON student.dept_name=blocks.dept_name;
```

ROLL_NO	NAME	DEPT_NAME	DEPT_NAME	BOLCK_NAME
505	Aravind	CSE	CSE	C-BLOCK
411	Rani	EEE	EEE	A-BLOCK
310	Raju	ECE	-	-
509	Baba	CSM	CSM	B-BLOCK

Download CSV

4 rows selected.

Activate Windows

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CONCLUSION:In this lab,we successfully performed sql queries using JOIN OPERATION.

SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:107496285731100::RP::

Gmail YouTube Outlook Teams-Mindtree Easy to use Online P...

All Bookmarks

Live SQL

Feedback Help 224g1a0593@srit.ac.in

SQL Worksheet

Clear Find Actions Save Run

```
1 v CREATE TABLE instructors(
2   id NUMBER PRIMARY KEY,
3   name VARCHAR2(50) NOT NULL,
4   salary NUMBER
5 );
```

Table created.

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