DATABASE MANAGEMENT SYSTEM

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Database Management Systems are software systems used to store, retrive, and run queries on data. A DBMS serves as an interface between an end-user and a database, allowing users to create, read, update, and delete data in the database.

EmployeeInfo Table:

EmpID	*EmpFname*	*EmpLname*	*Department*	*Project*	*Address*	*DOB*	*Gender*
1	*Sanjay*	*Mehra*	*HR*	*P1*	*Hyderabad(HYD)*	*01/12/1976*	*M*
2	*Ananya*	*Mishra*	*Admin*	*P2*	*Delhi(DEL)*	*02/05/1968*	*F*
3	*Rohan*	*Diwan*	*Account*	*P3*	*Mumbai(BOM)*	*01/01/1980*	*M*
4	*Sonia*	*Kulkarni*	*HR*	*P1*	*Hyderabad(HYD)*	*02/05/1992*	*F*

5	*Ankit*	*Kapoor*	*Admin*	*P2*	*Delhi(DEL)*	*03/07/1994*	*M*

EmployeePosition Table:

EmpID	*EmpPosition*	*DateOfJoining*	*Salary*
1	*Manager*	*01/05/2022*	*500000*
2	*Executive*	*02/05/2022*	*75000*
3	*Manager*	*01/05/2022*	*90000*
2	*Lead*	*02/05/2022*	*85000*
1	*Executive*	*01/05/2022*	*300000*

Questions:

01. *Write a query to fetch the EmpFname from the EmployeeInfo table in the upper case and use the ALIAS name as EmpName.*

Query:

```
SELECT UPPER(EmpFname) AS EmpName
FROM EmployeeInfo;
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02.*Write a query to fetch the number of employees working in the department 'HR'.*

Query:

SELECT COUNT(*) FROM EmployeeInfo WHERE Department = 'HR';

03.*Write a query to get the current date.*

Query:

SELECT CURDATE();

04. *Write a query to retrieve the first four characters of EmpLname from the EmployeeInfo table.*

Query:

SELECT LEFT(EmpLname, 4) FROM EmployeeInfo;

05. *Write a query to fetch only the place name(string before brackets) from the Address column of EmployeeInfo table.*

Query:

SELECT SUBSTRING_INDEX(Address, '(', 1) FROM EmployeeInfo;

06. *Write a query to create a new table that consists of data and structure copied from the other table.*

Query:

CREATE TABLE NewEmployeeInfo AS SELECT * FROM EmployeeInfo;

07. *Write query to find all the employees whose salary is between 50000 to 100000.*

Query:

SELECT * FROM EmployeePosition WHERE Salary BETWEEN 50000 AND 100000;

08. *Write a query to find the names of employees that begin with 'S'*

Query:

SELECT EmpFname, EmpLname FROM EmployeeInfo WHERE EmpFname LIKE 'S%';

09. *Write a query to fetch top N records.*

Query:

SELECT * FROM EmployeeInfo LIMIT 5;

10. *Write a query to retrieve the EmpFname and EmpLname in a single column as "FullName". The first name and the last name must be separated with space.*

Query:

SELECT CONCAT(EmpFname, ' ', EmpLname) AS FullName FROM EmployeeInfo;

11. *To Find second and Third Highest salary in a table?*

Query:

SELECT DISTINCT Salary FROM EmployeePosition ORDER BY Salary DESC LIMIT 2, 1;

12. *Explain with example*

Unique Key:

A unique key ensures that the values in the specified column(s) are unique across all records in the table, but it may allow NULL values. It enforces uniqueness but doesn't enforce the non-null constraint.

For example, an email address column in a user table can have a unique key to ensure that no two users have the same email address, but it may allow NULL values for users who haven't provided an email address.

Primary Key:

A primary key is a special type of unique key that uniquely identifies each record in a table and enforces both uniqueness and the non-null constraint. It can be used to identify a specific row uniquely.

For example, the EmpID in the EmployeeInfo table can be a primary key.

Foreign Key:

A foreign key is a column or set of columns in one table that refers to the primary key of another table. It enforces referential integrity, ensuring that the values in the foreign key column(s) exist in the referenced table's primary key column(s).

For example, the EmpID in the EmployeePosition table could be a foreign key that references the EmpID in the EmployeeInfo table, establishing a relationship between employee positions and employee information.