DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL
MA611 – 2nd Semester MCA 2024-2025
DATABASE SYSTEMS LAB

Assignment-6

NAME : Sunil Kumar Dalei
ROLL NO. : 244CA056

1. Create the following tables with the following attributes and constraints on them.

a. Employee (Fname, mname, lname, Ssn, Bdate, address, gender, salary, Super_Ssn, Dept_num)

Lname, Ssn, Dept_num should be not null

b. Department (Dept_num, Dept_name, Mgr_Ssn, Mgr_startdate)

Dept_name should be unique

c. Department_locations (Dept_num, location)

Dept_num and location both are primary key

Dept_num is foreign key

d. Project (Proj_num, Proj_name, Proj_location, Dept_num)

e. Employee_Project (Ssn, Proj_num, Hours)

f. Dependent (Ssn, Dept_name, gender, bdate, relationship)

```
CREATE TABLE Employee (
     Fname VARCHAR(50),
     Mname VARCHAR(50),
     Lname VARCHAR(50) NOT NULL,
     Ssn CHAR(9) NOT NULL,
     Bdate DATE,
     Address VARCHAR(255),
     Gender CHAR(1),
     Salary DECIMAL(10, 2),
     Super_Ssn CHAR(9),
     Dept_num INT NOT NULL,
     PRIMARY KEY (Ssn),
     FOREIGN KEY (Dept_num) REFERENCES Department(Dept_num),
     FOREIGN KEY (Super_Ssn) REFERENCES Employee(Ssn)
);

CREATE TABLE Department (
     Dept_num INT PRIMARY KEY,
     Dept_name VARCHAR(100) UNIQUE NOT NULL,
     Mgr_Ssn CHAR(9),
     Mgr_startdate DATE,
     FOREIGN KEY (Mgr_Ssn) REFERENCES Employee(Ssn)
);
```

```
CREATE TABLE Department_locations (
     Dept_num INT,
     Location VARCHAR(100),
     PRIMARY KEY (Dept_num, Location),
     FOREIGN KEY (Dept_num) REFERENCES Department(Dept_num)
);

CREATE TABLE Project (
     Proj_num INT PRIMARY KEY,
     Proj_name VARCHAR(100),
     Proj_location VARCHAR(100),
     Dept_num INT,
     FOREIGN KEY (Dept_num) REFERENCES Department(Dept_num)
);

CREATE TABLE Employee_Project (
     Ssn CHAR(9),
     Proj_num INT,
     Hours DECIMAL(5, 2),
     PRIMARY KEY (Ssn, Proj_num),
     FOREIGN KEY (Ssn) REFERENCES Employee(Ssn),
     FOREIGN KEY (Proj_num) REFERENCES Project(Proj_num)
);

CREATE TABLE Dependent (
     Ssn CHAR(9),
     Dept_name VARCHAR(100),
     Gender CHAR(1),
     Bdate DATE,
     Relationship VARCHAR(50),
     PRIMARY KEY (Ssn, Dept_name),
     FOREIGN KEY (Ssn) REFERENCES Employee(Ssn),
     FOREIGN KEY (Dept_name) REFERENCES Department(Dept_name)
);
```

2. Add two column blood group and hobbies to employee table.

```
ALTER TABLE employee ADD (b_group char(2), hobbies varchar(100));
```

3. Increase the size of column blood group to 15 to the employee table.

```
ALTER TABLE employee MODIFY (b_group char(15));
```

4. Drop column hobbies from the employee table.

```
ALTER TABLE employee DROP COLUMN hobbies;
```

5. Rename Employee Table to Employee_details.

```
ALTER TABLE employee RENAME TO employee_details;
```

6. Insert atleast five records in each table.

```
INSERT INTO Employee VALUES ('John', 'A', 'Doe', '111223333', '15-
MAR-1995', '123 Main St', 'M', 3500.00, NULL, 1, 'A+');
```

```
INSERT INTO Employee VALUES ('Jane', 'B', 'Smith', '222334555',
'20-JUL-1990', '456 Oak Ave', 'F', 4500.00, NULL, 2, 'B-');
INSERT INTO Employee VALUES ('Alice', 'C', 'Johnson', '333445666',
'11-JUN-1982', '789 Pine Blvd', 'F', 6000.00, NULL, 3, 'O+');
INSERT INTO Employee VALUES ('Bob', 'D', 'Williams', '444556777',
'29-AUG-1975', '101 Maple Rd', 'M', 5500.00, NULL, 1, 'B+');
INSERT INTO Employee VALUES ('Charlie', 'E', 'Brown', '555667888',
'17-FEB-1992', '202 Cedar St', 'M', 3000.00, NULL, 2, 'A+');


INSERT INTO Department VALUES (1, 'Marketing', '111223333', '01-
MAY-2010');
INSERT INTO Department VALUES (2, 'Sales', '222334555', '14-AUG-
2015');
INSERT INTO Department VALUES (3, 'Engineering', '333445666', '21-
SEP-2019');


INSERT INTO Department_locations VALUES (1, 'New York');
INSERT INTO Department_locations VALUES (1, 'San Francisco');
INSERT INTO Department_locations VALUES (2, 'Chicago');
INSERT INTO Department_locations VALUES (2, 'Los Angeles');
INSERT INTO Department_locations VALUES (3, 'Seattle');

INSERT INTO Project VALUES (1, 'Super', 'New York', 1);
INSERT INTO Project VALUES (2, 'TechUpgrade', 'Seattle', 3);
INSERT INTO Project VALUES (3, 'AdCampaign', 'San Francisco', 1);
INSERT INTO Project VALUES (4, 'SalesBoost', 'Los Angeles', 2);

INSERT INTO Employee_Project VALUES ('111223333', 1, 40);
INSERT INTO Employee_Project VALUES ('222334555', 3, 35);
INSERT INTO Employee_Project VALUES ('333445666', 2, 50);
INSERT INTO Employee_Project VALUES ('444556777', 4, 45);
INSERT INTO Employee_Project VALUES ('555667888', 2, 30);

INSERT INTO Dependent VALUES ('111223333', 'Marketing', 'F', '10-
MAR-2010', 'Wife');
INSERT INTO Dependent VALUES ('222334555', 'Sales', 'M', '19-AUG-
1993', 'Son');
INSERT INTO Dependent VALUES ('333445666', 'Engineering', 'F',
'22-APR-2017', 'Daughter');
INSERT INTO Dependent VALUES ('444556777', 'Marketing', 'F', '02-
JAN-2005', 'Daughter');
INSERT INTO Dependent VALUES ('555667888', 'Sales', 'M', '15-JUL-
2002', 'Son');
```

7. Give 1000 rupees bonus to each employee.

```
UPDATE employee SET salary=salary+1000;
```

8. Increase the salary of the employees having salary <5000 by 500 rupees.

```
UPDATE employee SET salary=salary+500 WHERE salary<5000;
```

9. Give 100 rupees bonus to employees having salary less than 10000 rupees and birth date

before 1990.

```
UPDATE employee SET salary=salary+100 WHERE salary<10000 and
bdate<'01-JAN-1990';
```

10. Give 100 rupees bonus to employees having salary less than 10000 rupees or birth date before 1990.

```
UPDATE employee SET salary=salary+100 WHERE salary<10000 or
bdate<'01-JAN-1990';
```

11. Give 100 rupees bonus to employees having salary between 1000 to 5000 rupees and birth date before 1990.

```
UPDATE employee SET salary=salary+100 WHERE salary BETWEEN 1000
AND 5000 AND bdate<'01-JAN-1990';
```

12. Give 100 rupees bonus to employees having salary between 1000, 3000 and 5000 rupees.

```
UPDATE employee SET salary=salary+100 WHERE salary in (1000, 3000,
5000);
```

13. Update phone number with 0000 where NULL.

```
UPDATE employee SET phone_no='0000' WHERE phone_no IS NULL;
```

14. Give 100 rupees bonus to employees having salary not between 1000 to 5000 rupees and birth date before 1990.

```
UPDATE employee SET salary=salary+100 WHERE salary NOT BETWEEN
1000 AND 5000 AND bdate < TO_DATE('01-JAN-1990', 'DD-MON-YYYY');
```

15. Give 100 rupees bonus to employees having salary between 1000, 3000 and 5000 rupees.

```
UPDATE employee SET salary=salary+100 WHERE salary in (1000, 3000,
5000);
```

16. Delete from employee the rows having bdate less than 1970.

```
DELETE FROM employee WHERE bdate < '01-JAN-1970';
```

17. List the name and age of all employees.

```
SELECT fname, mname, lname,(SYSDATE - BDATE)/365.25 as AGE from
employee;
```

18. Display the salaries offered to the employees.

```
SELECT salary FROM employee;
```

19. List the Bdate and Salary of Employee 'Smith'.

```
SELECT bdate, salary FROM employee WHERE fname LIKE 'Smith';
```

20. Find the location of Project 'SUPER'.

```
SELECT proj_location FROM project WHERE proj_name='Super';
```

21. Find the dependent details of Employee with Ssn number 482928.

```
SELECT * FROM dependent WHERE ssn='482928';
```

22. List the employees having salary > 2000 and bdate before 1/1/1990.

```
SELECT * FROM employee WHERE salary > 2000 AND bdate <
TO_DATE('01-JAN-1990', 'DD-MON-YYYY');
```

23. List the employees belonging to dept_num 1.

```
SELECT * FROM employee WHERE dept_num = 1;
```

24. List the project details of dept_num 5.

```
SELECT * FROM project WHERE dept_num = 5;
```

25. List the employee details with their department name.

```
SELECT * FROM employee JOIN department ON employee.dept_num =
department.dept_num;
```

26. List the employee details with their project names.

```
SELECT * FROM employee JOIN project ON employee.dept_num =
project.dept_num;
```

27. List the employees belonging to Marketing department.

```
SELECT employee.* FROM employee JOIN department ON
employee.dept_num = department.dept_num WHERE
department.dept_name='Marketing';
```

28. List the project details belonging of Sales department.

```
SELECT * FROM project WHERE dept_name=’Sales’;
```

29. List the dependent details of employee ‘Smith’.

```
SELECT dependent.* FROM employee JOIN dependent ON
employee.ssn=dependent.ssn AND employee.fname=’Smith’;
```

30. List the various locations of ‘Marketing’ department.

```
SELECT location FROM department join department_location on
department.dept_num=department_location.dept_num WHERE
Department.dept_name=’Marketing’;
```

31. List the employees going to ‘Surathkal’ branch.

```
SELECT employee.* FROM employee JOIN department_locations ON
employee.dept_num=department_locations.dept_num AND
department_locations.location=’Surathkal’;
```

32. List the employees in the descending order of their salary.

```
SELECT * FROM employee ORDER BY salary DESC;
```

33. List the dependents in the descending order of their names.

```
SELECT dependent.* FROM dependent JOIN employee ON
dependent.ssn=employee.ssn ORDER BY employee.fname DESC;
```