Practical Assignment 2

. create relational database that contains the following tables and insert the following data into tables.

1. tblstud_info

→ CREATE TABLE tblstud_info (
Rno INT PRIMARY KEY,
Fname VARCHAR2(50),
Sname VARCHAR2(50),
Dno INT,
Sem INT,
Contact_no VARCHAR2(15),
Gender CHAR(1),
Bdate DATE
FORIEGN KEY (Dno) REFRENCES tbldept (Dno)
);

→ INSERT INTO tblstud_info (Rno, Fname, Sname, Dno, Sem, Contact_no, Gender, Bdate)
VALUES
(1,'Ankur','kahar',1,1,9823454543,'M',to_date('12/02/2001','DD/MM/YYYY'),
(2,'Dhaval','Joshi',1,1,8767675656,'M',to_date('23/05/2002','DD/MM/YYYY'),
(3,'Ankita','shah',1,1,8977777666,'F',to_date('01/11/2000','DD/MM/YYYY'),
(10,'komal','pandya',2,3,98989876,66,'F',to_date('25/07/2005','DD/MM/YYYY'),
(13,'Amit','Mehta',3,3,9898787878,'M',to_date('26/02/2009','DD/MM/YYYY'),
(23,'Jinal','Gandhi',8,1,9823456787,'F',to_date('28/09/2000','DD/MM/YYYY'),

(92, 'Ramesh', 'Patel', 2, 3, 9898766554, 'M', to_date('26/07/20
'DD/MM/Y
(4, 'Shweta', 'Patel', 3, 1, 9824534567, 'F', to_date('18/02/19
'DD/MM/Y
(7, 'Pooja', 'Desai', 3, 3, 9975310987, 'F', to_date('29/06/1
'DD/MM/
(8, 'Komal', 'Bhatia', 2, 3, 9864208642, 'F', to_date('18/07
'DD/MM/Y

2. tbldept

→ CREATE TABLE tbldept(
Dno INT PRIMARY KEY,
Dname VARCHAR2(50)
);

→ INSERT INTO tbldept (Dno, Dname) VALUES
(1, 'Information Technology'),
(2, 'Electrical'),
(3, 'Civil'),
(4, 'Mechanical'),
(5, 'Chemical');

3. tblstud_result

→ CREATE TABLE tblstud_result(
Rno INT,
Sub1 INT,
Sub2 INT,
Sub3 INT,
Sub4 INT,
Sub5 INT,

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FOREIGN KEY (Rno) REFRENCES tblstud_info (Rno)
);

→ INSERT INTO tblstud_result (Rno, SJ01, SJ02, SJ03, SJ04, SJ05)
VALUES (1, 76, 87, 87, 89, 93),
(2, 67, 76, 80, 86, 88),
(3, 55, 78, 77, 85, 80),
(43, 43, 76, 69, 55, 76),
(23, 22, 23, 25, 19, 20),
(22, 56, 34, 36, 38, 30),
(7, 33, 56, 45, 34, 30),
(8, 80, 90, 95, 92, 80);

1. Add total and percentage fields in tblstud_result table and update them as per the given marks

→ ALTER TABLE tblstud_result
ADD (total Number, per Number);

UPDATE tblstud_result
SET total = (SJ01 + SJ02 + SJ03 + SJ04 + SJ05),
per = total / 5;

2. Display students detail who are studied in Electrical

→ SELECT * FROM tblstud_info
WHERE Rno IN (SELECT Rno FROM tbldept
WHERE Dname = 'Electrical');

3. Display the result of Pooja
→ SELECT * FROM tblstud_info
WHERE Fname = 'Pooja';

4. Display the students detail who got maximum marks in subject 102
→ SELECT * FROM tblstud_info
WHERE Rno IN (
SELECT Rno FROM tblstud_result
WHERE S102 = (SELECT MAX(S102) FROM tblstud_res
);

5. Display the students detail who got minimum marks subject 103
→ SELECT * FROM tblstud_info
WHERE Rno IN (SELECT Rno FROM tblstud_result
WHERE S103 = (SELECT MIN(S103) FROM tblst
result)
);

6. Display the students detail who got maximum per.
→ SELECT si.Rno, si.Fname, si.Sname, sr.S101, sr.102, sr.103,
sr.104, sr.105, sr.Percentage
FROM tblstud_info si
JOIN tblstud_result sr ON si.Rno = sr.Rno
WHERE sr.Percentage =
(SELECT MAX(Percentage) FROM tblstud_result
);

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7. Display the students detail who got minimum total
→ SELECT si.Rno, si.Fname, si.Sname, sr.Sub1, sr.Sub2, sr.Sub3, sr.Sub4
sr.Sub5, sr.Total, sr.Percentage
FROM tblstud_info si
JOIN tblstud_resul sr ON si.Rno = sr.Rno
WHERE sr.Total = (SELECT MIN(Total) FROM tblstud_
result)
);

8. Display the students detail whose total is more than the average total of all students.
→ SELECT a.Rno, a.Fname, a.Sname, b.Sub1, b.Sub2, b.Sub3, b.Sub4,
b.Sub5, b.Total, b.Percentage
FROM tblstud_info a
JOIN tbstud_result b ON a.Rno = b.Rno
WHERE b.Total > (SELECT AVG(Total) FROM tblstud_result)
);

9. Display the result of students whose surname is Patel
→ SELECT s.Rno, s.Sub1, S.Sub2, S.Sub3, S.Sub4, S.Sub5, S.Total,
s.Percentage
FROM tblstud_resut s
WHERE ~~& JOIN~~ tblstud_info a ON a.Rno = s.Rno
WHERE a.Sname LIKE (SELECT Sname ~~WHERE~~
FROM tblstud_info WHERE
sname LIKE 'Patel');

10. Display the department detail where total number of students are only 3

→ SELECT d.Dno , d.Dname FROM tbldept d
JOIN tblstud_info si ON d.Dno = si.Dno
GROUP BY d.Dno, d.Dname
HAVING COUNT(si.Rno) = 3 ;

11. Display the department name of highest percentage

→ SELECT d.dname FROM tbldept.d
JOIN tblstud_info si, tblstud_result sr ON d.Dno = si.Dn
si.Rno = sr.Rno
WHERE sr.Per = (SELECT MAX(Per) FROM tblstud_resu

12. Display the students detail of civil and IT

→ SELECT si.* FROM tblstud_info si
JOIN tbldept d ON si.Dno = d.Dno
WHERE d.dname IN ('Civil', 'Information Technolo

13. Display the result for male student

→ SELECT sr.* FROM tblstud_result sr
JOIN tblstud_info si ON si.Rno = sr.Rno
WHERE si.Gender = (SELECT Gender FROM tblstu
WHERE Gender = 'M');

14. Display the students detail whose total is < 250

→ SELECT si.* , sr.* FROM tblstud_info si
JOIN tblstud_result sr ON si.Rno = sr.Rno
WHERE sr.Total < (SELECT Total FROM tblstud_resu
250 ;

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15. Display the students result whose subject 103's marks are one of the 80, 87, 95

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-> SELECT * FROM tblstud_result
   WHERE S103 IN (80, 87, 95);
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16. Display the students result whose subject 103's marks are more than 45, 69, 77

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-> SELECT * FROM tblstud_result
   WHERE S103 > GREATEST (45, 69, 77);
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17. Display the students result whos subject 103's marks are more than atleast one of 45, 69 and 77

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-> SELECT * FROM tblstud_result
   WHERE S103 > LEAST (45, 69, 77);
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18. Display the students detail whose results are available

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-> SELECT * FROM tblstud_info s
   WHERE EXISTS ( SELECT 1 FROM tblstud_result r
                  WHERE s.Rno = r.Rno );
```

19. Display the students ~~detail~~ whose results are not available.

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-> SELECT * FROM tblstud_info s
   WHERE NOT EXISTS (
         SELECT 1 FROM tblstud_result r
         WHERE s.Rno = r.Rno );
```

20. Create student table (rno, name, phone_no) insert record fro tblstud_info table

→ CREATE TABLE Student (
Rno INT PRIMARY KEY,
name VARCHAR2(200),
phone_no VARCHAR2(15)
);

→ INSERT INTO student (Rno, name, phone_no)
Select Rno, name, phone_no FROM tblstud_info;

21. Create student1 table with fields rno, total, per. Insert records from tblstud_result.

→ CREATE TABLE Student1 (
Rno INT PRIMARY KEY,
Total INT
~~PER~~ Per ~~INT~~ Decimal (5,2)
);

→ INSERT INTO Student1 (rno, total, per)
SELECT t2.Rno, t2.total, t2.per
FROM tblstud_info t1
JOIN tblstud_result t2 ON t1.Rno = t2.Rno
WHERE t2.gender = 'M';

22. Create student2 table with fields rno, name, gender. I the records from tblstud_info table who belong to th IT dept

→ CREATE TABLE Student2 (
Rno INT PRIMARY KEY,
Name VARCHAR2(50),
gender VARCHAR2(1)
);

→ INSERT INTO Student2 (rno, name, gender)
SELECT t2.Rno, t2.name, t2.gender
FROM tblstud_info t1
JOIN tbldept t2 ON t1.Dno = t2.Dno
WHERE t2.Dname = 'Information Technology';

23. Update in the student 1 table and add 10 in the per field for students from Electrical dept.

→ UPDATE Student 1
SET per = per + 10
WHERE rno IN (SELECT Dname FROM tbldept
WHERE Dname = 'Electrical');

24. Delete the records of the civil department from the student table.

→ DELETE FROM student
WHERE Rno IN (SELECT t1.Rno FROM tblstud_info t1
JOIN tbldept t2 ON t1.dno = t2.dno
WHERE t2.dname = 'Civil');

25. Update the phone number to 9988776655 in the student table for female students

→ UPDATE student
SET phone_no = '9988776655'
WHERE Rno IN (SELECT Rno FROM tblstud_info
WHERE Gender = 'F'
);

26. Delete the records of 'Female' from the Student info.

→ DELETE FROM student
WHERE Rno IN (SELECT rno FROM tblstud_info
WHERE Gender = 'F'
);

27. Display the result of the female students whose age is more than 15 years.

→ SELECT sr.* FROM tblstud_result sr
JOIN tblstud_info i ON sr.Rno = i.Rno
WHERE i.gender = 'F' AND ((CURRENT_DATE - i.Bdate)
/365 > 15;

28. Display the students result whose birth is in the last week of the month.

→ SELECT ~~s.Rno~~ s.* FROM tblstud_result s
JOIN tblstud_info i ON s.Rno = i.Rno
WHERE DAY(i.Bdate) > 24;

29 Display the names of departments where at least one student is studying.

→ SELECT DISTINCT d.Dname
FROM tbldept d
JOIN tblstud_info s ON d.Dno = s.Dno;

30 Display the department detail where not a single student is studying.

→ SELECT * FROM tbldept d
WHERE d.Dno NOT IN (SELECT DISTINCT Dno
FROM tblstud_info);

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* Index

1. Create index on dname field on tbldept table.
→ CREATE INDEX idx0 ON tbldept (Dname);

2. Create index on dno and rno fields on tblstud_info table
→ CREATE INDEX ind1 ON tblstud_info (Dno, Rno);

3. Create unique index on rno field on tblstud_result tab
→ CREATE UNIQUE INDEX idx2 ON tblstud_result (Rno);

4. Drop all above created indexes
→ Drop INDEX idx0 ON tbldept;
Drop INDEX ind1 ON tblstud_info;
Drop INDEX idx2 ON tblstud_result;

5. Display the top three student's result
→ SELECT * FROM (
SELECT x FROM tblstud_result
ORDER BY sub2 DESC, sub2 DESC, sub3 DESC
)
WHERE ROWNUM <= 3;