**ASSIGNMENT**



**Session 2023 - 2027**

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**Course:**

CSC-104 Database

Department of Computer Science

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# **Question 1**

* **Creating Database:**

CREATE DATABASE Assignment;

* **Creating Tables:**

USE Assignment;

CREATE TABLE Department

(

dep\_id INT PRIMARY KEY,

dep\_name VARCHAR(20),

dep\_location VARCHAR(15)

);

CREATE TABLE Salary\_grade

(

grade INT PRIMARY KEY,

min\_salary INT,

max\_salary INT

);

CREATE TABLE Employee

(

emp\_id INT PRIMARY KEY,

emp\_name VARCHAR(15),

job\_name VARCHAR(10),

manager\_id INT,

hire\_date DATE,

salary DECIMAL(10,2),

commission DECIMAL(7,2),

dep\_id INT,

FOREIGN KEY (dep\_id) REFERENCES Department(dep\_id)

);

* **Inserting Data in Tables:**

use Assignment;

-- INSERT INTO Department

INSERT INTO dbo.Department

(dep\_id, dep\_name, dep\_location)

VALUES

(1001, 'FINANCE', 'SYDNEY'),

(2001, 'AUDIT', 'MELBOURNE'),

(3001, 'MARKETING', 'PERTH'),

(4001, 'PRODUCTION', 'BRISBANE');

-- INSERT INTO Employee

INSERT INTO dbo.Employee

(emp\_id, emp\_name, job\_name, manager\_id, hire\_date, salary, commission, dep\_id)

VALUES

(68319, 'KAYLING', 'PRESIDENT', NULL, '1991-11-18', 6000.00, NULL, 1001),

(66928, 'BLAZE', 'MANAGER', 68319, '1991-05-01', 2750.00, NULL, 3001),

(67832, 'CLARE', 'MANAGER', 68319, '1991-06-09', 2550.00, NULL, 1001),

(65646, 'JONAS', 'MANAGER', 68319, '1991-04-02', 2957.00, NULL, 2001),

(67858, 'SCARLET', 'ANALYST', 65646, '1997-04-19', 3100.00, NULL, 2001),

(69062, 'FRANK', 'ANALYST', 65646, '1991-12-03', 3100.00, NULL, 2001),

(63679, 'SANDRINE', 'CLERK', 69062, '1990-12-18', 900.00, NULL, 2001),

(64989, 'ADELYN', 'SALESMAN', 66928, '1991-02-20', 1700.00, 400.00, 3001),

(65271, 'WADE', 'SALESMAN', 66928, '1991-02-22', 1350.00, 600.00, 3001),

(66564, 'MADDEN', 'SALESMAN', 66928, '1991-09-28', 1350.00, 1500.00, 3001),

(68454, 'TUCKER', 'SALESMAN', 66928, '1991-09-08', 1600.00, 0.00, 3001),

(68736, 'ADNRES', 'CLERK', 67858, '1997-05-23', 1200.00, NULL, 2001),

(69000, 'JULIUS', 'CLERK', 66928, '1991-12-03', 1050.00, NULL, 3001),

(69324, 'MARKER', 'CLERK', 67832, '1992-01-23', 1400.00, NULL, 1001);

INSERT INTO dbo.salary\_grade

(grade, min\_salary, max\_salary)

VALUES

(1, 800, 1300),

(2, 1301, 1500),

(3, 1501, 2100),

(4, 2101, 3100),

(5, 3101, 9999);

# **Question 2:**

* **Writing queries:**

**--1**

SELECT \* FROM Employee;

**--2**

SELECT salary FROM Employee;

**--3**

SELECT DISTINCT job\_name FROM Employee;

**--4**

SELECT emp\_name,salary \* 1.15 AS increased\_salary\_in\_dollars FROM employee;

**--5**

SELECT emp\_name + ' & ' + job\_name AS employee\_and\_job FROM employee;

**--6**

SELECT emp\_name + '(' + job\_name + ')' AS Employee FROM employee;

**--7**

SELECT emp\_id, emp\_name,salary,hire\_date FROM Employee

WHERE FORMAT(hire\_date, 'MMMM d, yyyy') = 'February 22, 1991';

**--8**

SELECT LEN(emp\_name) AS EmpNameLenght,emp\_name FROM Employee;

**--9**

SELECT emp\_id,salary,commission FROM employee;

**--10**

SELECT DISTINCT dep\_id,job\_name FROM Employee AS E

**--11**

SELECT \* FROM Employee WHERE dep\_id <> 2001;

**--12**

SELECT \* FROM Employee WHERE dep\_id < 1991;

**--13**

SELECT AVG(salary) AS AverageSalary FROM Employee

WHERE job\_name='analyst';

**--14**

SELECT \* FROM Employee WHERE emp\_name ='BLAZE';

**--15**

SELECT \* FROM Employee WHERE commission > salary;

**--16**

SELECT \* FROM Employee WHERE ( salary + (salary \*2.5)) > 3000;

**--17**

SELECT emp\_name FROM Employee WHERE LEN(emp\_name) = 6;

**--18**

SELECT \* FROM Employee WHERE MONTH(hire\_date) = 1;

**--19**

SELECT e.emp\_name + ' works for ' + m.emp\_name AS relationship

FROM Employee e JOIN Employee m ON e.manager\_id = m.emp\_id;

**--20**

SELECT \* FROM Employee WHERE job\_name ='CLERK';

**--21**

SELECT \* FROM Employee WHERE DATEDIFF(YEAR, hire\_date, GETDATE()) > 27;

**--22**

SELECT \* FROM Employee WHERE salary < 3500;

**--23**

SELECT emp\_name,job\_name,salary FROM Employee WHERE job\_name ='ANALYST';

**--24**

SELECT \* FROM Employee WHERE YEAR(hire\_date) = '1991';

**--25**

SELECT emp\_id,emp\_name,hire\_date,salary FROM Employee

WHERE hire\_date < '1991-04-01';

**--26**

SELECT emp\_name, job\_name

FROM Employee

WHERE manager\_id IS NULL OR manager\_id = '';

**--27**

SELECT \* FROM Employee WHERE hire\_date = '1991-05-01';

**--28**

SELECT emp\_id,emp\_name,salary,DATEDIFF(YEAR,hire\_date,GETDATE()) AS Experience

FROM Employee WHERE manager\_id = '68319';

**--29**

SELECT emp\_id,emp\_name,salary,DATEDIFF(DAY,hire\_date,GETDATE()) AS Experience

FROM Employee WHERE salary>100;

**--30**

SELECT emp\_name FROM Employee

WHERE hire\_date <= '2012-01-01' AND DATEDIFF(YEAR,hire\_date,GETDATE()) >= 8;

**--31**

SELECT \* FROM Employee WHERE salary % 2 <>0;

**--32**

SELECT \* FROM Employee WHERE LEN(CAST(salary AS VARCHAR)) = 3;

**--33**

SELECT \* FROM Employee WHERE MONTH(hire\_date) = 4;

**--34**

SELECT \*FROM Employee WHERE DAY(hire\_date) < 19;

**--35**

SELECT \*FROM Employee

WHERE job\_name = 'SALESMAN'

AND DATEDIFF(MONTH,hire\_date,GETDATE()) > 10;

**--36**

SELECT \*FROM Employee

WHERE dep\_id = '3001' OR dep\_id = '1001'

AND YEAR(hire\_date) = '1991';

**--37**

SELECT \*FROM Employee WHERE dep\_id = '2001' OR dep\_id = '1001';

**--38**

SELECT \*FROM Employee WHERE dep\_id = '2001' AND job\_name = 'CLERK';

**--39(a)**

SELECT emp\_id,emp\_name,salary,job\_name FROM Employee

WHERE commission < salary AND (salary+commission)<34000;

**--39(b)**

SELECT emp\_id,emp\_name,salary,job\_name FROM Employee

WHERE job\_name = 'SALESMAN' AND dep\_id = '3001';

**--40**

SELECT emp\_id,emp\_name,salary,job\_name FROM Employee

WHERE job\_name = 'CLERK' OR job\_name ='MANAGER';

**--41**

SELECT \* FROM Employee WHERE MONTH(hire\_date)<>2;

**--42**

SELECT \* FROM Employee WHERE YEAR(hire\_date) = 1991;

**--43**

SELECT \* FROM Employee WHERE YEAR(hire\_date) = 1991 AND MONTH(hire\_date) = 6;

**--44**

SELECT \* FROM Employee WHERE salary \* 12 BETWEEN 24000 AND 50000;

**--45**

SELECT \* FROM Employee WHERE hire\_date IN ('1991-05-01', '1991-02-20', '1991-12-03');

**--46**

SELECT \* FROM Employee WHERE manager\_id IN (63679, 68319, 66564, 69000);

**--47**

SELECT \* FROM Employee WHERE hire\_date > '1991-06-30' AND YEAR(hire\_date) = 1991;

**--48**

SELECT \* FROM Employee WHERE YEAR(hire\_date) BETWEEN 1990 AND 1999;

**--49**

SELECT \* FROM Employee WHERE job\_name = 'MANAGER' AND dep\_id IN (1001, 2001);

**--50**

SELECT \* FROM Employee WHERE MONTH(hire\_date) = 2 AND salary BETWEEN 1001 AND 2000;

**--51**

SELECT \* FROM Employee WHERE YEAR(hire\_date) <> 1991;

**--52**

SELECT e.emp\_id, e.emp\_name, e.job\_name, e.manager\_id, e.hire\_date, e.salary, e.commission, d.dep\_id,

d.dep\_name

FROM Employee e INNER JOIN Department d ON e.dep\_id = d.dep\_id;

**--53**

SELECT emp\_name, job\_name, salary \* 12 AS Annual\_Salary, dep\_id, S.grade

FROM employee ,Salary\_grade AS S

WHERE salary \* 12 >= 60000 OR job\_name != 'ANALYST';

**--54**

SELECT e.emp\_name, e.job\_name, e.manager\_id, e.salary, m.emp\_name AS manager\_name, m.salary AS manager\_salary

FROM Employee e INNER JOIN Employee m ON e.manager\_id = m.emp\_id WHERE e.salary > m.salary;

**--55**

SELECT emp\_name, E.dep\_id, salary, commission FROM Employee AS E

JOIN Department AS D ON E.dep\_id=D.dep\_id

WHERE salary BETWEEN 2000 AND 5000 AND dep\_location = 'PERTH';

**--56**

SELECT S.grade, emp\_name FROM employee AS E,Salary\_grade AS S

WHERE (dep\_id IN (1001, 3001) AND S.grade != 4 AND hire\_date < '1992-12-31');

**--57**

SELECT e.emp\_id, e.emp\_name, e.job\_name, e.manager\_id, e.hire\_date, e.salary, e.dep\_id, m.emp\_name AS manager\_name

FROM Employee e

INNER JOIN Employee m ON e.manager\_id = m.emp\_id

WHERE m.emp\_name = 'JONAS';

**--58**

SELECT emp\_name, salary FROM employee

WHERE salary = (SELECT MAX(salary) FROM employee WHERE salary =

(SELECT salary FROM employee WHERE emp\_name = 'FRANK'));

**--59**

SELECT \* FROM employee WHERE (job\_name IN ('MANAGER', 'ANALYST')

AND salary BETWEEN 2000 AND 5000 AND commission IS NULL);

**--60**

SELECT emp\_id, emp\_name,E.dep\_id, salary, dep\_location

FROM Employee AS E

JOIN department ON E.dep\_id = department.dep\_id

WHERE dep\_location IN ('PERTH', 'MELBOURNE')

AND DATEDIFF(MONTH, hire\_date, GETDATE()) > 10;

**--61**

SELECT emp\_id, emp\_name, E.dep\_id, salary, dep\_location

FROM Employee AS E

JOIN Department AS D ON D.dep\_id = E.dep\_id

WHERE YEAR(E.hire\_date) = 1991

AND (dep\_location = 'SYDNEY' OR dep\_location = 'MELBOURNE')

AND E.salary BETWEEN 2000 AND 5000;

**--62**

SELECT E.dep\_id,emp\_id,emp\_name,salary,dep\_name,dep\_location,S.grade

FROM Employee AS E,Department AS D,Salary\_grade AS S

WHERE dep\_name='MARKETING'

AND (dep\_location ='MELBOURNE' OR dep\_location ='PERTH')

AND grade IN(3,4,5)

AND DATEDIFF(YEAR,hire\_date,GETDATE())>=25;

**--63**

SELECT E.\* FROM Employee AS E

JOIN Employee AS M ON E.manager\_id=M.emp\_id

WHERE E.hire\_date>M.hire\_date;

**--64**

SELECT E.\*,S.grade,salary FROM Employee AS E ,Salary\_grade AS S

WHERE grade=4

AND salary BETWEEN S.max\_salary AND S.min\_salary;

**--65**

SELECT emp\_name FROM Employee AS E

JOIN Department AS D ON E.dep\_id = D.dep\_id

WHERE YEAR(hire\_date) = 1991

AND emp\_name NOT IN ('MARKER', 'ADELYN')

AND dep\_name NOT IN ('PRODUCTION', 'AUDIT');

**--66**

SELECT \* FROM Employee

ORDER BY salary ASC;

**--67**

SELECT \* FROM Employee

ORDER BY dep\_id ASC, job\_name DESC;

**--68**

SELECT DISTINCT job\_name FROM Employee

ORDER BY job\_name DESC;

**--69**

SELECT

emp\_id,

emp\_name,

salary AS monthly\_salary,

salary / 30 AS daily\_salary,

12 \* salary AS annual\_salary

FROM Employee

ORDER BY annual\_salary ASC;

**--70**

SELECT \*

FROM Employee

WHERE job\_name IN ('CLERK', 'ANALYST')

ORDER BY job\_name DESC;

**--71**

SELECT dep\_location

FROM Employee

JOIN Department ON Employee.dep\_id = Department.dep\_id

WHERE emp\_name = 'CLARE';

**--72**

SELECT \*

FROM Employee

WHERE hire\_date IN ('1991-05-01', '1991-12-03', '1990-01-19')

ORDER BY hire\_date ASC;

**--73**

SELECT \*

FROM Employee

WHERE salary < 1000

ORDER BY salary ASC;

**--74**

SELECT \*

FROM Employee

ORDER BY salary ASC

**--75**

SELECT \*

FROM Employee

ORDER BY job\_name ASC, emp\_id DESC;

**--76**

SELECT DISTINCT job\_name

FROM Employee

WHERE dep\_id IN (2001, 3001)

ORDER BY job\_name DESC;

**--77**

SELECT \*

FROM Employee

WHERE job\_name NOT IN ('PRESIDENT', 'MANAGER')

ORDER BY salary ASC;

**--78**

SELECT \*

FROM Employee

WHERE 12 \* salary < 25000

ORDER BY salary ASC;

**--79**

SELECT emp\_id, emp\_name, 12 \* salary AS annual\_salary, salary / 30 AS daily\_salary

FROM Employee

WHERE job\_name = 'SALESMAN'

ORDER BY annual\_salary ASC;

**--80**

SELECT emp\_id, emp\_name, hire\_date, GETDATE() AS currentDate, DATEDIFF(YEAR,hire\_date,GETDATE()) AS experience

FROM Employee

ORDER BY experience ASC;

**--81**

SELECT \*

FROM Employee

WHERE hire\_date >= '1991-07-01'

ORDER BY job\_name ASC;

**--82**

SELECT e.\*, d.dep\_location

FROM Employee e

JOIN Department d ON e.dep\_id = d.dep\_id

WHERE d.dep\_name IN ('FINANCE', 'AUDIT')

ORDER BY d.dep\_id ASC;

**--83**

SELECT E.\*,S.grade FROM Employee AS E, Salary\_grade AS S

ORDER BY S.grade ASC;

**--84**

SELECT emp\_name,job\_name,dep\_id,salary,S.grade

FROM Employee AS E, Salary\_grade AS S

ORDER BY dep\_id ASC;

**--85**

SELECT emp\_name,job\_name,D.dep\_name,salary,S.grade

FROM Employee AS E, Salary\_grade AS S, Department AS D

WHERE emp\_name<>'CLERK'

ORDER BY salary DESC;

**--86**

SELECT emp\_name,job\_name,D.dep\_name,salary,S.grade

FROM Employee AS E, Salary\_grade AS S, Department AS D

WHERE emp\_name<>'CLERK'

ORDER BY salary DESC;

**--87**

SELECT e.\*, d.dep\_name, d.dep\_location

FROM Employee e

JOIN Department d ON e.dep\_id = d.dep\_id;

**--88**

SELECT E.\* FROM Employee AS E

JOIN Employee AS M ON E.manager\_id=M.emp\_id

WHERE E.hire\_date>M.hire\_date;

**--89**

SELECT emp\_id, emp\_name, salary, dep\_id

FROM Employee

WHERE dep\_id = 1001

ORDER BY salary ASC;

**--90**

SELECT MAX(salary) AS highest\_salary

FROM Employee;

**--91**

SELECT job\_name,

AVG(salary) AS average\_salary

AVG(salary + COALESCE(commission, 0)) AS average\_total\_remuneration

FROM Employee

GROUP BY job\_name;

**--92**

SELECT job\_name,

SUM(12 \* salary) AS total\_annual\_salary

FROM Employee

WHERE YEAR(hire\_date) = 1991

GROUP BY job\_name;

**--93**

SELECT e.emp\_id, e.emp\_name, e.dep\_id, d.dep\_location

FROM Employee e

JOIN Department d ON e.dep\_id = d.dep\_id;

**--94**

SELECT e.emp\_id, e.emp\_name, e.dep\_id, d.dep\_location, d.dep\_name

FROM Employee e

JOIN Department d ON e.dep\_id = d.dep\_id

WHERE e.dep\_id IN (1001, 2001);

**--95**

SELECT emp\_id, emp\_name, salary, S.grade

FROM Employee AS E , Salary\_grade AS S

WHERE salary BETWEEN S.max\_salary AND S.min\_salary;

**--96**

SELECT manager\_id, COUNT(\*) AS num\_employees

FROM Employee

WHERE manager\_id IS NOT NULL

GROUP BY manager\_id

ORDER BY manager\_id ASC;

**--97**

SELECT e.dep\_id, e.job\_name, COUNT(\*) AS num\_employees

FROM Employee e

GROUP BY e.dep\_id, e.job\_name;

**--98**

SELECT dep\_id, COUNT(\*) AS num\_employees

FROM Employee

GROUP BY dep\_id

HAVING COUNT(\*) >= 2;

**--99**

SELECT S.grade,COUNT(E.emp\_id)AS Numbes\_OF\_Employees,MAX(salary) AS MAX\_Salary

FROM Salary\_grade AS S,Employee AS E

GROUP BY S.grade;

**--100**

SELECT dep\_name,S.grade,COUNT(emp\_id)AS Numbes\_OF\_Employees

FROM Salary\_grade AS S, Employee AS E,Department AS D

WHERE E.job\_name = 'SALESMAN'

GROUP BY D.dep\_name, S.grade

HAVING COUNT(\*) >= 2;