Assignments on SQL

Table Structures

Programmer Table:

name	date_of_birth	date_of_joining	sex	prof_1	prof_2	salary
somdutt	1966-04-21	1992-04-21	Male	Pascal	Basic	3200
devdutt	1972-10-02	1995-12-12	Male	bdps	dcs	5000
Vishnu	2002-12-18	2020-11-12	Male	Python	C	7000
Nallendrani	2000-09-07	2017-11-18	Female	Java	C++	7000

Software Table:

name	title	dev_in	scost	dcost	sold
somdutt	parachutes	basic	400	6000	43
devdutt	fligths	medium	420	8000	50
vishnu	mango	advanced	752	12000	108
Nallendrani	jeep	basic	355	4500	56

Studies Table:

name	splace	course	ccost
somdutt	sabhari	pgdca	4500
Nallendrani	cbe	dma	3000
Vishnu	tup	dtp	6000
devdutt	bdps	dcs	5000

(NOTE: ADDITIONAL ATTRIBUTES IN THE TABLE WERE ALSO INCLUDED**)**

QUERIES – I:

1) Find out the SELLING COST AVERAGE for the packages developed in PASCAL?
   SELECT AVG(SCOST+DCOST) AS AVERAGE FROM SOFTWARE WHERE DEV_IN='PASCAL';
2) Display the names and ages of all programmers.
   SELECT NAME AS NAME,TIMESTAMPDIFF(YEAR,DOB,CURDATE()) AS AGE FROM PROGRAMMER;

3) Display the names and ages of all the programmers who have undergone training in DCS course.

```
SELECT P.NAME AS NAME, TIMESTAMPDIFF(YEAR,P.DOB,CURDATE()) AS AGE FROM PROGRAMMER AS P INNER JOIN STUDIES AS S ON P.NAME=S.NAME WHERE S.COURSE='IMG_REC';
```

4) What is the highest numbers of copies sold by a package?

```
SELECT PRO_TITLE AS PROJECT,SOLDED_SOFT AS SOLDED FROM SOFTWARE WHERE SOLDED_SOFT=(SELECT MAX(SOLDED_SOFT) AS SOLDED FROM SOFTWARE;
```

5) Display the names and date of birth of all the programmer born in JANUARY.

```
SELECT NAME AS NAME,DOB AS DOB FROM PROGRAMMER WHERE MONTH(DOB)=1;
```

6) Display lowest course fee.

```
SELECT COURSE AS COURSE,COU_COST AS COURSE_FEE FROM STUDIES WHERE COU_COST=(SELECT MIN(COU_COST) FROM STUDIES);
```

7) How many programmer has done PGDCA course.

```
SELECT COUNT(*) AS PALLADIUM_COURSE FROM PROGRAMMER AS P INNER JOIN STUDIES AS S ON P.NAME=S.NAME WHERE S.COURSE='PALLADIUM';
```

8) How much revenue has been earned through sales of packages in C.

```
SELECT SUM(SOLDED_SOFT * SCOST+DCOST) AS REVENUES_EARNED FROM SOFTWARE WHERE DEVO_LANG='JAVA';
```

9) Display the details of software developed by Ramesh?

```
SELECT PRO_TITLE,DEVO_LANG,SCOST,DCOST,SOLDED_SOFT FROM SOFTWARE WHERE NAME='RAMESH';
```

10) How many programmers studied at SABHARI.

```
SELECT COUNT(*) AS TOTAL FROM STUDIES WHERE ST_PLACE='SABHARI';
```

11) Display the details of PACKAGES whose sales crossed the 20000 mark.

```
SELECT PRO_TITLE,DEVO_LANG,SCOST,DCOST,SOLDED_SOFT FROM SOFTWARE WHERE SCOST+DCOST*SOLDED_SOFT>20000;
```

12) Find out the number of copies which should be sold in order to recover the development cost of each package.

```
SELECT CEIL(DCOST/SCOST) AS COPIES FROM SOFTWARE;
```

13) What is the price of the costliest software developed in BASIC?

```
SELECT PRO_TITLE AS PROJECT,SCOST AS COST FROM SOFTWARE
WHERE SCOST=(SELECT MAX(SCOST) FROM SOFTWARE WHERE
DEVO_LANG='JAVA');
```

14) Display the details of packages for which development cost has been recovered.

```
SELECT PRO_TITLE,DEVO_LANG,SCOST,DCOST,SOLDED_SOFT FROM
SOFTWARE WHERE(SCOST*SOLDED_SOFT)>=DCOST;
```

15) How many packages were developed in dbase?

```
SELECT COUNT(*) AS PACKAGES FROM SOFTWARE WHERE
DEVO_LANG='DBASE';
```

16) How many programmers studies at paragathi?

```
SELECT COUNT(*) AS PROGRAMMERS FROM STUDIES WHERE
ST_PLACE='PARAGATHI';
```

17) How many programmers paid 5000 to 10000 for their course?

```
SELECT COUNT(*) AS PROGRAMMERS FROM STUDIES WHERE COU_COST
BETWEEN 5000 AND 10000;
```

18) What is the average course fee?

```
SELECT AVG(COU_COST) AS AVERAGE FROM STUDIES;
```

19) Display the details of programmers knowing c?

```
SELECT NAME,DOB,DOJ,SEX,PROF_1,PROF_2,SALARY FROM
PROGRAMMER WHERE PROF_1='C' OR PROF_2='C';
```

20) How many programmers know either Cobol or Pascal?

```
SELECT COUNT(*) AS PROGRAMMERS FROM PROGRAMMER WHERE
PROF_1='JAVA' OR PROF_1='C++' OR PROF_2='JAVA' OR PROF_2='C++';
```

21) How many programmers don't know Pascal & C?

```
SELECT COUNT(*) AS PROGRAMMERS FROM PROGRAMMER WHERE
PROF1!='PASCAL' AND PROF2!='PASCAL' AND PROF1!='BASIC' AND
PROF2!='BASIC';
```

22) How old is the oldest male programmers?

```
SELECT MAX(TIMESTAMPDIFF(YEAR,DOB,CURDATE()) AS AGE FROM
PROGRAMMER;
```

23) What is the average age of female programmers?

```
SELECT AVG(TIMESTAMPDIFF(YEAR,DOB,CURDATE()) AS AVG_AGE
FROM PROGRAMMER WHERE SEX='FEMALE';
```

24) Calculate the experience in years for each programmers and display along with the names in descending order?

```
SELECT NAME AS NAME,TIMESTAMPDIFF(YEAR,DOB,CURDATE()) AS AVG_AGE FROM PROGRAMMER ORDER BY NAME;
```

25) Who are the programmers who celebrate their birthday during the current month?

```
SELECT NAME AS NAME FROM PROGRAMMER WHERE MONTH(DOB)=MONTH(CURDATE());
```

26) How many female programmers are there?

```
SELECT COUNT(*) AS TOTAL FROM PROGRAMMER WHERE SEX='FEMALE';
```

27) What are the languages known by the male programmers?

```
SELECT NAME AS NAME,PROF_1 AS LANG1,PROF_2 AS LANG2 FROM PROGRAMMER WHERE SEX='MALE';
```

28) What is the Average salary?

```
SELECT AVG(SALARY) AS AVG_SALARY FROM PROGRAMMER;
```

29) How many people draw 2000 to 4000?

```
SELECT COUNT(*) AS COUNT FROM PROGRAMMER WHERE SALARY BETWEEN 2000 AND 4000;
```

30) Display the details of those who don't know Clipper, Cobol or Pascal?

```
SELECT NAME,DOB,DOJ,SEX,PROF_1,PROF_2,SALARY FROM PROGRAMMER WHERE PROF1!='JAVA' AND PROF_2!='JAVA' AND PROF_2!='C' AND PROF_1!='C++' AND PROF_2!='C++';
```

31) How many Female programmers knowing C are above 24 years of age?

```
SELECT COUNT(*) FROM PROGRAMMER WHERE SEX='FEMALE' AND (PROF_1='JAVA' OR PROF_2='JAVA');
```

32) Who are the programmers who will be celebrating their Birthday within a week?

```
SELECT NAME AS NAME,DOB FROM PROGRAMMER WHERE MONTH(DOB)=MONTH(CURDATE()) AND (DAY(DOB) BETWEEN DAY(CURDATE()) AND DAY(CURDATE())+7);
```

33) Display the details of those with less than a year's experience?

```
SELECT NAME,DOB,DOJ,SEX,PROF_1,PROF_2,SALARY FROM PROGRAMMER WHERE TIMESTAMPDIFF(MONTH,DOJ,CURDATE())<12 AND YEAR(CURDATE())>=YEAR(DOJ);
```

34) Display the details of those who will be completing 2 years of service this year?

SELECT NAME,DOB,DOJ,SEX,PROF_1,PROF_2,SALARY FROM PROGRAMMER WHERE FLOOR(YEAR(CURDATE())-YEAR(DOJ))=2;

35) Calculate the amount to be recovered for those packages whose development cost has not been recovered?

SELECT NAME,(SCOST-DCOST) AS AMOUNT_TO_RECOVER FROM SOFTWARE WHERE SOLDED_SOFT*DCOST<SCOST;

36) List the packages which have not been sold so far?

SELECT PRO_TITLE FROM SOFTWARE WHERE SOLDED_SOFT IS NULL;

37) Find out the cost of the software developed by Mary?

SELECT SCOST FROM SOFTWARE WHERE NAME='MARY';

38) Display the institute's names from the studies table without duplicates?

SELECT DISTINCT(ST_PLACE) FROM STUDIES;

39) How many different courses are mentioned in the studies table?

SELECT COUNT(DISTINCT(COURSE)) FROM STUDIES;

40) Display the names of the programmers whose names contain 2 occurrences of the letter A?

SELECT NAME AS NAME FROM PROGRAMMER WHERE LENGTH(NAME)-LENGTH(REPLACE(NAME,'A',''))=2;

41) Display the names of programmers whose names contain unto 5 characters?

SELECT NAME AS NAME FROM PROGRAMMER WHERE LENGTH(NAME)<=5;

42) How many female programmers knowing COBOL have more than 2 years experience?

SELECT COUNT(*) AS TOTAL FROM PROGRAMMER WHERE(PROF_1='JAVA' OR PROF_2='JAVA') AND YEAR(CURDATE())-YEAR(DOJ)>=2;

43) What is the length of the shortest name in the programmer table?

SELECT MIN(LENGTH(NAME)) AS MIN_LEN FROM PROGRAMMER;

44) What is the average development cost of a package developed in COBOL?

SELECT AVG(DCOST) FROM SOFTWARE WHERE DEVO_LANG='JAVA';

45) Display the name, sex, dob (DD/MM/YY format), doj for all the programmers without using conversion function?

SELECT NAME,SEX,CONCAT(RIGHT(CONCAT('0',DAY(DOB)),2),'/',RIGHT(CONCAT('

0',MONTH(DOB)),2),'/',RIGHT(YEAR(DOB),2) AS DOB,CONCAT(RIGHT(CONCAT('0',DAY(DOJ)),2),'/',RIGHT(CONCAT('0',MONTH(DOJ)),2),'/',RIGHT(YEAR(DOJ),2))AS DOJ FROM PROGRAMMER;

46) Who are the programmers who were born on the last day of the month?

SELECT NAME AS NAME FROM PROGRAMMER WHERE LAST_DAY(DOB)=DAY(DOB);

47) What is the amount paid in salaries of the male programmers who do not know Cobol?

SELECT SALARY FROM PROGRAMMER WHERE SEX='MALE' AND PROF1!='PASCAL' AND PROF_2!='PASCAL';

48) Display the title, scost, dcost and difference between scost and dcost in descending order of difference?

SELECT PRO_TITLE,SCOST,DCOST,SCOST-DCOST AS DIFF FROM SOFTWARE ORDER BY DIFF DESC;

49) Display the name, dob, doj of those month of birth and month of joining are same?

SELECT NAME,DOB,DOJ FROM PROGRAMMER WHERE MONTH(DOB)=MONTH(CURDATE());

50) Display the names of the packages whose names contain more than 1 word?

SELECT PRO_TITLE FROM SOFTWARE WHERE LENGTH(PRO_TITLE)-LENGTH(REPLACE(PRO_TITILE,'-',''))>=1 AND LENGTH(PRO_TITLE)-LENGTH(REPLACE(PRO_TITLE,'-',''))!=0;

QUERIES – II:

1) Display THE NUMBER OF packages developed in EACH language.

SELECT COUNT(DISTINCT DEV_IN) AS NUMBEROFDEV_IN FROM SOFTWARE;

2) Display THE NUMBER OF packages developed by EACH person.

SELECT NAME,COUNT(DISTINCT DEV_IN) AS NUMBEROFDEV_IN FROM SOFTWARE;

3) Display THE NUMBER OF male and female programmer.

```
SELECT COUNT(DISTINCT NAME) AS NUMBEROFDEV_IN WHERE
SEX='MALE' FROM PROGRAMMER;

SELECT COUNT(DISTINCT NAME) AS NUMBEROFDEV_IN WHERE
SEX='FEMALE' FROM PROGRAMMER;
```

4) Display THE COSTLIEST packages and HIGHEST selling developed in EACH language.

```
SELECT dev_in, MAX(scost), MAX(dcost)
FROM software GROUP BY dev_in;
```

5) Display THE NUMBER OF people BORN in EACH YEAR.

```
SELECT YEAR(dob),COUNT(*)
FROM Programmer GROUP BY YEAR(dob);
```

6) Display THE NUMBER OF people JOINED in EACH YEAR.

```
SELECT YEAR(doj),COUNT(*)
FROM Programmer GROUP BY YEAR(doj);
```

7) Display THE NUMBER OF people BORN in EACH MONTH.

```
SELECT MONTH(dob),COUNT(*)
FROM Programmer GROUP BY MONTH(dob);
```

8) Display THE NUMBER OF people JOINED in EACH MONTH.

```
SELECT MONTH(doj),COUNT(*)
FROM Programmer GROUP BY MONTH(doj);
```

9) Display the language wise COUNTS of prof1.

```
SELECT prof1,COUNT(*)
FROM Programmer GROUP BY prof1;
```

10) Display the language wise COUNTS of prof2.

```
SELECT prof2,COUNT(*)
FROM Programmer GROUP BY prof2;
```

11) Display THE NUMBER OF people in EACH salary group.

```
SELECT salary,COUNT(*)
FROM Programmer GROUP BY salary
ORDER BY salary;
```

12) Display THE NUMBER OF people who studied in EACH institute.

```
SELECT splace AS institute_name, COUNT(*) AS no_of_people
FROM studies GROUP BY splace;
```

13) Display THE NUMBER OF people who studied in EACH course.

```
SELECT course, COUNT(*) AS count
FROM studies GROUP BY course;
```

14) Display the TOTAL development COST of the packages developed in EACH language.

```
SELECT dev_in AS LANGUAGE , SUM(dcost) AS TOTALCOST
FROM SOFTWARE GROUP BY dev_in;
```

15) Display the selling cost of the package developed in EACH language.

```
SELECT dev_in AS LANGUAGE , SUM(scost) AS SELLINGCOST
FROM SOFTWARE GROUP BY dev_in;
```

16) Display the cost of the package developed by EACH programmer.

```
SELECT name , SUM(dcost) AS TOTALCOST
FROM software GROUP BY name;
```

17) Display the sales values of the package developed in EACH programmer.

```
SELECT name, SUM(scost*SOLD) AS SALES_COST
FROM software GROUP BY name;
```

18) Display the NUMBER of packages developed by EACH programmer.

```
SELECT name, COUNT(TITLE) AS NO_OF_PACKAGE
FROM software GROUP BY name;
```

19) Display the sales COST of packages developed by EACH programmer language wise.

```
SELECT dev_in, SUM(scost)
FROM software GROUP BY dev_in;
```

20) Display EACH programmers name, costliest package and cheapest packages developed by Him/Her.

```
SELECT  name, MIN(dcost),MAX(dcost)
FROM software GROUP BY name;
```

21) Display EACH language name with AVERAGE development cost, AVERAGE cost, selling cost and AVERAGE price per copy.

```
SELECT dev_in, AVG(dcost) AS avg_dcost, AVG(scost) AS AVG_COST, AVG(scost)
AS SELLING_COST
FROM SOFTWARE
GROUP BY dev_in;
```

22) Display EACH institute name with NUMBER of courses, AVERAGE cost per course.

```
SELECT splace AS institute_name, COUNT(course) AS no_of_course, AVG(ccost)
AS COST_PER_COURSE
FROM studies GROUP BY splace
```

23) Display EACH institute name with NUMBER of students.

```
SELECT splace AS institute_name, COUNT(name) AS  no_of_students
FROM studies GROUP BY splace;
```

24) Display names of male and female programmers.

```
SELECT  name , sex
FROM programmer
ORDER BY sex;
```

25) Display the programmer's name and their packages.

```
SELECT name, title AS package
FROM software
ORDER BY name;
```

26) Display the NUMBER of packages in EACH language.

```
SELECT dev_in,COUNT(title)
FROM software
GROUP BY dev_in;
```

27) Display the NUMBER of packages in EACH language for which development cost is less than 1000.

```
SELECT dev_in,COUNT(title)
FROM software
WHERE dcost<10000
GROUP BY dcost ;
```

28) Display the AVERAGE difference BETWEEN scost and dcost for EACH language.

```
SELECT dev_in, AVG(dcost-scost)
FROM software
GROUP BY dev_in;
```

29) Display the TOTAL scost, dcsot and amount TOBE recovered for EACH programmer for whose dcost HAS NOT YET BEEN recovered.

```
SELECT name,SUM(scost),SUM(dcost),SUM(dcost-(scost*sold))
FROM software GROUP BY NAME
HAVING SUM(dcost)>SUM(scost*sold);
```

30) Display highest, lowest and average salaries for THOSE earning MORE than 2000.

```
SELECT MAX(salary),MIN(salary),AVG(salary)
FROM programmer
WHERE salary>2000;
```

QUERIES – III:

1) Who is the highest paid C programmer?

```
SELECT NAME,SALARY FROM PROGRAMMER ORDER BY SALARY DESC
LIMIT 1;
```

2) Who is the highest paid female cobol programmer?

```
SELECT NAME,SALARY FROM PROGRAMMER WHERE SEX='Female' ORDER
BY SALARY DESC LIMIT 1;
```

3) Display the name of the HIGEST paid programmer for EACH language (prof1)

```
SELECT NAME,PROF_1, MAX(SALARY) AS MAXSALARY FROM
PROGRAMMER GROUP BY PROF_1;
```

4) Who is the LEAST experienced programmer?

```
SELECT NAME FROM PROGRAMMER ORDER BY DATE_OF_JOINING ASC
LIMIT 1;
```

5) Who is the MOST experienced programmer?

```
SELECT NAME FROM PROGRAMMER ORDER BY DATE_OF_JOINING DESC
LIMIT 1;
```

6) Which language is known by ONLY ONE programmer?

```
SELECT prof2 AS programmer_name FROM programmer GROUP BY prof1
HAVING prof1 NOT IN (SELECT prof2 FROM programmer) AND
COUNT(prof1)=1UNION
SELECT prof2 FROM PROGRAMMER
GROUP BY prof2
HAVING prof2 NOT IN (SELECT prof1 FROM programmer) AND
COUNT(prof2)=1;
```

7) Who is the YONGEST programmer knowing DBASE?

```
SELECT NAME FROM PROGRAMMER WHERE PROF_1='DBASE' ORDER BY
DATE_OF_BIRTH ASC LIMIT 1;
```

8) Which institute has MOST NUMBER of students?

```
SELECT SPLACE FROM STUDIES ORDER BY STUDENTS DESC LIMIT 1;
```

9) Who is the above programmer?

```
SELECT NAME FROM STUDIES ORDER BY STUDENTS DESC LIMIT 1;
```

10) Which female programmer earns MORE than 3000/- but DOES NOT know C, C++, Oracle or Dbase?

```
SELECT name FROM Programmer WHERE sex = 'female' AND salary > 3000 AND prof1 NOT IN ('C', 'C++', 'Oracle', 'Dbase') AND prof2 NOT IN ('C', 'C++', 'Oracle', 'Dbase');
```

11) Which is the COSTLIEST course?

```
SELECT COURSE FROM STUDIES ORDER BY CCOST DESC LIMIT 1;
```

12) Which course has been done by MOST of the students?

```
SELECT COURSE FROM STUDIES ORDER BY STUDENTS DESC LIMIT 1;
```

13) Display name of the institute and course Which has below AVERAGE course fee?

```
SELECT NAME,AVG(CCOST) AS AVGCCOST FROM STUDIES;
```

14) Which institute conducts COSTLIEST course?

```
SELECT SPLACE FROM STUDIES ORDER BY CCOST DESC LIMIT 1;
```

15) Which course has below AVERAGE number of students?

```
SELECT COURSE,AVG(CCOST) AS AVGCCOST FROM STUDIES;
```

16) Which institute conducts the above course?

```
SELECT SPLACE,AVG(CCOST) AS AVGCCOST FROM STUDIES;
```

17) Display names of the course WHOSE fees are within 1000(+ or -) of the AVERAGE fee.

18) Which package has the HIGEST development cost?

```
SELECT DEV_IN FROM SOFTWARE ORDER BY DCOST DESC LIMIT 1;
```

19) Which package has the LOWEST selling cost?

```
SELECT DEV_IN FROM SOFTWARE ORDER BY SCOST ASC LIMIT 1;
```

20) Who developed the package, which has sold the LEAST number of copies?

```
SELECT NAME FROM SOFTWARE ORDER BY SOLD ASC LIMIT 1;
```

21) Which language was used to develop the package WHICH has the HIGEST sales amount?

```
SELECT DEV_IN FROM SOFTWARE ORDER BY SCOST DESC LIMIT 1;
```

22) How many copies of the package that has the LEAST DIFFRENCE between development and selling cost were sold?

```
SELECT SOLD, MIN(DCOST-SCOST) AS DIFF FROM SOFTWARE;
```

23) Which is the COSTLIEAST package developed in PASCAL?

```
SELECT CCOST FROM STUDIES WHERE COURSE='PASCAL' ORDER BY CCOST DESC LIMIT 1;
```

24) Which language was used to develop the MOST NUMBER of package?

```
SELECT dev_in FROM software GROUP BY dev_in HAVING
MAX(dev_in)=(SELECT MAX(dev_in) FROM software);
```

25) Which programmer has developed the HIGEST NUMBER of package?

```
SELECT s.name AS programmer_name, COUNT(*) AS num_packages_developed
FROM software s GROUP BY s.name ORDER BY COUNT(*) DESC LIMIT 1;
```

26) Who is the author of the COSTLIEST package?

```
SELECT NAME FROM STUDIES ORDER BY CCOST DESC LIMIT 1;
```

27) Display names of packages WHICH have been sold LESS THAN the AVERAGE number of copies?

```
SELECT title AS package_name FROM software WHERE sold < (SELECT AVG(sold)
AS avg_soldFROM software);
```

28) Who are the female programmers earning MORE than the HIGEST paid male programmers?

```
SELECT p.name, p.salary FROM programmer p WHERE p.sex = 'f' AND p.salary >
(SELECT MAX(p2.salary)FROM programmer p2 WHERE p2.sex = 'm');
```

29) Which language has been stated as prof1 by MOST of the programmers?

SELECT prof1 AS programming_language, COUNT(*) AS num_programmers FROM programmer GROUP BY prof1 ORDER BY COUNT(*) DESCLIMIT 1;

30) Who are the authors of packages, WHICH have recovered MORE THAN double the development cost?

SELECT s.name AS author_nameFROM software s WHERE s.sold * s.scost > 2 * s.dcost;

31) Display programmer names and CHEAPEST package developed by them in EACH language?

SELECT p.name,s.dev_in,MIN(s.sold) AS CHEAPEST_PACKAGE FROM programmer p INNER JOIN software s ON p.name=s.name GROUP BY p.name,s.dev_in;

32) Who is the YOUNGEST male programmer born in 1965?

SELECT NAME FROM PROGRAMMER WHERE GENDER='MALE' ORDER BY DATE_OF_BIRTH ASC LIMIT=1

33) Display language used by EACH programmer to develop the HIGEST selling and LOWEST selling package.

SELECT DEV_IN FROM FROM SOFTWARE ORDER BY SCOST DESC LIMIT1;

SELECT DEV_IN FROM FROM SOFTWARE ORDER BY SCOST ASC LIMIT1;

34) Who is the OLDEST female programmer WHO joined in 1992

SELECT NAME FROM PROGRAMMER WHERE GENDER='FEMALE' ORDER BY DATE_OF_BIRTH ASC LIMIT=1;

35) In WHICH year where the MOST NUMBER of programmer born?

SELECT (YEAR(DATE_OF_BIRTH) AS BYEAR, FROM PROGRAMMER LIMIT 1;

36) In WHICH month did MOST NUMBRER of programmer join?

SELECT MONTH(DATE_OF_JOINING) AS BYEAR, FROM PROGRAMMER LIMIT 1;

37) In WHICH language are MOST of the programmer's proficient?

SELECT prof1 AS language FROM Programmer GROUP BY language ORDER BY COUNT(*) DESC LIMIT 1;

38) Who are the male programmers earning BELOW the AVERAGE salary of female programmers?

SELECT name FROM Programmer WHERE sex = 'm' AND salary < (SELECT AVG(salary) FROM Programmer WHERE sex = 'f');

QUERIES – IV:

1) Display the details of THOSE WHO are drawing the same salary.
   SELECT *FROM Programmer WHERE salary IN (SELECT salary FROM Programmer GROUP BY salary HAVING COUNT(*) > 1);

2) Display the details of software developed by male programmers earning MORE than 3000.

SELECT *FROM Software WHERE name IN (SELECT name FROM Programmer WHERE sex = 'male' AND salary > 3000);

3) Display details of packages developed in PASCAL by female programmers.

SELECT *FROM Software WHERE dev_in = 'PASCAL' AND name IN (SELECT name FROM Programmer WHERE sex = 'female');

4) Display the details of the programmer WHO joined BEFORE 1990.

SELECT *FROM Programmer WHERE YEAR(doj) < 1990;

5) Display details of software developed in C by female programmers of PRAGATHI.

SELECT *FROM Software WHERE dev_in = 'C' AND name IN (SELECT name FROM Programmer WHERE sex = 'female' AND splace = 'PRAGATHI');

6) Display NUMBER of packages NUMBER of copies sold and sales value of EACH programmer Institute-wise.

SELECT p.name AS programmer_name, s.splace AS institute, COUNT(*) AS number_of_packages, SUM(s.sold) AS total_copies_sold, SUM(s.sold * s.scost) AS

```
total_sales_value FROM Programmer p JOIN Software s ON p.name = s.name GROUP BY p.name, s.splace;
```

7) Display details of software developed in DBASE by male programmers WHO belong to the institute on which MOST NUMBER OF programmer's studies.

```
SELECT *FROM Software WHERE dev_in = 'DBASE' AND name IN (SELECT name FROM Programmer WHERE sex = 'male' AND splace = (SELECT splace FROM Studies GROUP BY splace ORDER BY COUNT(*) DESC LIMIT 1));
```

8) Display the details of the software that was developed by male programmers born BEFORE 1965 and female programmers born AFTER 1975.

```
SELECT *FROM Software WHERE name IN (SELECT name FROM Programmer WHERE (sex = 'male' AND YEAR(dob) < 1965) OR (sex = 'female' AND YEAR(dob) > 1975));
```

9) Display the details of the software that was developed in the language that is NOT the programmer's first proficiency.

```
SELECT *FROM Software WHERE dev_in NOT IN (SELECT prof1 FROM Programmer UNION SELECT prof2 FROM Programmer);
```

10) Display details of software that was developed in the language which is NEITHER first NOR second proficiency of the programmer.

```
SELECT *FROM Software WHERE dev_in NOT IN (SELECT prof1 FROM Programmer UNION SELECT prof2 FROM Programmer);
```

11) Display details of software developed by male students of SABHARI.

```
SELECT *FROM Software WHERE name IN (SELECT name FROM Programmer WHERE sex = 'male' AND splace = 'SABHARI');
```

12) Display the names of programmers WHO HAVE NOT developed any package.

```
SELECT name FROM ProgrammerWHERE name NOT IN (SELECT DISTINCT name
FROM Software);
```

13) What is the total cost of the software developed by the programmers by APPLE?

```
SELECT SUM(dcost) AS total_cost FROM Software WHERE name IN (SELECT name
FROM Programmer WHERE splace = 'APPLE');
```

14) Who are the programmers WHO JOINED in the same day?

```
SELECT name FROM Programmer GROUP BY doj HAVING COUNT(*) > 1;
```

15) Who are the programmers WHO HAVE THE SAME PROF2?

```
SELECT name FROM Programmer GROUP BY prof2 HAVING COUNT(*) > 1;
```

16) Display the total sales values of software, institutes-wise.

```
SELECT splace AS institute, SUM(sold * scost) AS total_sales_value FROM Software
GROUP BY institute;
```

17) In which institutes did the person who developed the COSTLIEST package study?

```
SELECT splace AS institute FROM Studies WHERE name IN (SELECT name FROM
Software ORDER BY scost DESC LIMIT 1);
```

18) Which language listed in prof1 and prof2 HAS NOT BEEN used to develop any package?

```
SELECT language FROM (SELECT prof1 AS language FROM Programmer(UNION
SELECT prof2 FROM Programmer) AS languages WHERE language NOT IN (
SELECT dev_in FROM Software);
```

19) How much does the person WHO developed the HIGHEST selling package earn and WHAT course did he/she undergo?

```
SELECT p.name AS programmer_name, p.salary, s.course FROM Programmer p
JOIN Software s ON p.name = s.name WHERE s.sold = (SELECT MAX(sold)
FROM Software);
```

20) How many months will it take for each programmer to recover the cost of the course underwent?

```
SELECT p.name AS programmer_name, s.ccost / p.salary AS months_to_recover_cost
FROM Programmer p JOIN Studies s ON p.name = s.name;
```

21) Which is the COSTLIEST package developed by a person with under 3 year's expenences?

```
SELECT *FROM Software WHERE name IN (SELECT name FROM Programmer

WHERE YEAR(CURDATE()) - YEAR(doj) < 3);
```

22) What is the AVERAGE salary for those WHOSE software's sales value is more than 50,000?

```
SELECT AVG(p.salary) AS average_salary FROM Programmer p JOIN Software s ON p.name = s.name GROUP BY p.name HAVING SUM(s.sold * s.scost) > 50000;
```

23) How many packages were developed by the students WHO studied in the institute that Charge the LOWEST course fee?

```
SELECT COUNT(*) FROM Software WHERE name IN (SELECT name FROM Studies WHERE ccost = (SELECT MIN(ccost) FROM Studies));
```

24) How many packages were developed by the person WHO developed the CHEAPEST package? Where did he\she study?

```
SELECT COUNT(*)FROM Software WHERE name = (SELECT name FROM Software ORDER BY scost ASC LIMIT 1);
```

25) How many packages were developed by female programmers earning MORE than the HIGHEST paid male programmer?

```
SELECT COUNT(*) AS num_packages FROM software JOIN (SELECT p.name FROM programmer p WHERE p.sex = 'f' AND p.salary > (SELECT MAX(p.salary)FROM programmer p WHERE p.sex = 'm')) AS female_programmers ON s.name =female_programmers.name;
```

26) How many packages were developed by the MOST experienced programmers from BDPS?

```
SELECT COUNT(*) AS num_packages FROM software s WHERE s.name = (SELECT p.name FROM programmer p WHERE p.name IN (SELECT s.name FROM studies s WHERE s.splace = 'bdps')ORDER BY p.doj ASC LIMIT 1);
```

27) List the programmers (from software table) and institutes they studied, including those WHO DIDN'T develop any package.

SELECT p.name AS programmer_name, s.splace AS institute_studied_at FROM programmer p LEFT JOIN studies s ON p.name = s.name;

28) List each profit with the number of programmers having that prof1 and the number of packages developed in that prof1.

SELECT prof1 AS proficiency, COUNT(*) AS number_of_programmers, (SELECTCOUNT(*) FROM Software WHERE dev_in = prof1) AS number_of_packages_developed FROM Programmer GROUP BY prof1;

29) List programmer names (from programmer table) and number of packages EACH developed.

SELECT name, COUNT(*) AS number_of_packages_developed FROM Software GROUP BY name;

30) List all the details of programmers who have done a course at S.S.I.L.

SELECT p.*FROM Programmer p JOIN Studies s ON p.name = s.name WHERE s.splace = 'S.S.I.L';