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Batch: Data Analytics Nov Live Batch

Assignment 1: SQL Basics

Q1. Create a New Database and Table for Employees

Task: Create a new database named company_db and Create a table named employees with the following columns:

Ans: Query:

```
Create Database Company_db;
```

```
Use Company_db;
```

```
Create Table employees (
```

```
employee_id INT Primary Key, first_name VARCHAR(50),
```

```
last_name VARCHAR(50), department VARCHAR(50),
```

```
salary INT, hire_date Date );
```

Q2. Insert Data into Employees Table

Task: Insert the following sample records into the employees table

Ans:

```
insert into employees
```

```
values(101,'Amit','Sharma','HR',50000,'2020-01-15');
```

```
insert into employees
```

```
values(102,'Riya','Kapoor','Sales',75000,'2019-03-22');
```

```
insert into employees
```

```
values(103,'Raj','Mehta','IT',90000,'2018-07-11');
```

```
insert into employees
```

```
values(104,'Neha','Verma','IT',85000,'2021-09-01');
```

```
insert into employees
```

```
values(105,'Arjun','Singh','Finance',60000,'2022-02-10');
```

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Q3. Display All Employees Records Sorted by Salary (Lowest to Highest)

Ans:

Select * from employees order by Salary asc;

Q4. Show Employees Sorted by Department (A–Z) and Salary (High → Low)

Ans:

Select * from employees order by department asc , salary desc;

Q5. List All Employees in the IT Department, Ordered by Hire Date (Newest First)

Ans:

select * from employees where department = 'IT' order by hire_date desc;

Q6. Create and Populate a Sales Table

Task: Create a table sales to track sales data:

Ans:

Create table sales(

sale_id int auto_increment primary key,

customer_name varchar(30),

amount INT,

sales_date date);

insert into sales(customer_name, amount, sales_date)

values('Aditi',1500,'2024-08-01');

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```
insert into sales(customer_name, amount, sales_date)
values('Rohan',2200,'2024-08-03');
```

```
insert into sales(customer_name, amount, sales_date)
values('Aditi',3500,'2024-09-05');
```

```
insert into sales(customer_name, amount, sales_date)
values('Meena',2700,'2024-09-15');
```

```
insert into sales(customer_name, amount, sales_date)
values('Rohan',4500,'2024-09-25');
```

```
select*from sales;
```

Q7. Display All Sales Records Sorted by Amount (Highest → Lowest)

Hint: Use ORDER BY amount DESC

Ans:

```
select* from sales order by amount desc;
```

Q8. Show All Sales Made by Customer “Aditi”

Hint: Use WHERE customer_name = 'Aditi'.

Ans:

```
select * from sales where customer_name ='Aditi';
```

Q9. What is the Difference Between a Primary Key and a Foreign Key?

Ans:

Basis	Primary Key	Foreign Key
Meaning	Uniquely identifies each record in a table	Refers to the primary key of another table
Uniqueness	Must be unique	Can have duplicate values
Null Values	Cannot be null	Can be null

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Number per table	Only one primary key	Can have multiple foreign key
Table Relation	Used in the same table	Used to connect two tables

Q10: What Are Constraints in SQL and Why Are They Used?

Ans:

Constraints:

Constraints are **rules applied on table columns** to control the type of data that can be stored in a database table.

Why Are Constraints Used?

Constraints are used to:

- Prevent **invalid data** from being inserted
- Maintain **data integrity**
- Enforce **business rules**
- Avoid **duplicate or wrong entries**