Hooghly Engineering & Technology College

Computer Science & Engineering Department

Name: **MONISH KUMAR BAIRAGI** Class Roll: **37** Academic Year: **2020-21**

Subject: **DBMS Lab** Subject Code: **PCC-CS691** Semester: **6th**

Serial No	Title/Description	Date of Laboratory	Date of Submission	Signature of Faculty
1	1. Environment setup and basic queries.	20.04.2021	20.04.2021	
2	1. Create the described tables (Department & Employee) with said constraints like Primary Key, Foreign Key etc. 2. Insert data. 3. Show few select queries of your choice with different 'where' conditions. 4. Apply AND, OR.	01.05.2021	01.05.2021	
3	1. Execute 24 different queries.	06.05.2021	06.05.2021	
4	1. Create the following schema. a. Dept (DID, DName) b. Student (SID, SName, DID, Marks) c. ExtraCurricularDetail (EID, EName) d. ExtraCurricularParticipation (SID, EID) 2. Insert suitable data. 3. Write one query to join the Dept and Student tables. 4. Write one query to join the Student, ExtraCurricularDetail and ExtraCurricularParticipation tables. 5. Write one query to join all the four tables.	13.05.2021	13.05.2021	
5	1. Show Left, Right and Full Outer Join with suitable example.	22.05.2021	22.05.2021	
6	1. Execute 12 different queries.	15.06.2021	15.06.2021	
7	Write necessary Pl/SQL code for the following problems 1) Display your name and Mobile number 2) Calculate the average of three numbers and classify the average into three classes 'A', 'B', and 'C; respectively, use your own assumption. 3) Find whether a given number is ODD or Even	20.06.2021	20.06.2021	

	4) Display ur name for 'n' times using for and while loop. 5) Print the first 'n' natural number in descending order. use your own assumption. 6) Find the factorial of 'n' number			
8	1) Write a PL/SQL code to calculate the sum of first 'n' odd numbers 2) Write a PL/SQL code to display the salary of an employee based on his/her employeeID 3) Write a PL/SQL code to display the name of the employee, Department number of the employee, Job of the employee as well as salary based on employeeID [Hints use %rowtype]	28.06.2021	28.06.2021	
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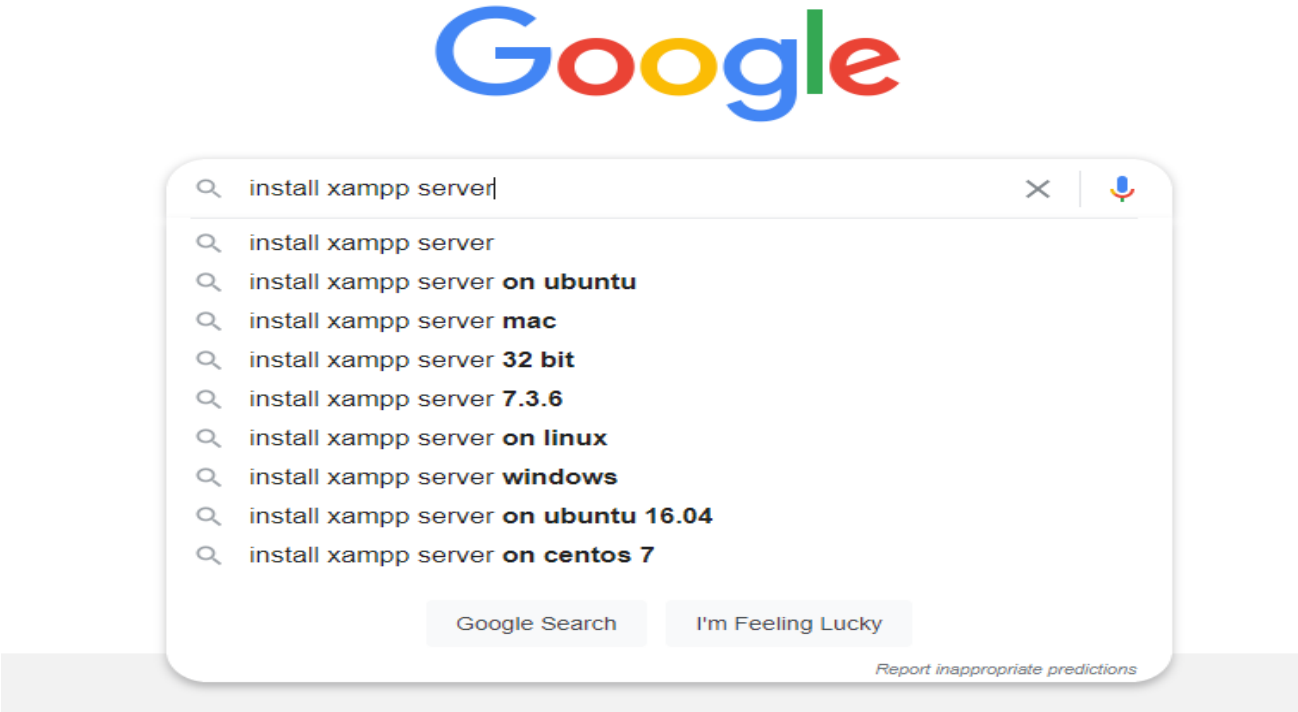
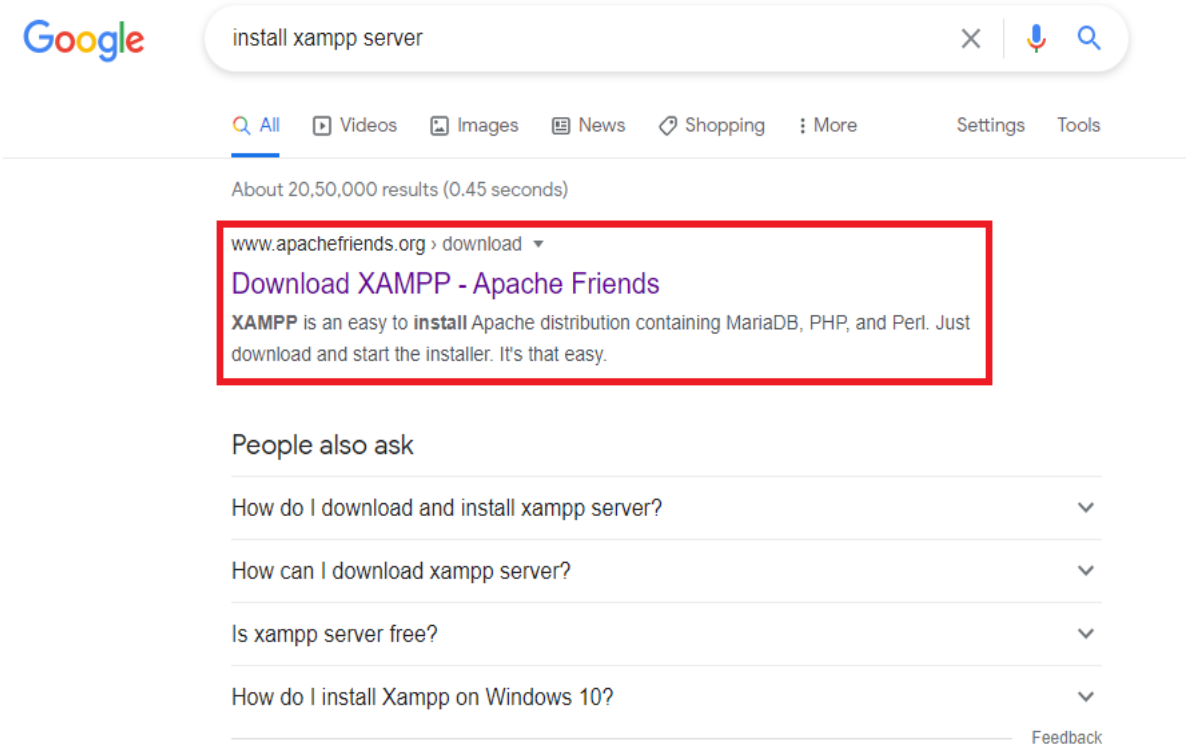
- **Title:** Environment setup and basic queries.
- **Download and Installation Procedure: -**

1. Go to Google.com and search for “install xampp Server”.



2. Then click the first link of the webpage.



3. Now download the latest version of xampp for your operating system.

Download

XAMPP is an easy to install Apache distribution containing MariaDB, PHP, and Perl. Just download and start the installer. It's that easy.

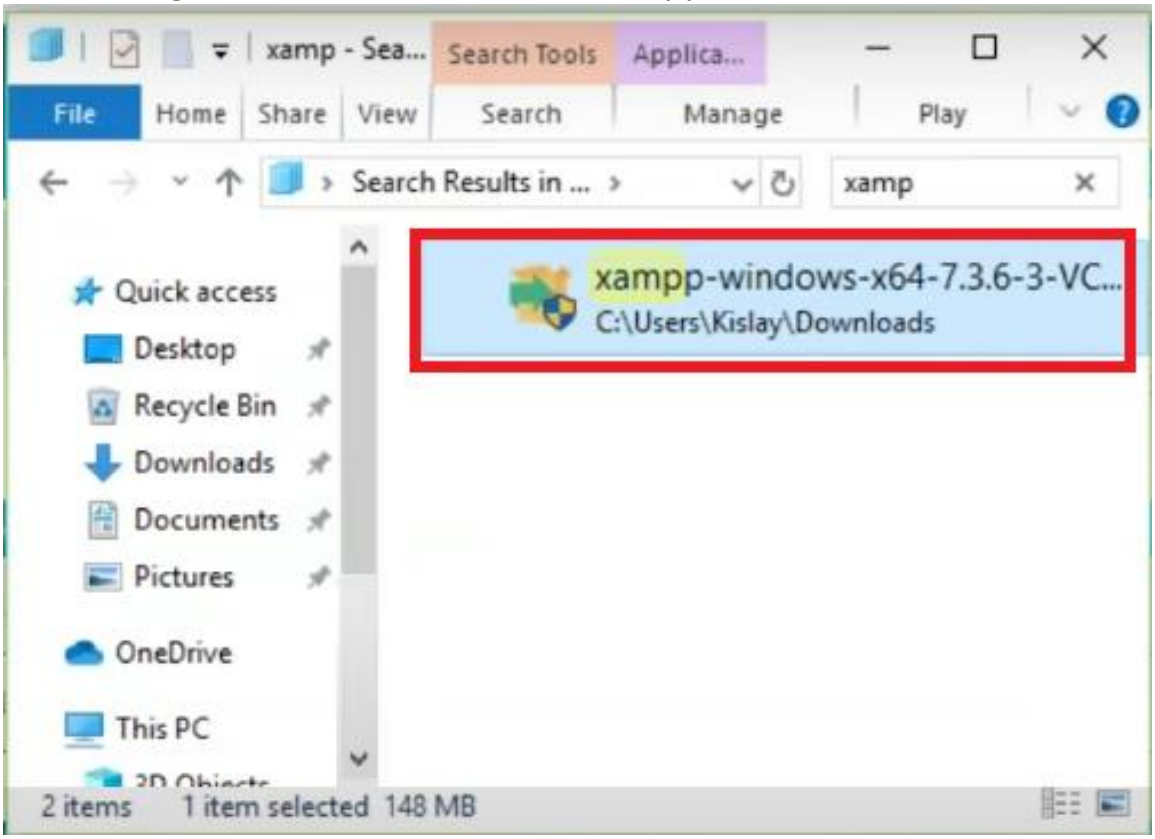
XAMPP for **Windows** 7.3.27, 7.4.16 & 8.0.3

Version		Checksum			Size
7.3.27 / PHP 7.3.27	What's Included?	md5	sha1	Download (64 bit)	154 Mb
7.4.16 / PHP 7.4.16	What's Included?	md5	sha1	Download (64 bit)	156 Mb
8.0.3 / PHP 8.0.3	What's Included?	md5	sha1	Download (64 bit)	156 Mb

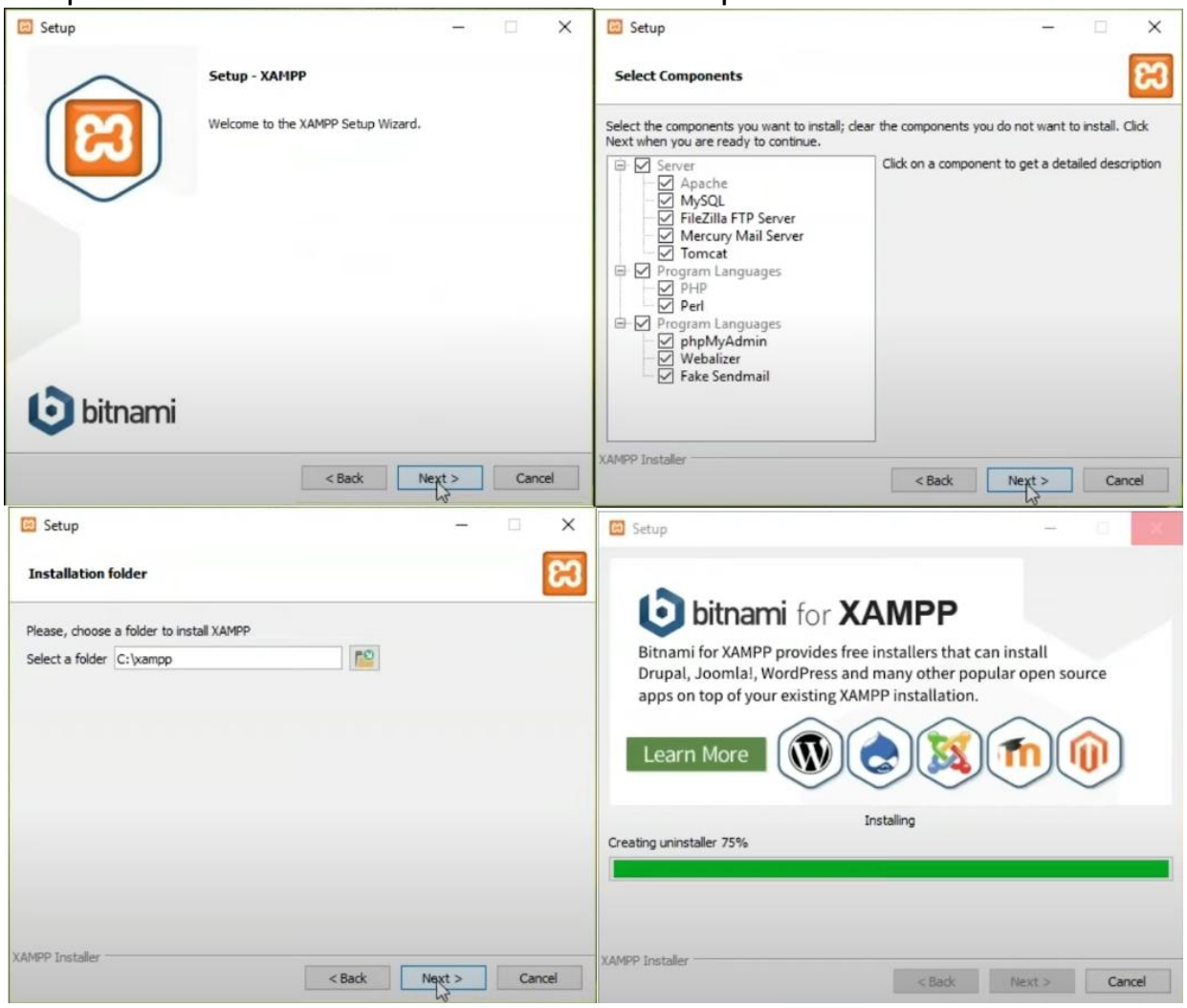
Requirements Add-ons More Downloads »

Windows XP or 2003 are not supported. You can download a compatible version of XAMPP for these platforms here.

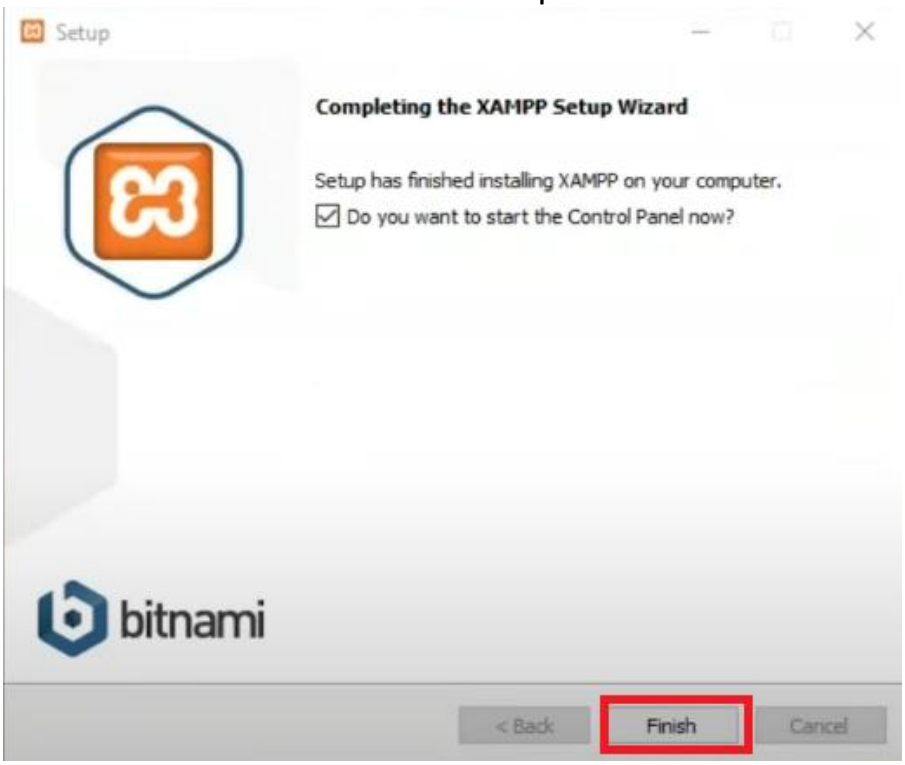
4. After downloading double click and run the xampp installation file.



5. Now keep click “Next” button until the installation process ends.

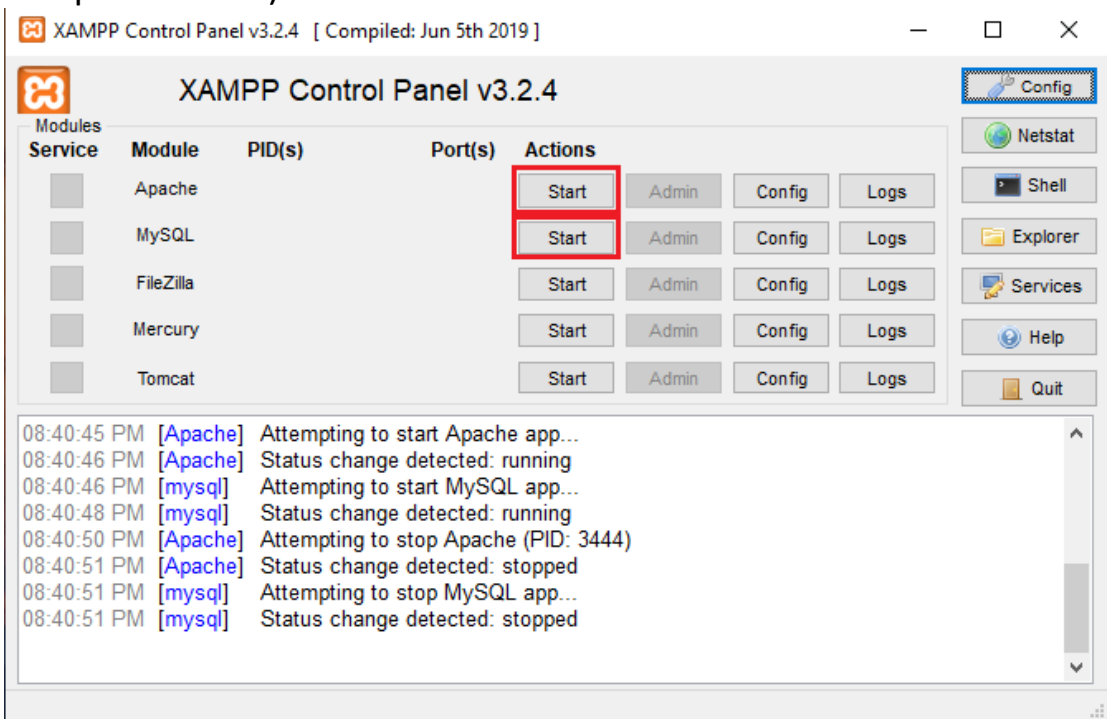


6. At last click “Finish” button to finish installation procedure.

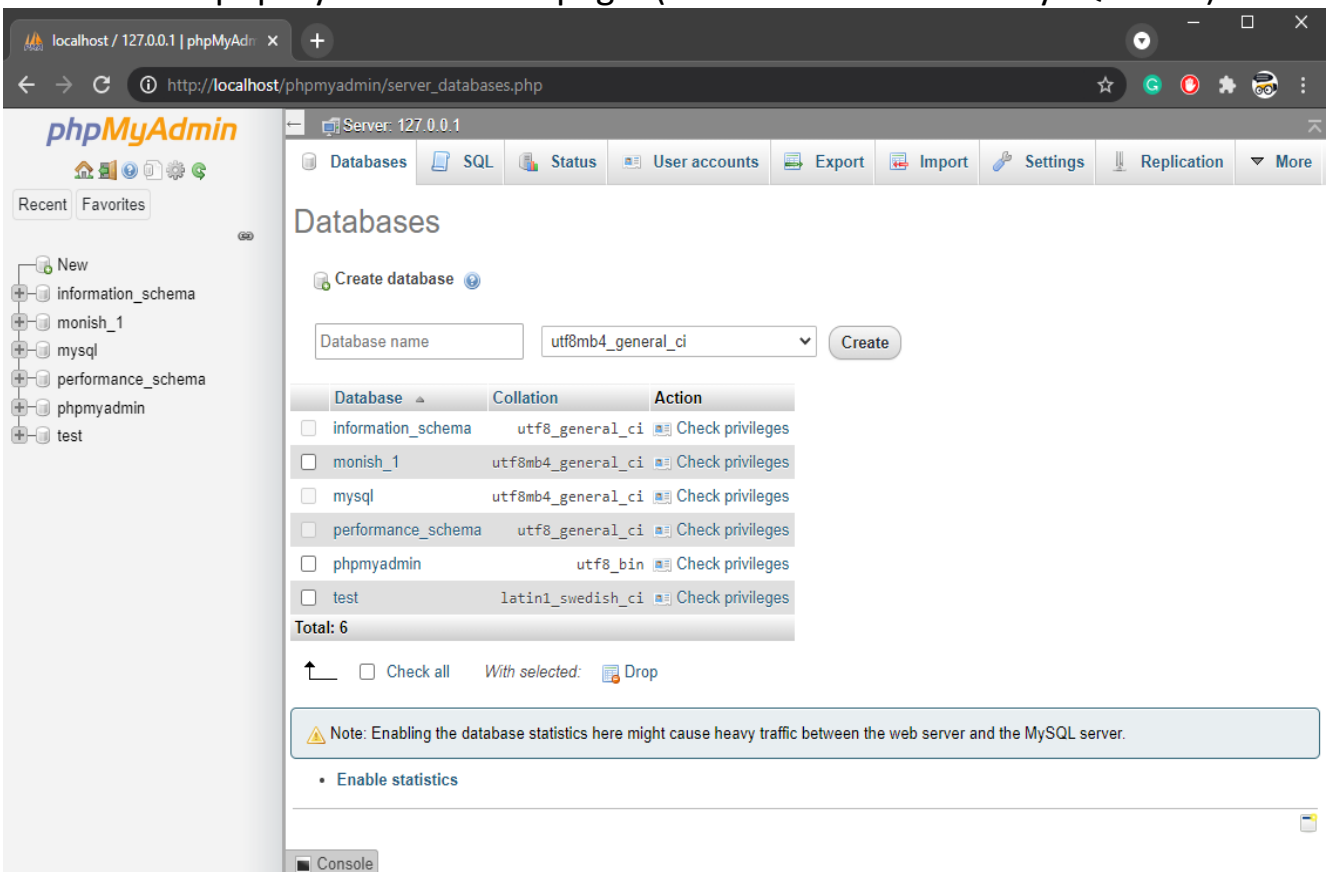


❖ Start MySQL Server on Web Browser: -

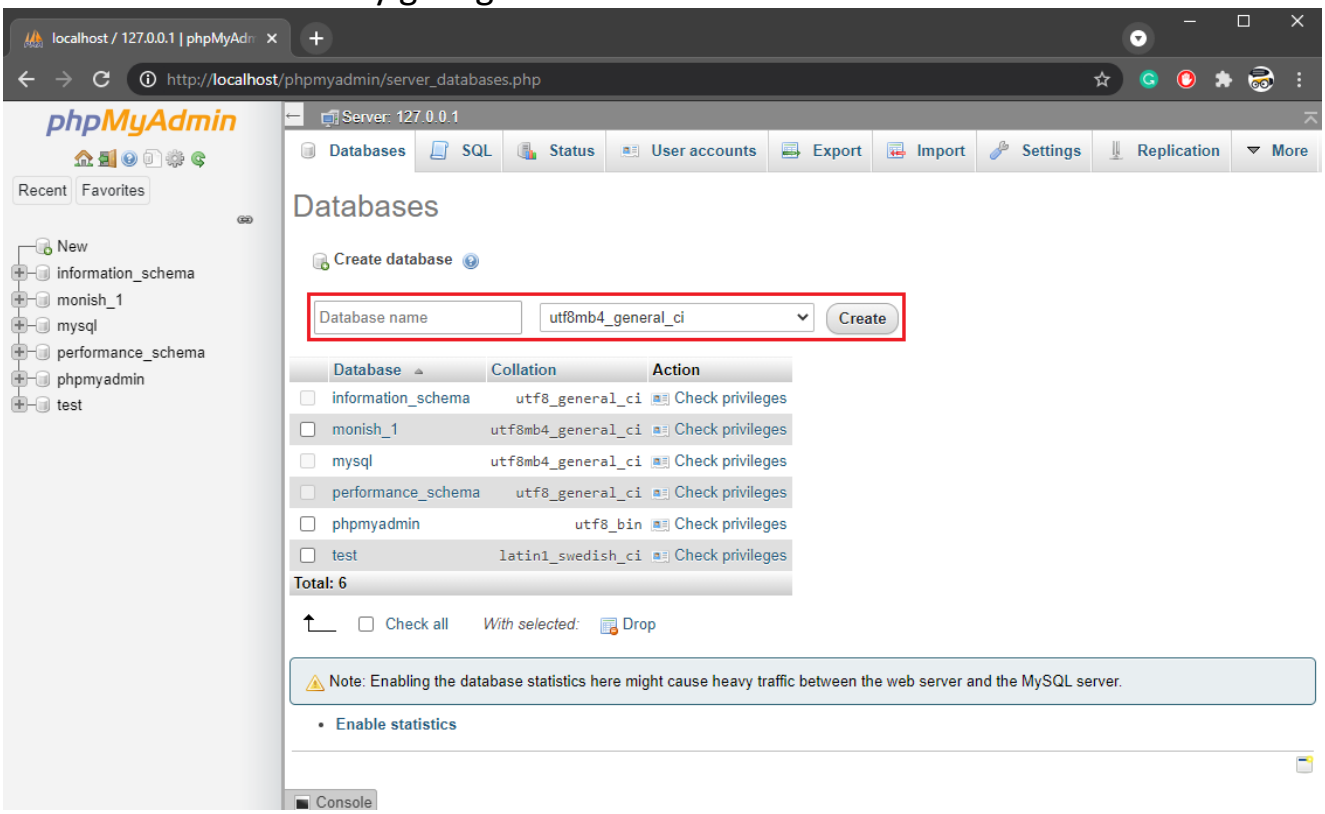
1. Launch Xampp and to run MySQL Server on your browser you have to start “Apache” and “MySQL” module in the “Xampp control panel”. (Note: for the first time allow all the required permissions)



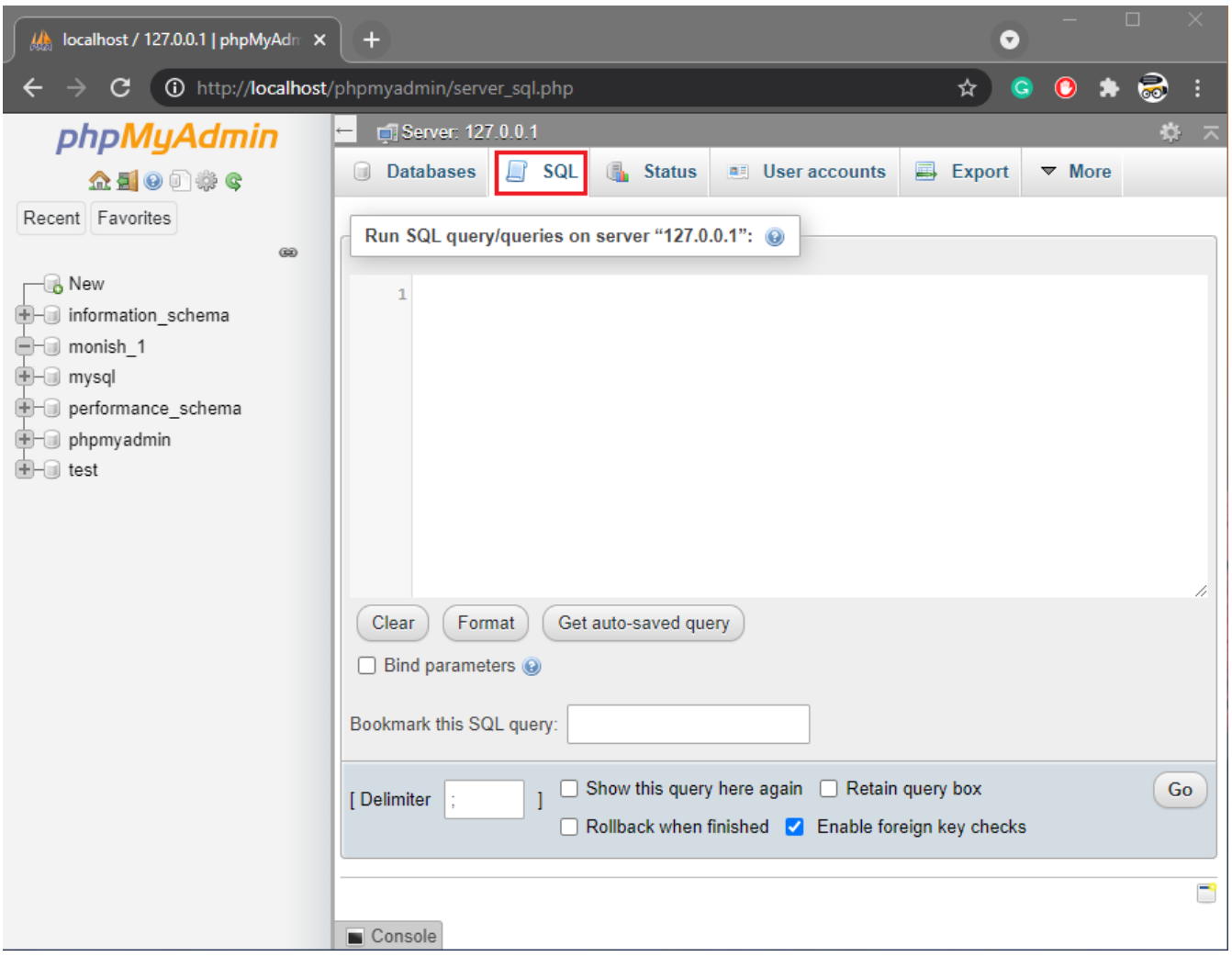
2. Now open a web browser and search for http://localhost/phpmyadmin and it will redirect to the phpMyAdmin server page. (here we will run our MySQL code)



3. Now create a database by giving a database name.



4. Now click to your database name and then select SQL section in the top. Here we will write our SQL Code.



❖ Running Basic Queries:-

1. Create Table:-

```
CREATE TABLE Student (Roll int(2),Name varchar(20));
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.2975 seconds.)

```
CREATE TABLE Student (Roll int(2),Name varchar(20))
```

[Edit inline] [Edit] [Create PHP code]

2. Insert Into Table:-

```
INSERT INTO `student` VALUES(36,'Mritunjay');
INSERT INTO `student` VALUES(37,'Monish');
INSERT INTO `student` VALUES(38,'Mohibul');
```

1 row inserted. (Query took 0.0580 seconds.)

```
insert into `student` VALUES(36,'Mritunjay')
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0906 seconds.)

```
insert into `student` VALUES(37,'Monish')
```

[Edit inline] [Edit] [Create PHP code]

1 row inserted. (Query took 0.0288 seconds.)

```
insert into `student` VALUES(38,'Mohibul')
```

[Edit inline] [Edit] [Create PHP code]

3. Select All From Table:-

```
SELECT * FROM student;
```

Showing rows 0 - 2 (3 total, Query took 0.0013 seconds.)

```
SELECT * FROM student
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

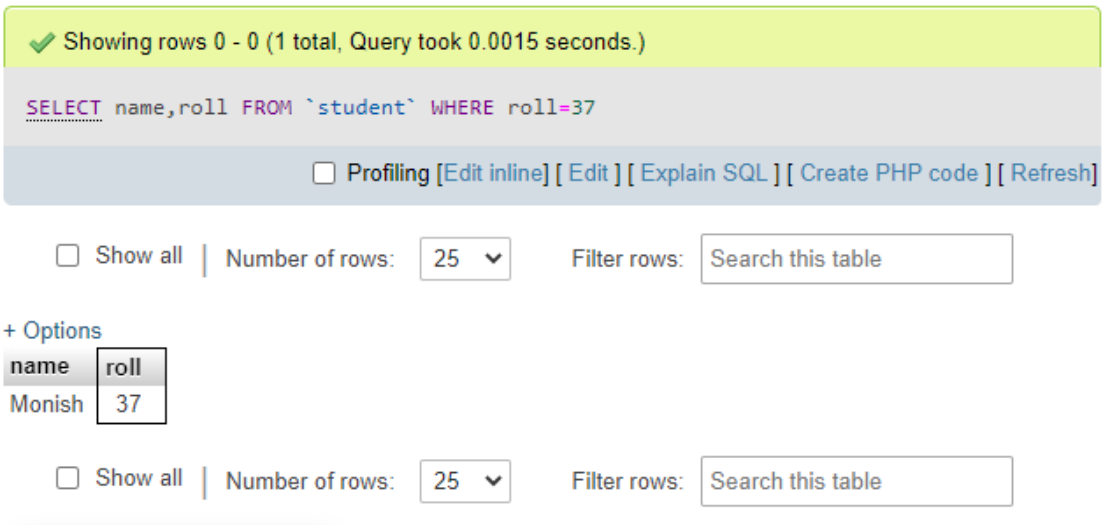
+ Options

Roll	Name
36	Mritunjay
37	Monish
38	Mohibul

Show all | Number of rows: 25 Filter rows: Search this table

4. **Select From Table With Condition:**

```
SELECT name,roll FROM `student` WHERE roll=37;
```



~ : DAY - 02 : ~

❖ Question:-

1. Create the described tables (Department & Employee) with said constraints like Primary Key, Foreign Key etc.
2. Insert data.
3. Show few select queries of your choice with different 'where' conditions.
4. Apply AND, OR.

❖ Code: -

```sql
-- Creating DEPT table
CREATE TABLE DEPT (
  DEPTNO INT(3) NOT NULL,
  DNAME VARCHAR(12) NOT NULL,
  LOC VARCHAR(15) NOT NULL,
  PRIMARY KEY(DEPTNO)
);

-- Creating EMP table
CREATE TABLE EMP (
  EMPNO INT(4) NOT NULL,
  ENAME VARCHAR(10) NOT NULL,
  JOB VARCHAR(10) NOT NULL,
  MGR INT(4) NOT NULL,
  HIREDATE DATE NOT NULL,
  SAL DOUBLE(7,1) NOT NULL,
  COMM DOUBLE(6,1),
  DEPTNO INT(3) NOT NULL,
  PRIMARY KEY(EMPNO),
  FOREIGN KEY (DEPTNO) REFERENCES DEPT (DEPTNO)
);

-- Inserting data to the DEPT table
INSERT INTO DEPT VALUES(10,'Accounting','New Delhi');
INSERT INTO DEPT VALUES(20,'Research','Dhanbad');
INSERT INTO DEPT VALUES(30,'Sales','Pune');
INSERT INTO DEPT VALUES(40,'Operations','Boroda');

-- Inserting data to the EMP table
INSERT INTO EMP VALUES(7369,'Smith','Clerk',7902,'17/12/18',8000,NULL,20);
INSERT INTO EMP VALUES(7499,'Allen','Salesman',7698,'20/02/19',16000,300,30);
INSERT INTO EMP VALUES(7521,'Ward','Salesman',7698,'22/02/19',12500,500,30);
INSERT INTO EMP VALUES(7566,'Jones','Manager',7839,'02/04/19',29750,NULL,20);
INSERT INTO EMP VALUES(7654,'Martin','Salesman',7698,'28/09/19',12500,1400,30);
INSERT INTO EMP VALUES(7698,'Blake','Manager',7839,'01/05/19',28500,NULL,30);

-- Selecting Data
SELECT * FROM EMP WHERE 1;
SELECT EMPNO,ENAME,JOB,SAL FROM EMP WHERE EMPNO=7566;
SELECT EMPNO,ENAME,JOB,SAL FROM EMP WHERE JOB='Manager';
SELECT * FROM EMP WHERE SAL>=9000 AND SAL<=29000;
SELECT * FROM EMP WHERE JOB='Manager' OR JOB='Clerk';
```

❖ Output: -

Showing rows 0 - 5 (6 total, Query took 0.0012 seconds.)

```
SELECT * FROM EMP WHERE 1
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

+ Options

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Edit Copy Delete	7369	Smith	Clerk	7902	2017-12-18	8000.0	NULL	20
Edit Copy Delete	7499	Allen	Salesman	7698	2020-02-19	16000.0	300.0	30
Edit Copy Delete	7521	Ward	Salesman	7698	2022-02-19	12500.0	500.0	30
Edit Copy Delete	7566	Jones	Manager	7839	2002-04-19	29750.0	NULL	20
Edit Copy Delete	7654	Martin	Salesman	7698	2028-09-19	12500.0	1400.0	30
Edit Copy Delete	7698	Blake	Manager	7839	2001-05-19	28500.0	NULL	30

Check all With selected: Edit Copy Delete Export

Showing rows 0 - 0 (1 total, Query took 0.0016 seconds.)

```
-- Selecting Data SELECT EMPNO,ENAME,JOB,SAL FROM EMP WHERE EMPNO=7566
```

[Edit inline] [Edit] [Create PHP code]

+ Options

	EMPNO	ENAME	JOB	SAL
Edit Copy Delete	7566	Jones	Manager	29750.0

Check all With selected: Edit Copy Delete Export

Showing rows 0 - 1 (2 total, Query took 0.0015 seconds.)

```
SELECT EMPNO,ENAME,JOB,SAL FROM EMP WHERE JOB='Manager'
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

+ Options

	EMPNO	ENAME	JOB	SAL
Edit Copy Delete	7566	Jones	Manager	29750.0
Edit Copy Delete	7698	Blake	Manager	28500.0

Check all With selected: Edit Copy Delete Export

Showing rows 0 - 3 (4 total, Query took 0.0013 seconds.)

```
SELECT * FROM EMP WHERE SAL>=9000 AND SAL<=29000
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

+ Options

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Edit Copy Delete	7499	Allen	Salesman	7698	2020-02-19	16000.0	300.0	30
Edit Copy Delete	7521	Ward	Salesman	7698	2022-02-19	12500.0	500.0	30
Edit Copy Delete	7654	Martin	Salesman	7698	2028-09-19	12500.0	1400.0	30
Edit Copy Delete	7698	Blake	Manager	7839	2001-05-19	28500.0	NULL	30

Check all With selected: Edit Copy Delete Export

Showing rows 0 - 2 (3 total, Query took 0.0012 seconds.)

```
SELECT * FROM EMP WHERE JOB='Manager' OR JOB='Clerk'
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

+ Options

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Edit Copy Delete	7369	Smith	Clerk	7902	2017-12-18	8000.0	NULL	20
Edit Copy Delete	7566	Jones	Manager	7839	2002-04-19	29750.0	NULL	20
Edit Copy Delete	7698	Blake	Manager	7839	2001-05-19	28500.0	NULL	30

Check all With selected: Edit Copy Delete Export

~ : DAY - 03 : ~

❖ Question:-

1. Execute 24 different queries.

❖ Code:-

```
-- Creating DEPT table
CREATE TABLE DEPT (
  DEPTNO INT(3) NOT NULL,
  DNAME VARCHAR(12) NOT NULL,
  LOC VARCHAR(15) NOT NULL,
  PRIMARY KEY(DEPTNO)
);

-- Creating EMP table
CREATE TABLE EMP (
  EMPNO INT(4) NOT NULL,
  ENAME VARCHAR(10) NOT NULL,
  JOB VARCHAR(10) NOT NULL,
  MGR INT(4) NOT NULL,
  HIREDATE DATE NOT NULL,
  SAL DOUBLE(7,1) NOT NULL,
  COMM DOUBLE(6,1),
  DEPTNO INT(3) NOT NULL,
  PRIMARY KEY(EMPNO),
  FOREIGN KEY (DEPTNO) REFERENCES DEPT (DEPTNO)
);

-- Inserting data to the DEPT table
INSERT INTO DEPT VALUES(10,'Accounting','New Delhi');
INSERT INTO DEPT VALUES(20,'Research','Dhanbad');
INSERT INTO DEPT VALUES(30,'Sales','Pune');
INSERT INTO DEPT VALUES(40,'Operations','Boroda');

-- Inserting data to the EMP table
INSERT INTO EMP VALUES(7369,'Smith','Clerk',7902,'18/12/17',8000,NULL,20);
INSERT INTO EMP VALUES(7499,'Allen','Salesman',7698,'19/02/20',16000,300,30);
INSERT INTO EMP VALUES(7521,'Ward','Salesman',7698,'19/02/22',12500,500,30);
INSERT INTO EMP VALUES(7566,'Jones','Manager',7839,'19/04/02',29750,NULL,20);
INSERT INTO EMP VALUES(7654,'Martin','Salesman',7698,'19/09/28',12500,1400,30);
INSERT INTO EMP VALUES(7698,'Blake','Manager',7839,'19/05/01',28500,NULL,30);
INSERT INTO EMP VALUES(7782,'Clark','Manager',7839,'19/06/09',24500,250,10);
INSERT INTO EMP VALUES(7788,'Scott','Analyst',7566,'19/12/09',30000,NULL,20);
INSERT INTO EMP VALUES(7839,'King','President',7802,'18/09/08',50000,NULL,10);
INSERT INTO EMP VALUES(7844,'Turner','Salesman',7698,'18/09/08',15000,0,30);
INSERT INTO EMP VALUES(7876,'Adams','Clark',7788,'17/01/12',11000,150,20);
INSERT INTO EMP VALUES(7900,'James','Clark',7698,'18/12/03',9500,NULL,30);
INSERT INTO EMP VALUES(7902,'Ford','Analyst',7566,'18/12/04',30000,300,20);
INSERT INTO EMP VALUES(7934,'Miller','Clark',7782,'19/01/23',13000,NULL,10);

-- 1. List names of those employees whose job is analysts or salesmen.
SELECT ENAME FROM EMP WHERE JOB='Analyst' OR JOB='Salesman';

-- 2. List details of those employees whose joined date is before 30 March 19
SELECT * FROM EMP WHERE HIREDATE<'2019-03-30';

-- 3. List names of those employees whose designation are not Managers.
SELECT ENAME FROM EMP WHERE JOB<>'Manager';

-- 4. List the names of employees whose employee numbers are 7839, 7934, 7788 7369.
```

```sql
SELECT ENAME FROM EMP WHERE EMPNO=7839 OR EMPNO=7934 OR EMPNO=7788 OR EMPNO=7369;

-- 5. List employees not belonging to department 30, 40, or 20.
SELECT * FROM EMP WHERE DEPTNO NOT IN (30,40,20);

-- 6. List employee details who have joined between ‘31’ Jan and ‘31’ Dec. ‘19’.
SELECT * FROM EMP WHERE HIREDATE BETWEEN '2019-01-31' AND '2019-12-31';

-- 7. List the different designation that exists in the company.
SELECT DISTINCT JOB FROM EMP;

-- 8. List the names of employees who are not eligible for commission.
SELECT ENAME FROM EMP WHERE COMM IS NULL;

-- 9. List the name and designation of the employee who’s Name begins with S.
SELECT ENAME, JOB FROM EMP WHERE ENAME LIKE 'S%';

-- 10. List the employees not assigned to any department.
SELECT * FROM EMP WHERE DEPTNO NOT IN (SELECT DEPTNO FROM DEPT);

-- 11. List the employees who are eligible for commission.
SELECT ENAME FROM EMP WHERE COMM IS NOT NULL;

-- 12. List employee’s whose names either start or end with “S”.
SELECT ENAME FROM EMP WHERE ENAME LIKE 'S%' OR ENAME LIKE '%s';

-- 13. List names of employees whose names have “i” as the second character.
SELECT ENAME FROM EMP WHERE ENAME LIKE '_i%';

-- 14. List the number of employees working with the company.
SELECT COUNT(ENAME) FROM EMP;

-- 15. Display the total salaries paid to the employees.
SELECT SUM(SAL) FROM EMP;

-- 16. Display the maximum, minimum and average salary in the company.
SELECT MAX(SAL), MIN(SAL), AVG(SAL) FROM EMP;

-- 17. List the maximum salary paid to a salesman.
SELECT MAX(SAL) FROM EMP WHERE JOB='salesman';

-- 18. Add one more column to the DEPT Table (Country varchar2 (15));
ALTER TABLE DEPT ADD COUNTRY VARCHAR(15);

-- 19. Set the name of the country as ‘USA’ for those whose DEPTNO=10
UPDATE DEPT SET COUNTRY='USA' WHERE DEPTNO=10;

-- 20. Set the name of the country as ‘INDIA’ where DEPTNO >10
UPDATE DEPT SET COUNTRY='INDIA' WHERE DEPTNO>10;

-- 21. Set the column size of salary as (8, 2) in EMP Table.
ALTER TABLE EMP MODIFY SAL DOUBLE(8,2);

-- 22. Set the column size of DNAME as varchar2 (20) in DEPT Table.
ALTER TABLE DEPT MODIFY DNAME VARCHAR(20);

-- 23. Drop the Column Country from DEPT Table.
ALTER TABLE DEPT DROP COUNTRY;

-- 24. Update all salary of the employees by 10% in EMP Table.
UPDATE EMP SET SAL=SAL+SAL*0.1;
```

❖ Output:-

Showing rows 0 - 5 (6 total, Query took 0.0021 seconds.)

```
-- 1. List names of those employees whose job is analysts or salesmen. SELECT ENAME FROM EMP WHERE JOB='Analyst' OR JOB='Salesman'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	ENAME
Edit Copy Delete	Allen
Edit Copy Delete	Ward
Edit Copy Delete	Martin
Edit Copy Delete	Scott
Edit Copy Delete	Turner
Edit Copy Delete	Ford

Showing rows 0 - 8 (9 total, Query took 0.0010 seconds.)

```
-- 2. List details of those employees whose joined date is before 30 March 19 SELECT * FROM EMP WHERE HIREDATE<'2019-03-30'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Edit Copy Delete	7369	Smith	Clerk	7902	2018-12-17	8000.0	NULL	20
Edit Copy Delete	7499	Allen	Salesman	7698	2019-02-20	16000.0	300.0	30
Edit Copy Delete	7521	Ward	Salesman	7698	2019-02-22	12500.0	500.0	30
Edit Copy Delete	7839	King	President	7802	2018-09-08	50000.0	NULL	10
Edit Copy Delete	7844	Turner	Salesman	7698	2018-09-08	15000.0	0.0	30
Edit Copy Delete	7876	Adams	Clark	7788	2017-01-12	11000.0	150.0	20
Edit Copy Delete	7900	James	Clark	7698	2018-12-03	9500.0	NULL	30
Edit Copy Delete	7902	Ford	Analyst	7566	2018-12-04	30000.0	300.0	20
Edit Copy Delete	7934	Miller	Clark	7782	2019-01-23	13000.0	NULL	10

Showing rows 0 - 10 (11 total, Query took 0.0012 seconds.)

```
-- 3. List names of those employees whose designation are not Managers. SELECT ENAME FROM EMP WHERE JOB<>'Manager'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	ENAME
Edit Copy Delete	Smith
Edit Copy Delete	Allen
Edit Copy Delete	Ward
Edit Copy Delete	Martin
Edit Copy Delete	Scott
Edit Copy Delete	King
Edit Copy Delete	Turner
Edit Copy Delete	Adams
Edit Copy Delete	James
Edit Copy Delete	Ford
Edit Copy Delete	Miller

Showing rows 0 - 3 (4 total, Query took 0.0014 seconds.)

```
-- 4. List the names of employees whose employee numbers are 7839, 7934, 7788 7369. SELECT ENAME FROM EMP WHERE EMPNO=7839 OR EMPNO=7934 OR EMPNO=7788 OR EMPNO=7369
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	ENAME
Edit Copy Delete	Smith
Edit Copy Delete	Scott
Edit Copy Delete	King
Edit Copy Delete	Miller

Showing rows 0 - 2 (3 total, Query took 0.0011 seconds.)

```
-- 5. List employees not belonging to department 30, 40, or 20. SELECT * FROM EMP WHERE DEPTNO NOT IN (30,40,20)
```

[Edit inline] [Edit] [Create PHP code]

+ Options

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Edit Copy Delete	7782	Clark	Manager	7839	2019-06-09	24500.0	250.0	10
Edit Copy Delete	7839	King	President	7802	2018-09-08	50000.0	NULL	10
Edit Copy Delete	7934	Miller	Clark	7782	2019-01-23	13000.0	NULL	10

Showing rows 0 - 6 (7 total, Query took 0.0014 seconds.)

```
-- 6. List employee details who have joined between '31' Jan and '31' Dec. '19'. SELECT * FROM EMP WHERE HIREDATE BETWEEN '2019-01-31' AND '2019-12-31'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
Edit Copy Delete	7499	Allen	Salesman	7698	2019-02-20	16000.0	300.0	30
Edit Copy Delete	7521	Ward	Salesman	7698	2019-02-22	12500.0	500.0	30
Edit Copy Delete	7566	Jones	Manager	7839	2019-04-02	29750.0	NULL	20
Edit Copy Delete	7654	Martin	Salesman	7698	2019-09-28	12500.0	1400.0	30
Edit Copy Delete	7698	Blake	Manager	7839	2019-05-01	28500.0	NULL	30
Edit Copy Delete	7782	Clark	Manager	7839	2019-06-09	24500.0	250.0	10
Edit Copy Delete	7788	Scott	Analyst	7566	2019-12-09	30000.0	NULL	20

Showing rows 0 - 5 (6 total, Query took 0.0008 seconds.)

```
-- 7. List the different designation that exists in the company. SELECT DISTINCT JOB FROM EMP
```

[Edit inline] [Edit] [Create PHP code]

+ Options

	JOB
Edit Copy Delete	Clerk
Edit Copy Delete	Salesman
Edit Copy Delete	Manager
Edit Copy Delete	Analyst
Edit Copy Delete	President
Edit Copy Delete	Clark

Showing rows 0 - 6 (7 total, Query took 0.0011 seconds.)

```
-- 8. List the names of employees who are not eligible for commission. SELECT ENAME FROM EMP WHERE COMM IS NULL
```

[Edit inline] [Edit] [Create PHP code]

+ Options

	ENAME
Edit Copy Delete	Smith
Edit Copy Delete	Jones
Edit Copy Delete	Blake
Edit Copy Delete	Scott
Edit Copy Delete	King
Edit Copy Delete	James
Edit Copy Delete	Miller

Showing rows 0 - 1 (2 total, Query took 0.0012 seconds.)

```
-- 9. List the name and designation of the employee who's Name begins with S. SELECT ENAME, JOB FROM EMP WHERE ENAME LIKE 'S%'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

	ENAME	JOB
Edit Copy Delete	Smith	Clerk
Edit Copy Delete	Scott	Analyst

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0018 seconds.)

```
-- 10. List the employees not assigned to any department. SELECT * FROM EMP WHERE DEPTNO NOT IN (SELECT DEPTNO FROM DEPT)
```

[Edit inline] [Edit] [Create PHP code]

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO

Showing rows 0 - 6 (7 total, Query took 0.0011 seconds.)

```
-- 11. List the employees who are eligible for commission. SELECT ENAME FROM EMP WHERE COMM IS NOT NULL
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	ENAME
Edit Copy Delete	Allen
Edit Copy Delete	Ward
Edit Copy Delete	Martin
Edit Copy Delete	Clark
Edit Copy Delete	Turner
Edit Copy Delete	Adams
Edit Copy Delete	Ford

Showing rows 0 - 4 (5 total, Query took 0.0018 seconds.)

```
-- 12. List employee's whose names either start or end with "S". SELECT ENAME FROM EMP WHERE ENAME LIKE 'S%' OR ENAME LIKE '%s'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	ENAME
Edit Copy Delete	Smith
Edit Copy Delete	Jones
Edit Copy Delete	Scott
Edit Copy Delete	Adams
Edit Copy Delete	James

Showing rows 0 - 1 (2 total, Query took 0.0011 seconds.)

```
-- 13. List names of employees whose names have "i" as the second character. SELECT ENAME FROM EMP WHERE ENAME LIKE '_i%'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

←T→	ENAME
Edit Copy Delete	King
Edit Copy Delete	Miller

Your SQL query has been executed successfully.

```
-- 14. List the number of employees working with the company. SELECT COUNT(ENAME) FROM EMP
```

[Edit inline] [Edit] [Create PHP code]

+ Options

COUNT(ENAME)
14

Showing rows 0 - 0 (1 total, Query took 0.0008 seconds.)

```
-- 15. Display the total salaries paid to the employees. SELECT SUM(SAL) FROM EMP
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SUM(SAL)
290250.0

Showing rows 0 - 0 (1 total, Query took 0.0012 seconds.)

```
-- 16. Display the maximum, minimum and average salary in the company. SELECT MAX(SAL), MIN(SAL), AVG(SAL) FROM EMP
```

[Edit inline] [Edit] [Create PHP code]

+ Options

MAX(SAL)	MIN(SAL)	AVG(SAL)
50000.0	8000.0	20732.14286

Showing rows 0 - 0 (1 total, Query took 0.0011 seconds.)

```
-- 17. List the maximum salary paid to a salesman. SELECT MAX(SAL) FROM EMP WHERE JOB='salesman'
```

[Edit inline] [Edit] [Create PHP code]

+ Options

MAX(SAL)
16000.0

MySQL returned an empty result set (i.e. zero rows). (Query took 0.2696 seconds.)

```
-- 18. Add one more column to the DEPT Table (Country varchar2 (15)); ALTER TABLE DEPT ADD COUNTRY VARCHAR(15)
```

[Edit inline] [Edit] [Create PHP code]

1 row affected. (Query took 0.0233 seconds.)

```
-- 19. Set the name of the country as ‘USA’ for those whose DEPTNO=10 UPDATE DEPT SET COUNTRY='USA' WHERE DEPTNO=10
```

[Edit inline] [Edit] [Create PHP code]

3 rows affected. (Query took 0.0314 seconds.)

```
-- 20. Set the name of the country as ‘INDIA’ where DEPTNO >10 UPDATE DEPT SET COUNTRY='INDIA' WHERE DEPTNO>10
```

[Edit inline] [Edit] [Create PHP code]

MySQL returned an empty result set (i.e. zero rows). (Query took 0.6187 seconds.)

```
-- 21. Set the column size of salary as (8, 2) in EMP Table. ALTER TABLE EMP MODIFY SAL DOUBLE(8,2)
```

[Edit inline] [Edit] [Create PHP code]

MySQL returned an empty result set (i.e. zero rows). (Query took 0.4170 seconds.)

```
-- 22. Set the column size of DNAME as varchar2 (20) in DEPT Table. ALTER TABLE DEPT MODIFY DNAME VARCHAR(20)
```

[Edit inline] [Edit] [Create PHP code]

MySQL returned an empty result set (i.e. zero rows). (Query took 0.1269 seconds.)

```
-- 23. Drop the Column Country from DEPT Table. ALTER TABLE DEPT DROP COUNTRY
```

[Edit inline] [Edit] [Create PHP code]

14 rows affected. (Query took 0.0327 seconds.)

```
-- 24. Update all salary of the employees by 10% in EMP Table. UPDATE EMP SET SAL=SAL+SAL*0.1
```

[Edit inline] [Edit] [Create PHP code]

~ : DAY - 04 : ~

❖ Question:-

1. Create the following schema.
   a. Dept (DID, DName)
   b. Student (SID, SName, DID, Marks)
   c. ExtraCurricularDetail (EID, EName)
   d. ExtraCurricularParticipation (SID, EID)
2. 2. Insert suitable data.
3. 3. Write one query to join the Dept and Student tables.
4. 4. Write one query to join the Student, ExtraCurricularDetail and ExtraCurricularParticipation tables.
5. 5. Write one query to join all the four tables. different queries.

❖ Code:-

```sql
-- Creating Department Table
CREATE TABLE DEP (
  DID INT(3) NOT NULL,
  DNAME VARCHAR(20) NOT NULL,
  PRIMARY KEY(DID)
);

-- Creating Student Table
CREATE TABLE STU (
  SID INT(5) NOT NULL,
  SNAME VARCHAR(20) NOT NULL,
  MARKS DOUBLE(5,2),
  DID INT(3) NOT NULL,
  PRIMARY KEY(SID),
  FOREIGN KEY(DID) REFERENCES DEP(DID)
);

-- Creating Extra Curriculum Details Table
CREATE TABLE ECD (
  EID INT(3) NOT NULL,
  ENAME VARCHAR(10),
  PRIMARY KEY(EID)
);

-- Creating Students Participation Table
CREATE TABLE ECP (
  SID INT(5) NOT NULL,
  EID INT(3) NOT NULL,
  FOREIGN KEY(SID) REFERENCES STU(SID),
  FOREIGN KEY(EID) REFERENCES ECD(EID)
);

-- Inserting Values to Department Table
INSERT INTO DEP VALUES(101,'CSE');
INSERT INTO DEP VALUES(102,'ECE');
INSERT INTO DEP VALUES(103,'EE');
```

```sql
INSERT INTO DEP VALUES(104,'CE');
INSERT INTO DEP VALUES(105,'ME');

-- Inserting Values to Student Table
INSERT INTO STU VALUES(11,'Monish Bairagi',77.14,101);
INSERT INTO STU VALUES(12,'Debarghya Mukherjee',78.54,103);
INSERT INTO STU VALUES(13,'Koulik Das',79.14,104);
INSERT INTO STU VALUES(14,'Aniket Chakrabarty',80.94,105);
INSERT INTO STU VALUES(15,'Aishik Sikder',81.65,102);
INSERT INTO STU VALUES(16,'Koushik Das',72.55,101);
INSERT INTO STU VALUES(17,'Anindya Sarkar',94.52,102);
INSERT INTO STU VALUES(18,'Shaswata Das',99.99,105);

-- Inserting Values to Extra Curriculam Activity Table
INSERT INTO ECD VALUES(1,'CRICKET');
INSERT INTO ECD VALUES(2,'FOOTBALL');
INSERT INTO ECD VALUES(3,'BADMINTON');
INSERT INTO ECD VALUES(4,'TENNIS');
INSERT INTO ECD VALUES(5,'CHESS');
INSERT INTO ECD VALUES(6,'KABADDI');

-- Inserting Values to Students Participation Table
INSERT INTO ECP VALUES(11,1);
INSERT INTO ECP VALUES(11,5);
INSERT INTO ECP VALUES(11,6);
INSERT INTO ECP VALUES(12,4);
INSERT INTO ECP VALUES(12,5);
INSERT INTO ECP VALUES(13,1);
INSERT INTO ECP VALUES(13,6);
INSERT INTO ECP VALUES(14,1);
INSERT INTO ECP VALUES(14,2);
INSERT INTO ECP VALUES(14,3);
INSERT INTO ECP VALUES(14,6);
INSERT INTO ECP VALUES(15,1);
INSERT INTO ECP VALUES(15,3);
INSERT INTO ECP VALUES(15,5);
INSERT INTO ECP VALUES(16,3);
INSERT INTO ECP VALUES(16,5);
INSERT INTO ECP VALUES(16,6);
INSERT INTO ECP VALUES(17,4);
INSERT INTO ECP VALUES(17,5);
INSERT INTO ECP VALUES(18,1);
INSERT INTO ECP VALUES(18,2);
INSERT INTO ECP VALUES(18,3);
INSERT INTO ECP VALUES(18,4);
INSERT INTO ECP VALUES(18,5);
INSERT INTO ECP VALUES(18,6);

-- Query to join the DEP and STU Tables
SELECT SNAME,DNAME FROM STU,DEP WHERE STU.SID=11 AND STU.DID=DEP.DID ;

-- Query to join the STU, ECD and ECP Tables.
SELECT SNAME,ENAME FROM STU,ECD,ECP WHERE STU.SID=11 AND STU.SID=ECP.SID AND
ECD.EID=ECP.EID;

-- Query to join the DEP,STU, ECD and ECP Tables.
SELECT SNAME,DNAME,ENAME FROM STU, DEP, ECD, ECP WHERE STU.SID=11 AND STU.DID=DEP.DID
AND STU.SID=ECP.SID AND ECP.EID=ECD.EID;
```

❖ Output:-

Showing rows 0 - 0 (1 total, Query took 0.0022 seconds.)

```
-- Query to join the DEP and STU Tables SELECT SNAME,DNAME FROM STU,DEP WHERE STU.SID=11 AND STU.DID=DEP.DID
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SNAME	DNAME
Monish Bairagi	CSE

Showing rows 0 - 2 (3 total, Query took 0.0021 seconds.)

```
-- Query to join the STU, ECD and ECP Tables. SELECT SNAME,ENAME FROM STU,ECD,ECP WHERE STU.SID=11 AND STU.SID=ECP.SID AND ECD.EID=ECP.EID
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SNAME	ENAME
Monish Bairagi	CRICKET
Monish Bairagi	CHESS
Monish Bairagi	KABADDI

Showing rows 0 - 2 (3 total, Query took 0.0028 seconds.)

```
-- Query to join the DEP,STU, ECD and ECP Tables. SELECT SNAME,DNAME,ENAME FROM STU, DEP, ECD, ECP WHERE STU.SID=11 AND STU.DID=DEP.DID AND STU.SID=ECP.SID AND ECP.EID=EC
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SNAME	DNAME	ENAME
Monish Bairagi	CSE	CRICKET
Monish Bairagi	CSE	CHESS
Monish Bairagi	CSE	KABADDI

~ : DAY - 05 : ~

❖ Question:-

1. Show Left, Right and Full Outer Join with suitable example.

❖ Code:-

```
-- Creating Department Table
CREATE TABLE DEP (
  DID INT(3) NOT NULL,
  DNAME VARCHAR(20) NOT NULL,
  PRIMARY KEY(DID)
);

-- Creating Student Table
CREATE TABLE STU (
  SID INT(5) NOT NULL,
  SNAME VARCHAR(20) NOT NULL,
  MARKS DOUBLE(5,2),
  DID INT(3) NOT NULL,
  PRIMARY KEY(SID)
);

-- Inserting Values to Department Table
INSERT INTO DEP VALUES(101,'CSE');
INSERT INTO DEP VALUES(102,'ECE');
INSERT INTO DEP VALUES(103,'EE');
INSERT INTO DEP VALUES(104,'CE');
INSERT INTO DEP VALUES(105,'ME');
INSERT INTO DEP VALUES(106,'AE');

-- Inserting Values to Student Table
INSERT INTO STU VALUES(11,'Monish Bairagi',77.14,101);
INSERT INTO STU VALUES(12,'Debarghya Mukherjee',78.54,103);
INSERT INTO STU VALUES(13,'Koulik Das',79.14,104);
INSERT INTO STU VALUES(14,'Aniket Chakrabarty',80.94,105);
INSERT INTO STU VALUES(15,'Aishik Sikder',81.65,102);
INSERT INTO STU VALUES(16,'Koushik Das',72.55,101);
INSERT INTO STU VALUES(17,'Anindya Sarkar',94.52,102);
INSERT INTO STU VALUES(18,'Shaswata Das',99.99,105);
INSERT INTO STU VALUES(19,'The Unknown Boy',100,107);

-- Left Outer Join
SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU LEFT OUTER JOIN DEP ON
STU.DID=DEP.DID;

-- Right Outer Join
SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU RIGHT OUTER JOIN DEP ON
STU.DID=DEP.DID;

-- Full Outer Join
SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU LEFT OUTER JOIN DEP ON
STU.DID=DEP.DID UNION SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU
RIGHT OUTER JOIN DEP ON STU.DID=DEP.DID;
```

❖ Code:-

Showing rows 0 - 8 (9 total, Query took 0.0025 seconds.)

```
-- Left Outer Join SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU LEFT OUTER JOIN DEP ON STU.DID=DEP.DID
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SID	SNAME	MARKS	DID	DNAME
11	Monish Bairagi	77.14	101	CSE
12	Debarghya Mukherjee	78.54	103	EE
13	Koulik Das	79.14	104	CE
14	Aniket Chakrabarty	80.94	105	ME
15	Aishik Sikder	81.65	102	ECE
16	Koushik Das	72.55	101	CSE
17	Anindya Sarkar	94.52	102	ECE
18	Shaswata Das	99.99	105	ME
19	The Unknown Boy	100.00	107	*NULL*

Showing rows 0 - 8 (9 total, Query took 0.0039 seconds.)

```
-- Right Outer Join SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU RIGHT OUTER JOIN DEP ON STU.DID=DEP.DID
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SID	SNAME	MARKS	DID	DNAME
11	Monish Bairagi	77.14	101	CSE
12	Debarghya Mukherjee	78.54	103	EE
13	Koulik Das	79.14	104	CE
14	Aniket Chakrabarty	80.94	105	ME
15	Aishik Sikder	81.65	102	ECE
16	Koushik Das	72.55	101	CSE
17	Anindya Sarkar	94.52	102	ECE
18	Shaswata Das	99.99	105	ME
NULL	*NULL*	*NULL*	*NULL*	AE

Showing rows 0 - 9 (10 total, Query took 0.0073 seconds.)

```
-- Full Outer Join SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME FROM STU LEFT OUTER JOIN DEP ON STU.DID=DEP.DID UNION SELECT STU.SID,STU.SNAME,STU.MARKS,STU.DID,DEP.DNAME
FROM STU RIGHT OUTER JOIN DEP ON STU.DID=DEP.DID
```

[Edit inline] [Edit] [Create PHP code]

+ Options

SID	SNAME	MARKS	DID	DNAME
11	Monish Bairagi	77.14	101	CSE
12	Debarghya Mukherjee	78.54	103	EE
13	Koulik Das	79.14	104	CE
14	Aniket Chakrabarty	80.94	105	ME
15	Aishik Sikder	81.65	102	ECE
16	Koushik Das	72.55	101	CSE
17	Anindya Sarkar	94.52	102	ECE
18	Shaswata Das	99.99	105	ME
19	The Unknown Boy	100.00	107	*NULL*
NULL	*NULL*	*NULL*	*NULL*	AE

~ : DAY - 06 : ~

❖ **Question:-**

1) Please refer to the tables created as a part of the earlier Assignment and perform the following 12 Queries against those tables.

❖ **Code:-**

```
-- Creating DEPT table
CREATE TABLE DEPT (
  DEPTNO INT(3) NOT NULL,
  DNAME VARCHAR(12) NOT NULL,
  LOC VARCHAR(15) NOT NULL,
  PRIMARY KEY(DEPTNO)
);

-- Creating EMP table
CREATE TABLE EMP (
  EMPNO INT(4) NOT NULL,
  ENAME VARCHAR(10) NOT NULL,
  JOB VARCHAR(10) NOT NULL,
  MGR INT(4) NOT NULL,
  HIREDATE DATE NOT NULL,
  SAL DOUBLE(7,1) NOT NULL,
  COMM DOUBLE(6,1),
  DEPTNO INT(3) NOT NULL,
  PRIMARY KEY(EMPNO),
  FOREIGN KEY (DEPTNO) REFERENCES DEPT (DEPTNO)
);

-- Inserting data to the DEPT table
INSERT INTO DEPT VALUES(10,'Accounting','New Delhi');
INSERT INTO DEPT VALUES(20,'Research','Dhanbad');
INSERT INTO DEPT VALUES(30,'Sales','Pune');
INSERT INTO DEPT VALUES(40,'Operations','Boroda');

-- Inserting data to the EMP table
INSERT INTO EMP VALUES(7369,'Smith','Clerk',7902,'2018-12-17',8000,NULL,20);
INSERT INTO EMP VALUES(7499,'Allen','Salesman',7698,'2019-02-20',16000,300,30);
INSERT INTO EMP VALUES(7521,'Ward','Salesman',7698,'2019-02-22',12500,500,30);
INSERT INTO EMP VALUES(7566,'Jones','Manager',7839,'2019-04-02',29750,NULL,20);
INSERT INTO EMP VALUES(7654,'Martin','Salesman',7698,'2019-09-28',12500,1400,30);
INSERT INTO EMP VALUES(7698,'Blake','Manager',7839,'2019-05-01',28500,NULL,30);
INSERT INTO EMP VALUES(7782,'Clark','Manager',7839,'2019-06-09',24500,250,10);
INSERT INTO EMP VALUES(7788,'Scott','Analyst',7566,'2019-12-09',30000,NULL,20);
INSERT INTO EMP VALUES(7839,'King','President',7802,'2018-09-08',50000,NULL,10);
INSERT INTO EMP VALUES(7844,'Turner','Salesman',7698,'2018-09-08',15000,0,30);
INSERT INTO EMP VALUES(7876,'Adams','Clark',7788,'2017-01-12',11000,150,20);
INSERT INTO EMP VALUES(7900,'James','Clark',7698,'2018-12-03',9500,NULL,30);
INSERT INTO EMP VALUES(7902,'Ford','Analyst',7566,'2018-12-04',30000,300,20);
INSERT INTO EMP VALUES(7934,'Miller','Clark',7782,'2019-01-23',13000,NULL,10);
```

```sql
-- i. List the number of employees and the average salary for employees in
department 20.
SELECT COUNT(EMPNO) AS TOTAL_EMP, AVG(SAL) AS AVG_SAL FROM EMP WHERE DEPTNO=20;

-- ii. List the name, salary, and PF amount of all employees. (PF is calculated as
10% of basic salary)
SELECT ENAME,SAL,SAL*0.1 AS PF FROM EMP;

-- iii. List names of employees who are more than 2 years old in the company.
SELECT ENAME FROM EMP WHERE DATEDIFF(CURDATE(),HIREDATE)/365>2;

-- iv. List the employee details in the ascending order of their basic salary.
SELECT * FROM EMP ORDER BY SAL ASC;

-- v. List the employee name and hire date in descending order of the hire date.
SELECT ENAME, HIREDATE FROM EMP ORDER BY HIREDATE DESC;

-- vi. List employee name, salary, PF, HRA, DA, and gross; order the results in
the Ascending order of gross. HRA is 50% of the salary and DA is 30% of the
salary.
SELECT ENAME, SAL, SAL*0.1 AS PF, SAL*0.5 AS HRA, SAL*0.3 AS DA,
SAL*0.1+SAL*0.5+SAL*0.3+SAL AS GROSS FROM EMP;

-- vii. List the department numbers and number of employees in each department.
SELECT DEPTNO, COUNT(EMPNO) AS TOTAL_EMP FROM EMP GROUP BY DEPTNO;

-- viii. List the department number and total salary payable in each department.
SELECT DEPTNO, SUM(SAL) AS TOTAL_SAL FROM EMP GROUP BY DEPTNO;

-- ix. List the jobs and number of employees in each job. The result should be in
the Descending order of the number of employees.
SELECT JOB, COUNT(EMPNO) AS TOTAL_EMP FROM EMP GROUP BY JOB ORDER BY COUNT(EMPNO)
DESC;

-- x. List the total salary, maximum and minimum salary, and average salary of the
Employees job-wise.
SELECT JOB, SUM(SAL) AS TOTAL_SAL, MAX(SAL) AS MAX_SAL, MIN(SAL) AS MIN_SAL,
AVG(SAL) AS AVG_SAL FROM EMP GROUP BY JOB;

-- xi. List the total salary, maximum and minimum salary, and average salary of
the Employees for the department 20.
SELECT JOB, SUM(SAL) AS TOTAL_SAL, MAX(SAL) AS MAX_SAL, MIN(SAL) AS MIN_SAL,
AVG(SAL) AS AVG_SAL FROM EMP WHERE DEPTNO=20;

-- xii. List the total salary, maximum and minimum salary, and average salary of
the Employees job-wise, for department 20 and display only those rows where
average salary > 1000
SELECT JOB, SUM(SAL) AS TOTAL_SAL, MAX(SAL) AS MAX_SAL, MIN(SAL) AS MIN_SAL,
AVG(SAL) AS AVG_SAL FROM EMP WHERE DEPTNO=20 GROUP BY JOB HAVING AVG(SAL)>1000;
```

❖ Output:-

Your SQL query has been executed successfully.

```
-- i. List the number of employees and the average salary for employees in department 20. SELECT COUNT(EMPNO) AS TOTAL_EMP, AVG(SAL) AS AVG_SAL FROM EMP WHERE DEPTNO=20
```

[Edit inline] [Edit] [Create PHP code]

+ Options

TOTAL_EMP	AVG_SAL
5	21750.00000

Showing rows 0 - 13 (14 total, Query took 0.0002 seconds.)

```
-- ii. List the name, salary, and PF amount of all employees. (PF is calculated as 10% of basic salary) SELECT ENAME,SAL,SAL*0.1 AS PF FROM EMP
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

				ENAME	SAL	PF
☐	Edit	Copy	Delete	Smith	8000.0	800.0
☐	Edit	Copy	Delete	Allen	16000.0	1600.0
☐	Edit	Copy	Delete	Ward	12500.0	1250.0
☐	Edit	Copy	Delete	Jones	29750.0	2975.0
☐	Edit	Copy	Delete	Martin	12500.0	1250.0
☐	Edit	Copy	Delete	Blake	28500.0	2850.0
☐	Edit	Copy	Delete	Clark	24500.0	2450.0
☐	Edit	Copy	Delete	Scott	30000.0	3000.0
☐	Edit	Copy	Delete	King	50000.0	5000.0
☐	Edit	Copy	Delete	Turner	15000.0	1500.0
☐	Edit	Copy	Delete	Adams	11000.0	1100.0
☐	Edit	Copy	Delete	James	9500.0	950.0
☐	Edit	Copy	Delete	Ford	30000.0	3000.0
☐	Edit	Copy	Delete	Miller	13000.0	1300.0

Console

Showing rows 0 - 11 (12 total, Query took 0.0003 seconds.)

```
-- iii. List names of employees who are more than 2 years old in the company. SELECT ENAME FROM EMP WHERE DATEDIFF(CURDATE(),HIREDATE)/365>2
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

				ENAME
☐	Edit	Copy	Delete	Smith
☐	Edit	Copy	Delete	Allen
☐	Edit	Copy	Delete	Ward
☐	Edit	Copy	Delete	Jones
☐	Edit	Copy	Delete	Blake
☐	Edit	Copy	Delete	Clark
☐	Edit	Copy	Delete	King
☐	Edit	Copy	Delete	Turner
☐	Edit	Copy	Delete	Adams
☐	Edit	Copy	Delete	James
☐	Edit	Copy	Delete	Ford
☐	Edit	Copy	Delete	Miller

Showing rows 0 - 13 (14 total, Query took 0.0003 seconds.) [SAL: 8000.0... - 50000.0...]

```
-- iv. List the employee details in the ascending order of their basic salary. SELECT * FROM EMP ORDER BY SAL ASC
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

				EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
☐	Edit	Copy	Delete	7369	Smith	Clerk	7902	2018-12-17	8000.0	NULL	20
☐	Edit	Copy	Delete	7900	James	Clark	7698	2018-12-03	9500.0	NULL	30
☐	Edit	Copy	Delete	7876	Adams	Clark	7788	2017-01-12	11000.0	150.0	20
☐	Edit	Copy	Delete	7521	Ward	Salesman	7698	2019-02-22	12500.0	500.0	30
☐	Edit	Copy	Delete	7654	Martin	Salesman	7698	2019-09-28	12500.0	1400.0	30
☐	Edit	Copy	Delete	7934	Miller	Clark	7782	2019-01-23	13000.0	NULL	10
☐	Edit	Copy	Delete	7844	Turner	Salesman	7698	2018-09-08	15000.0	0.0	30
☐	Edit	Copy	Delete	7499	Allen	Salesman	7698	2019-02-20	16000.0	300.0	30
☐	Edit	Copy	Delete	7782	Clark	Manager	7839	2019-06-09	24500.0	250.0	10
☐	Edit	Copy	Delete	7698	Blake	Manager	7839	2019-05-01	28500.0	NULL	30
☐	Edit	Copy	Delete	7566	Jones	Manager	7839	2019-04-02	29750.0	NULL	20
☐	Edit	Copy	Delete	7902	Ford	Analyst	7566	2018-12-04	30000.0	300.0	20
☐	Edit	Copy	Delete	7788	Scott	Analyst	7566	2019-12-09	30000.0	NULL	20
☐	Edit	Copy	Delete	7839	King	President	7802	2018-09-08	50000.0	NULL	10

Console

Showing rows 0 - 13 (14 total, Query took 0.0004 seconds.) [HIREDATE: 2019-12-09... - 2017-01-12...]

```
-- v. List the employee name and hire date in descending order of the hire date. SELECT ENAME, HIREDATE FROM EMP ORDER BY HIREDATE DESC
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

				ENAME	HIREDATE
☐	Edit	Copy	Delete	Scott	2019-12-09
☐	Edit	Copy	Delete	Martin	2019-09-28
☐	Edit	Copy	Delete	Clark	2019-06-09
☐	Edit	Copy	Delete	Blake	2019-05-01
☐	Edit	Copy	Delete	Jones	2019-04-02
☐	Edit	Copy	Delete	Ward	2019-02-22
☐	Edit	Copy	Delete	Allen	2019-02-20
☐	Edit	Copy	Delete	Miller	2019-01-23
☐	Edit	Copy	Delete	Smith	2018-12-17
☐	Edit	Copy	Delete	Ford	2018-12-04
☐	Edit	Copy	Delete	James	2018-12-03
☐	Edit	Copy	Delete	King	2018-09-08
☐	Edit	Copy	Delete	Turner	2018-09-08
☐	Edit	Copy	Delete	Adams	2017-01-12

Showing rows 0 - 13 (14 total, Query took 0.0003 seconds.)

```
-- vi. List employee name, salary, PF, HRA, DA, and gross; order the results in the Ascending order of gross. HRA is 50% of the salary and DA is 30% of the salary. SELECT ENAME, SAL, SAL*0.1 AS PF, SAL*0.5 AS HRA, SAL*0.3 AS DA, SAL*0.1+SAL*0.5+SAL*0.3+SAL AS GROSS FROM EMP
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

				ENAME	SAL	PF	HRA	DA	GROSS
☐	Edit	Copy	Delete	Smith	8000.0	800.0	4000.0	2400.0	15200.0
☐	Edit	Copy	Delete	Allen	16000.0	1600.0	8000.0	4800.0	30400.0
☐	Edit	Copy	Delete	Ward	12500.0	1250.0	6250.0	3750.0	23750.0
☐	Edit	Copy	Delete	Jones	29750.0	2975.0	14875.0	8925.0	56525.0
☐	Edit	Copy	Delete	Martin	12500.0	1250.0	6250.0	3750.0	23750.0
☐	Edit	Copy	Delete	Blake	28500.0	2850.0	14250.0	8550.0	54150.0
☐	Edit	Copy	Delete	Clark	24500.0	2450.0	12250.0	7350.0	46550.0
☐	Edit	Copy	Delete	Scott	30000.0	3000.0	15000.0	9000.0	57000.0
☐	Edit	Copy	Delete	King	50000.0	5000.0	25000.0	15000.0	95000.0
☐	Edit	Copy	Delete	Turner	15000.0	1500.0	7500.0	4500.0	28500.0
☐	Edit	Copy	Delete	Adams	11000.0	1100.0	5500.0	3300.0	20900.0
☐	Edit	Copy	Delete	James	9500.0	950.0	4750.0	2850.0	18050.0
☐	Edit	Copy	Delete	Ford	30000.0	3000.0	15000.0	9000.0	57000.0
☐	Edit	Copy	Delete	Miller	13000.0	1300.0	6500.0	3900.0	24700.0

Console

Showing rows 0 - 2 (3 total, Query took 0.0003 seconds.)

```
-- vii. List the department numbers and number of employees in each department. SELECT DEPTNO, COUNT(EMPNO) AS TOTAL_EMP FROM EMP GROUP BY DEPTNO
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

DEPTNO	TOTAL_EMP
10	3
20	5
30	6

Showing rows 0 - 2 (3 total, Query took 0.0003 seconds.)

```
-- viii. List the department number and total salary payable in each department. SELECT DEPTNO, SUM(SAL) AS TOTAL_SAL FROM EMP GROUP BY DEPTNO
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

				DEPTNO	TOTAL_SAL
☐	Edit	Copy	Delete	10	87500.0
☐	Edit	Copy	Delete	20	108750.0
☐	Edit	Copy	Delete	30	94000.0

Showing rows 0 - 5 (6 total, Query took 0.0004 seconds.)

```
-- ix. List the jobs and number of employees in each job. The result should be in the Descending order of the number of employees. SELECT JOB, COUNT(EMPNO) AS TOTAL_EMP FROM EMP
GROUP BY JOB ORDER BY COUNT(EMPNO) DESC
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

JOB	TOTAL_EMP
Salesman	4
Manager	3
Clark	3
Analyst	2
President	1
Clerk	1

Showing rows 0 - 5 (6 total, Query took 0.0003 seconds.)

```
-- x. List the total salary, maximum and minimum salary, and average salary of the Employees job-wise. SELECT JOB, SUM(SAL) AS TOTAL_SAL, MAX(SAL) AS MAX_SAL, MIN(SAL) AS MIN_SAL,
AVG(SAL) AS AVG_SAL FROM EMP GROUP BY JOB
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

				JOB	TOTAL_SAL	MAX_SAL	MIN_SAL	AVG_SAL
☐	Edit	Copy	Delete	Analyst	60000.0	30000.0	30000.0	30000.00000
☐	Edit	Copy	Delete	Clark	33500.0	13000.0	9500.0	11166.66667
☐	Edit	Copy	Delete	Clerk	8000.0	8000.0	8000.0	8000.00000
☐	Edit	Copy	Delete	Manager	82750.0	29750.0	24500.0	27583.33333
☐	Edit	Copy	Delete	President	50000.0	50000.0	50000.0	50000.00000
☐	Edit	Copy	Delete	Salesman	56000.0	16000.0	12500.0	14000.00000

Showing rows 0 - 0 (1 total, Query took 0.0002 seconds.)

```
-- xi. List the total salary, maximum and minimum salary, and average salary of the Employees for the department 20. SELECT JOB, SUM(SAL) AS TOTAL_SAL, MAX(SAL) AS MAX_SAL, MIN(SAL)
AS MIN_SAL, AVG(SAL) AS AVG_SAL FROM EMP WHERE DEPTNO=20
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

				JOB	TOTAL_SAL	MAX_SAL	MIN_SAL	AVG_SAL
☐	Edit	Copy	Delete	Clerk	108750.0	30000.0	8000.0	21750.00000

Showing rows 0 - 3 (4 total, Query took 0.0003 seconds.)

```
-- xii. List the total salary, maximum and minimum salary, and average salary of the Employees job-wise, for department 20 and display only those rows where average salary > 1000
SELECT JOB, SUM(SAL) AS TOTAL_SAL, MAX(SAL) AS MAX_SAL, MIN(SAL) AS MIN_SAL, AVG(SAL) AS AVG_SAL FROM EMP WHERE DEPTNO=20 GROUP BY JOB HAVING AVG(SAL)>1000
```

[Edit inline] [Edit] [Create PHP code]

Show all | Number of rows: 25 Filter rows: Search this table

+ Options

				JOB	TOTAL_SAL	MAX_SAL	MIN_SAL	AVG_SAL
☐	Edit	Copy	Delete	Analyst	60000.0	30000.0	30000.0	30000.00000
☐	Edit	Copy	Delete	Clark	11000.0	11000.0	11000.0	11000.00000
☐	Edit	Copy	Delete	Clerk	8000.0	8000.0	8000.0	8000.00000
☐	Edit	Copy	Delete	Manager	29750.0	29750.0	29750.0	29750.00000

~ : DAY - 07 : ~

❖ **Question:-**

Write necessary Pl/SQL code for the following problems

1) Display your name and Mobile number

2) Calculate the average of three numbers and classify the average into three classes 'A', 'B', and 'C; respectively, use your own assumption.

3) Find whether a given number is ODD or Even

4) Display your name for 'n' times using for and while loop.

5) Print the first 'n' natural number in descending order. use your own assumption.

6) Find the factorial of 'n' number

❖ **Code:-**

```
-- 1) Display your name and Mobile number
Declare
    Begin
        dbms_output.put_line('Name: Monish Kr. Bairagi');
         dbms_output.put_line('Mobile Number: 9038741205');
    end;


-- 2) Calculate the average of three numbers and classify the average into three
classes 'A', 'B', and 'C; respectively, use your own assumption.
declare
  a number(2);
  b number(2);
  c number(2);
  average number(2);
  begin
          a:=67;
          b:=96;
          c:=59;
          average:=(a+b+c)/3;
          if average>=80 then
                  dbms_output.put_line('Class A, Marks:'||average);
          elsif average>=60 and average<80 then
                  dbms_output.put_line('Class B, Marks:'||average);
          else
                  dbms_output.put_line('Class C, Marks:'||average);
          end if;
  end;


-- 3) Find whether a given number is ODD or Even
declare
    x number(2);
    begin
        x := 10;
        if mod(x,2)=0 then
            dbms_output.put_line(x||' is Even');
        else
            dbms_output.put_line(x||' is Odd');
        end if;
    end;
```

```
-- 4) Display ur name for 'n' times using for and while loop.
declare
  n number(2);
  i number(2);
  begin
          n:=3;
          dbms_output.put_line('Using For loop:-');
          for i in 1..n loop
                  dbms_output.put_line(i||') Monish Kr. Bairagi');
          end loop;
          i:=1;
          dbms_output.put_line('Using While loop:-');
          while i<=n loop
                  dbms_output.put_line(i||') Monish Kr. Bairagi');
                  i:=i+1;
          end loop;
  end;


-- 5) Print the first 'n' natural number in descending order. use your own assumption.
declare
  n number(2);
  i number(2);
  begin
          n:=5;
          for i in reverse 1..n loop
                  dbms_output.put_line(i);
          end loop;
  end;


-- 6) Find the factorial of 'n' number
declare
    n number(2);
    i number(2);
    f number(8);
    begin
        n:=5;
        f:=1;
        for i in 2..n loop
            f:=f*i;
        end loop;
        dbms_output.put_line('Factorial of '||n||' is '||f);
    end;
```

❖ Output:-

1) Display your name and Mobile number

SQL Worksheet

```
1  Declare
2      Begin
3          dbms_output.put_line('Name: Monish Kr. Bairagi');
4          dbms_output.put_line('Mobile Number: 9038741205');
5      end;
```

```
Statement processed.
Name: Monish Kr. Bairagi
Mobile Number: 9038741205
```

2) Calculate the average of three numbers and classify the average into three classes 'A', 'B', and 'C; respectively, use your own assumption.

SQL Worksheet

```
declare
    a number(2);
    b number(2);
    c number(2);
    average number(2);
    begin
        a:=67;
        b:=96;
        c:=59;
        average:=(a+b+c)/3;
        if average>=80 then
            dbms_output.put_line('Class A, Marks:'||average);
        elsif average>=60 and average<80 then
            dbms_output.put_line('Class B, Marks:'||average);
        else
            dbms_output.put_line('Class C, Marks:'||average);
        end if;
    end;
```

```
Statement processed.
Class B, Marks:74
```

3) Find whether a given number is ODD or Even

SQL Worksheet

```
declare
    x number(2);
    begin
        x := 10;
        if mod(x,2)=0 then
            dbms_output.put_line(x||' is Even');
        else
            dbms_output.put_line(x||' is Odd');
        end if;
    end;
```

```
Statement processed.
10 is Even
```

4) Display your name for 'n' times using for and while loop.

SQL Worksheet

```
declare
    n number(2);
    i number(2);
    begin
        n:=3;
        dbms_output.put_line('Using For loop:-');
        for i in 1..n loop
            dbms_output.put_line(i||') Monish Kr. Bairagi');
        end loop;
        i:=1;
        dbms_output.put_line('Using While loop:-');
        while i<=n loop
            dbms_output.put_line(i||') Monish Kr. Bairagi');
            i:=i+1;
        end loop;
    end;
```

```
Statement processed.
Using For loop:-
1) Monish Kr. Bairagi
2) Monish Kr. Bairagi
3) Monish Kr. Bairagi
Using While loop:-
1) Monish Kr. Bairagi
2) Monish Kr. Bairagi
3) Monish Kr. Bairagi
```

5) Print the first 'n' natural number in descending order. use your own assumption.

SQL Worksheet

```
declare
    n number(2);
    i number(2);
    begin
        n:=5;
        for i in reverse 1..n loop
            dbms_output.put_line(i);
        end loop;
    end;
```

```
Statement processed.
5
4
3
2
1
```

6) Find the factorial of 'n' number

SQL Worksheet

```
declare
    n number(2);
    i number(2);
    f number(8);
    begin
        n:=5;
        f:=1;
        for i in 2..n loop
            f:=f*i;
        end loop;
        dbms_output.put_line('Factorial of '||n||' is '||f);
    end;
```

```
Statement processed.
Factorial of 5 is 120
```

~ : DAY - 08 : ~

❖ **Question:-**

1) Write a PL/SQL code to calculate the sum of first 'n' odd numbers

2) Write a PL/SQL code to display the salary of an employee based on his/her employeeID

3) Write a PL/SQL code to display the name of the employee, Department number of the employee, Job of the employee as well as salary based on employeeID [Hints use %rowtype]

❖ **Code:-**

```
-- 1) Write a PL/SQL code to calculate the sum of first 'n' odd numbers
    declare
          n number(2);
          s number(3);
          i number(3);
          begin
                n:=5;
                s:=0;
                i:=1;
                while(i<2*n) loop
                      s:=s+i;
                      dbms_output.put_line(i);
                      i:=i+2;
                end loop;
                dbms_output.put_line('Sum: '||s);
          end;

-- 2) Write a PL/SQL code to display the salary of an employee based on his/her employeeID
    declare
          s emp.sal%type;
          i emp.empno%type;
          begin
                i:=7521;
                SELECT sal INTO s FROM emp WHERE empno=i;
                dbms_output.put_line('Salary of Emp. No-'||i||' is '||s);
          end;

-- 3) Write a PL/SQL code to display the name of the employee, Department
number of the employee, Job of the employee as well as salary based on
employeeID [ Hints use %rowtype]
    declare
          tuple emp%rowtype;
          i emp.empno%type;
          begin
                i:=7521;
                SELECT * INTO tuple FROM emp WHERE empno=i;
                dbms_output.put_line('Name:       '||tuple.ename);
                dbms_output.put_line('Dept No:    '||tuple.deptno);
                dbms_output.put_line('Job:        '||tuple.job);
                dbms_output.put_line('Salary:     '||tuple.sal);
          end;
```

❖ Output:-

1) Write a PL/SQL code to calculate the sum of first 'n' odd numbers

SQL Worksheet

```
declare
    n number(2);
    s number(3);
    i number(3);
    begin
        n:=3;
        s:=0;
        i:=1;
        while(i<2*n) loop
            s:=s+i;
            dbms_output.put_line(i);
            i:=i+2;
        end loop;
        dbms_output.put_line('Sum: '||s);
    end;
```

```
Statement processed.
1
3
5
Sum: 9
```

2) Write a PL/SQL code to display the salary of an employee based on his/her employeeID

SQL Worksheet

```
declare
    s emp.sal%type;
    i emp.empno%type;
    begin
        i:=7521;
        SELECT sal INTO s FROM emp WHERE empno=i;
        dbms_output.put_line('Salary of Emp. No-'||i||' is '||s);
    end;
```

```
Statement processed.
Salary of Emp. No-7521 is 1250
```

3) Write a PL/SQL code to display the name of the employee, Department number of the employee, Job of the employee as well as salary based on employeeID [Hints use %rowtype]

SQL Worksheet

```
declare
    tuple emp%rowtype;
    i emp.empno%type;
    begin
        i:=7521;
        SELECT * INTO tuple FROM emp WHERE empno=i;
        dbms_output.put_line('Name:      '||tuple.ename);
        dbms_output.put_line('Dept No:   '||tuple.deptno);
        dbms_output.put_line('Job:       '||tuple.job);
        dbms_output.put_line('Salary:    '||tuple.sal);
    end;
```

```
Statement processed.
Name:      WARD
Dept No:   30
Job:       SALESMAN
Salary:    1250
```