

SQL – PROJECT 1
YATEEN PAWAR

SQL – PROJECT

COURSE – MASTERS IN DATA SCIENCE AND ANALYSTS WITH AI

SUBMITTED BY – MR. YATEEN PAWAR

BATCH – 02:00 PM TO 04:00 PM

SUBMISSION DATE – 27TH FEBRUARY, 2023

**PROJECT GUIDE
MRS. AKANKSHA RANE**

**SUBMITTED TO
MRS. AKANKSHA RANE**



**I.T. VEDANT EDUCATION PVT. LTD
- VASHI, NAVI MUMBAI**

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Below question are based on 2 tables: -

Table 1 = WORKER

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Table 2 = TITLE

WORKER_REF_ID	WORKER_TITLE	AFFECTED_FROM
1	Manager	2016-02-20 00:00:00
2	Executive	2016-06-11 00:00:00
8	Executive	2016-06-11 00:00:00
5	Manager	2016-06-11 00:00:00
4	Asst. Manager	2016-06-11 00:00:00
7	Executive	2016-06-11 00:00:00
6	Lead	2016-06-11 00:00:00
3	Lead	2016-06-11 00:00:00

SQL Questions as below:-

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Q-1. Write an SQL query to fetch “FIRST_NAME” from Worker table using the alias name as <WORKER_NAME>.

Syntax = SELECT FIRST_NAME AS WORKER_NAME FROM WORKER;

WORKER_NAME
Monika
Niharika
Vishal
Amitabh
Vivek
Vipul
Satish
Geetika

Q-2. Write an SQL query to fetch “FIRST_NAME” from Worker table in upper case.

Syntax = SELECT UPPER(FIRST_NAME) FROM WORKER;

UPPER(FIRST_NAME)
MONIKA
NIHARIKA
VISHAL
AMITABH
VIVEK
VIPUL
SATISH
GEETIKA

Q-3. Write an SQL query to fetch unique values of DEPARTMENT from Worker table.

Syntax = SELECT DISTINCT(DEPARTMENT) FROM WORKER;

DEPARTMENT
HR
Admin
Account

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Q-4. Write an SQL query to print the first three characters of FIRST_NAME from Worker table.

Syntax = SELECT SUBSTRING(FIRST_NAME,1,3) FROM WORKER;

SUBSTRING(FIRST_NAME,1,3)

Mon

Nih

Vis

Ami

Viv

Vip

Sat

Gee

Q-5. Write an SQL query to find the position of the alphabet ('a') in the first name column 'Amitabh' from Worker table.

Syntax = SELECT INSTR(FIRST_NAME, BINARY 'a') FROM WORKER WHERE FIRST_NAME = 'Amitabh';

INSTR(FIRST_NAME, BINARY 'a')

5

Q-6. Write an SQL query to print the FIRST_NAME from Worker table after removing white spaces from the right side.

Syntax = SELECT RTRIM(FIRST_NAME) FROM WORKER;

RTRIM(FIRST_NAME)

Monika

Niharika

Vishal

Amitabh

Vivek

Vipul

Satish

Geetika

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Q-7. Write an SQL query that fetches the unique values of DEPARTMENT from Worker table and prints its length.

Syntax = SELECT DISTINCT LENGTH(DEPARTMENT) FROM WORKER;

LENGTH(DEPARTMENT)

2

5

7

Q-8. Write an SQL query to print the FIRST_NAME from Worker table after replacing 'a' with 'A'.

Syntax = SELECT REPLACE(FIRST_NAME,'a','A') FROM WORKER;

REPLACE(FIRST_NAME,'a','A')

MonikA

NihArikA

VishAl

AmitAbh

Vivek

Vipul

SAtish

GeetikA

Q-9. Write an SQL query to print the FIRST_NAME and LAST_NAME from Worker table into a single column COMPLETE_NAME. A space char should separate them.

Syntax = SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS 'COMPLETE_NAME' FROM WORKER;

COMPLETE_NAME

Monika Arora

Niharika Verma

Vishal Singhal

Amitabh Singh

Vivek Bhati

Vipul Diwan

Satish Kumar

Geetika Chauhan

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Q-10. Write an SQL query to print all Worker details from the Worker table order by FIRST_NAME Ascending.

Syntax = SELECT * FROM WORKER ORDER BY FIRST_NAME ASC;

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin

Q-11. Write an SQL query to print all Worker details from the Worker table order by FIRST_NAME Ascending and DEPARTMENT Descending.

Syntax = SELECT * FROM WORKER ORDER BY FIRST_NAME ASC,DEPARTMENT DESC;

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin

Q-12. Write an SQL query to print details for Workers with the first name as “Vipul” and “Satish” from Worker table.

Syntax = SELECT * FROM WORKER WHERE FIRST_NAME IN ('VIPUL','SATISH');

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin

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Q-13. Write an SQL query to print details of workers excluding first names, “Vipul” and “Satish” from Worker table.

Syntax = `SELECT * FROM WORKER WHERE FIRST_NAME NOT IN ('VIPUL','SATISH');`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Q-14. Write an SQL query to print details of Workers with DEPARTMENT name as “Admin”.

Syntax = `SELECT * FROM WORKER WHERE DEPARTMENT = 'ADMIN';`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Q-15. Write an SQL query to print details of the Workers whose FIRST_NAME contains ‘a’.

Syntax = `SELECT * FROM WORKER WHERE FIRST_NAME LIKE "%a%";`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

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Q-16. Write an SQL query to print details of the Workers whose FIRST_NAME ends with 'a'.

Syntax = SELECT * FROM WORKER WHERE FIRST_NAME LIKE "%a";

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Q-17. Write an SQL query to print details of the Workers whose FIRST_NAME ends with 'h' and contains six alphabets.

Syntax = SELECT * FROM WORKER WHERE FIRST_NAME LIKE "_____ h";

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin

Q-18. Write an SQL query to print details of the Workers whose SALARY lies between 100000 and 500000.

Syntax = SELECT * FROM WORKER WHERE SALARY BETWEEN 100000 AND 500000;

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account

Q-19. Write an SQL query to print details of the Workers who have joined in Feb'2014.

Syntax = SELECT * FROM WORKER WHERE YEAR(JOINING_DATE) = 2014 AND MONTH(JOINING_DATE) = 2;

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin

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Q-20. Write an SQL query to fetch the count of employees working in the department 'Admin'.

Syntax = SELECT COUNT(*) FROM WORKER WHERE DEPARTMENT = 'ADMIN';

COUNT(*)

5

Q-21. Write an SQL query to fetch worker names with salaries >= 50000 and <= 100000.

Syntax = SELECT CONCAT(FIRST_NAME, ' ', LAST_NAME) AS WORKER_NAMES FROM WORKER WHERE SALARY >= 50000 AND SALARY <= 100000;

OR

WHERE SALARY BETWEEN 50000 AND 100000;

WORKER_NAMES

Monika Arora

Niharika Verma

Satish Kumar

Geetika Chauhan

Q-22. Write an SQL query to fetch the no. of workers for each department in the descending order.

Syntax = SELECT COUNT(*) NO_OF_WORKER, DEPARTMENT FROM WORKER GROUP BY DEPARTMENT ORDER BY DEPARTMENT DESC;

NO_OF_WORKER	DEPARTMENT
2	HR
5	Admin
1	Account

Q-23. Write an SQL query to print details of the Workers who are also Managers.

Syntax = SELECT DISTINCT WORKER.FIRST_NAME, TITLE.WORKER_TITLE FROM WORKER INNER JOIN TITLE ON WORKER.WORKER_ID = TITLE.WORKER_REF_ID AND TITLE.WORKER_TITLE = 'MANAGER';

FIRST_NAME	WORKER_TITLE
Monika	Manager
Vivek	Manager

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Q-24. Write an SQL query to fetch duplicate records having matching data in some fields from title table

Syntax = `SELECT WORKER_TITLE, AFFECTED_FROM, COUNT(*) FROM Title GROUP BY WORKER_TITLE, AFFECTED_FROM HAVING COUNT(*) > 1;`

WORKER_TITLE	AFFECTED_FROM	COUNT(*)
Executive	2016-06-11 00:00:00	3
Lead	2016-06-11 00:00:00	2

Q-25. Write an SQL query to show only odd rows from a table.

Syntax = `SELECT * FROM WORKER WHERE MOD (WORKER_ID,2) <> 0;`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin

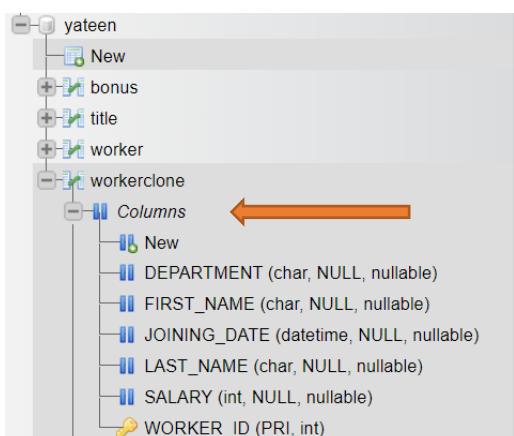
Q-26. Write an SQL query to show only even rows from a table.

Syntax = `SELECT * FROM Worker WHERE MOD (WORKER_ID, 2) = 0;`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Q-27. Write an SQL query to clone a new table from another table.

Syntax = `CREATE TABLE WORKERCLONE LIKE WORKER;`



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Q-28. Write an SQL query to show the current date and time.

Syntax = SELECT NOW();

NOW()

2023-02-23 14:44:09

Q-29. Write an SQL query to show the top n (say 10) records of a table.

Syntax = SELECT * FROM WORKER ORDER BY SALARY DESC LIMIT 10;

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin

Q-30. Write an SQL query to determine the nth (say n=5) highest salary from a table.

Syntax = SELECT Salary AS 5TH_HIGHEST_SALARY FROM Worker ORDER BY Salary DESC LIMIT 5,4;

5TH_HIGHEST_SALARY

100000
90000
80000

Q-31. Write an SQL query to determine the 5th highest salary without using TOP or limit method.

Syntax = SELECT SALARY FROM WORKER W1 WHERE 4 = (SELECT COUNT(DISTINCT (W2.SALARY)) FROM WORKER W2 WHERE W2.SALARY >= W1.SALARY);

Salary
100000

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Q-32. Write an SQL query to fetch the list of employees with the same salary.

Syntax = SELECT DISTINCT W.WORKER_ID, W.FIRST_NAME, W.SALARY FROM WORKER W, WORKER W1 WHERE W.SALARY = W1.SALARY AND W.WORKER_ID != W1.WORKER_ID;

WORKER_ID	FIRST_NAME	Salary
5	Vivek	500000
4	Amitabh	500000

Q-33. Write an SQL query to show the second highest salary from a table.

Syntax = SELECT MAX(SALARY) FROM WORKER WHERE SALARY NOT IN (SELECT MAX(SALARY) FROM WORKER);

MAX(SALARY)

300000

Q-34. Write an SQL query to show one row twice in results from a table.

Syntax = SELECT FIRST_NAME, LAST_NAME, DEPARTMENT FROM WORKER W WHERE W.DEPARTMENT = 'HR' UNION ALL SELECT FIRST_NAME, LAST_NAME, DEPARTMENT FROM WORKER W1 WHERE W1.DEPARTMENT = 'HR';

FIRST_NAME	LAST_NAME	DEPARTMENT
Monika	Arora	HR
Vishal	Singhal	HR
Monika	Arora	HR
Vishal	Singhal	HR

Q-35 Write an SQL query to fetch the first 50% records from a table.

Syntax = SELECT * FROM WORKER WHERE WORKER_ID <= (SELECT COUNT(WORKER_ID)/2 FROM WORKER);

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Niharika	Verma	80000	2014-06-11 09:00:00	Admin
3	Vishal	Singhal	300000	2014-02-20 09:00:00	HR
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin

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Q-36. Write an SQL query to fetch the departments that have less than five people in it.

Syntax = `SELECT DEPARTMENT,COUNT(WORKER_ID) AS NO_OF_WORKERS FROM WORKER GROUP BY DEPARTMENT HAVING COUNT(WORKER_ID)<5;`

DEPARTMENT	NO_OF_WORKERS
Account	1
HR	2

Q-37. Write an SQL query to show all departments along with the number of people in there.

Syntax = `SELECT DEPARTMENT,COUNT(WORKER_ID) AS NO_OF_WORKERS FROM WORKER GROUP BY DEPARTMENT;`

DEPARTMENT	NO_OF_WORKERS
Account	1
Admin	5
HR	2

Q-38. Write an SQL query to show the last record from a table.

Syntax = `SELECT * FROM WORKER WHERE WORKER_ID = (SELECT MAX(WORKER_ID) FROM WORKER);`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin

Q-39. Write an SQL query to fetch the last five records from a table.

Syntax = `SELECT * FROM WORKER ORDER BY WORKER_ID DESC LIMIT 5;`

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DEPARTMENT
8	Geetika	Chauhan	90000	2014-04-11 09:00:00	Admin
7	Satish	Kumar	75000	2014-01-20 09:00:00	Admin
6	Vipul	Diwan	200000	2014-06-11 09:00:00	Account
5	Vivek	Bhati	500000	2014-06-11 09:00:00	Admin
4	Amitabh	Singh	500000	2014-02-20 09:00:00	Admin

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Q-40. Write an SQL query to print the name of employees having the highest salary in each department.

Syntax = SELECT Y.DEPARTMENT,Y.FIRST_NAME,Y.SALARY FROM (SELECT MAX(SALARY) AS TOTAL_SALARY,DEPARTMENT FROM WORKER GROUP BY DEPARTMENT) AS P INNER JOIN WORKER Y ON P.DEPARTMENT=Y.DEPARTMENT AND P.TOTAL_SALARY=Y.SALARY;

DEPARTMENT	FIRST_NAME	SALARY
HR	Vishal	300000
Admin	Amitabh	500000
Admin	Vivek	500000
Account	Vipul	200000

Q-41. Write an SQL query to fetch three max salaries from a table.

Syntax = SELECT DISTINCT SALARY FROM WORKER Y WHERE 3 >= (SELECT COUNT(DISTINCT SALARY) FROM WORKER P WHERE Y.SALARY <= P.SALARY) ORDER BY Y.SALARY DESC;

SALARY
500000
300000
200000

Q-42. Write an SQL query to fetch three min salaries from a table.

Syntax = SELECT DISTINCT SALARY FROM WORKER Y WHERE 3 >= (SELECT COUNT(DISTINCT SALARY) FROM WORKER P WHERE Y.SALARY >= P.SALARY) ORDER BY Y.SALARY ASC;

SALARY
75000
80000
90000

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Q-43. Write an SQL query to fetch departments along with the total salaries paid for each of them.

Syntax = SELECT DEPARTMENT, SUM(SALARY) FROM WORKER GROUP BY DEPARTMENT;

DEPARTMENT	SUM(SALARY)
Account	2000000
Admin	1245000
HR	400000

Q-44. Write an SQL query to fetch the names of workers who earn the highest salary.

Syntax = SELECT FIRST_NAME, SALARY FROM WORKER WHERE SALARY=(SELECT MAX(SALARY) FROM WORKER);

FIRST_NAME	SALARY
Amitabh	500000
Vivek	500000

Q-45. Write an SQL query to fetch the names of the workers who work as executive.

Syntax = SELECT WORKER.FIRST_NAME, WORKER.LAST_NAME, TITLE.WORKER_TITLE FROM WORKER INNER JOIN TITLE ON WORKER.WORKER_ID=TITLE.WORKER_REF_ID WHERE TITLE.WORKER_TITLE = "EXECUTIVE";

FIRST_NAME	LAST_NAME	WORKER_TITLE
Niharika	Verma	Executive
Geetika	Chauhan	Executive
Satish	Kumar	Executive

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