**Midterm Exam (MySQL)**

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| Q1. Write the difference between Primary Key and Composite Primary Key.  ANS:   * Primary Key: Primary key is a unique identifier for a single column * Primary composite key: This is also act as primary key but this is the combination of columns means more than a column. |
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| Q2. Write the difference between using JOIN Query and not using JOIN query.  ANS:  # JOIN query helps to get data from different table in efficient way and in less complexity, and if we want to get simple data then it is ok to not using join query. |
| Q3. Create a Employee and a Departments Table.  Ans:  CREATE TABLE Employees (      EmployeeID INT PRIMARY KEY ,      FirstName VARCHAR(50) NOT NULL,      LastName VARCHAR(50) NOT NULL,      DateOfBirth DATE NOT NULL,      DepartmentID INT NOT NULL,      Salary DECIMAL(10, 2) NOT NULL,      CONSTRAINT FK\_Department\_Employees          FOREIGN KEY (DepartmentID)          REFERENCES Departments(DepartmentID)  );  CREATE TABLE Departments (      DepartmentID INT PRIMARY KEY,      DepartmentName VARCHAR(50) NOT NULL  ); |
| Q4. Write SQL Query to get the second max salary.  Ans:  SELECT DISTINCT SALARY  FROM EMPLOYEES  WHERE SALARY = (SELECT MAX(SALARY)  FROM EMPLOYEES  WHERE salary < (SELECT MAX(SALARY)  FROM EMPLOYEES)  ); |
| Q5. Write SQL Query to show the department names and the average salary of the departments  Ans:  SELECT DEP.DEPARTMENT\_NAME,  AVG(EMP.SALARY) as 'Avarage\_Salary(Department-wise)'  FROM EMPLOYEES as Emp  JOIN DEPARTMENTS as Dep  ON EMP.DEPARTMENT\_ID = DEP.DEPARTMENT\_ID  GROUP BY DEP.DEPARTMENT\_NAME |
| Q6. Illustrate the INNER, LEFT, RIGHT, SELF Joins  ANS:   * Inner Join : An INNER JOIN returns only the rows that have matching values in both tables. * LEFT JOIN : A LEFT JOIN returns all rows from the left table (the first table mentioned) and the matched rows from the right table. If there is no match, NULL values are returned for columns from the right table. * RIGHT JOIN : A RIGHT JOIN is essentially the opposite of a LEFT JOIN. It returns all rows from the right table and the matched rows from the left table, with NULL values for columns from the left table when there is no match. * SELF JOIN : A SELF JOIN is used when you want to join a table with itself. It's often used to find relationships within the same table. |
| Q7. What is a subquery? Write with an example.  Ans:  Subquery: A subquery is a nested query where more SQL query is embedded with a query.  Example:  SELECT FirstName, LastName  FROM EMPLOYEES  WHERE Salary > (  SELECT AVG(Salary)  FROM EMPLOYEES  ); |
| Q8. Show the names of the employees who get less salary than Steven.  Ans:  SELECT \*  FROM EMPLOYEES  WHERE SALARY < (SELECT SALARY  FROM EMPLOYEES  WHERE FIRST\_NAME = 'Steven')   * I FOUND TWO PERSON NAMED ‘’STEVEN’’ SO I USED AVG   SELECT \*  FROM EMPLOYEES  WHERE SALARY < (SELECT AVG(SALARY)  FROM EMPLOYEES  WHERE FIRST\_NAME = 'Steven') |
| Q9. Count the number of employees of each job type  Ans:  SELECT job\_title, COUNT(\*)  FROM JOBS  GROUP BY job\_title; |
| Q10. Show the names of Departments which doesn’t have any employees.  Ans:  SELECT DEPARTMENT\_NAME  FROM DEPARTMENTS  LEFT JOIN EMPLOYEES  ON DEPARTMENTS.DEPARTMENT\_ID = EMPLOYEES.DEPARTMENT\_ID  WHERE EMPLOYEES.DEPARTMENT\_ID IS NULL; |