

Part 1: MySQL Practicals (The Digital Diary)

Explain that MySQL is a system for storing information neatly in tables, just like a physical register.

Practical 1: DDL Commands (Creating the Diary's Structure)

- **Simple Concept:** This is about **building the empty diary**. Before you can write in it, you need to create the diary itself and define its columns, like Roll No., Name, and City. You are defining the **structure**. DDL stands for **Data Definition Language**.
- **How to Explain:** "Think of DDL as the first step: building the container. We are telling the computer what our register will look like and what columns it will have. The main command for this is CREATE TABLE, which is like drawing the columns on a blank page."
- **Notes (The Command to Remember):**

SQL

```
CREATE TABLE Student (  
    roll_no INT PRIMARY KEY,  
    stud_name VARCHAR(50),  
    class VARCHAR(10),  
    city VARCHAR(20)  
);
```

- **Key Word: CREATE** (to build the structure).

Practical 2: DML Commands (Writing in the Diary)

- **Simple Concept:** Now that the diary and its columns are ready, you can start **filling in the information** (the actual data). You are manipulating or managing the data inside the table. DML stands for **Data Manipulation Language**.
- **How to Explain:** "DML is the next step: writing inside the diary we just created. The INSERT command is used to add new rows of information, like adding a new student's details. The SELECT command is used to look at the data we've entered, like opening the diary to read it."
- **Notes (The Commands to Remember):**
 - To add data:

SQL

```
INSERT INTO Student (roll_no, stud_name, class, city) VALUES (101, 'Rahul Sharma', 'TYBCOM', 'Mumbai');
```

- To see all the data:

SQL

```
SELECT * FROM Student;
```

- **Key Words:** **INSERT** (to add data), **SELECT** (to view data).

Practical 3: Subquery (A Question Inside a Question)

- **Simple Concept:** This is for asking a **complex, two-part question**. To get the final answer, you first need to ask and get the answer to a smaller, inner question.
- **How to Explain:** "Imagine you need to find all students who scored more than the class average. This is a two-step problem.
 1. First, you need to find out: 'What *is* the average mark?' This is your inner question, or **subquery**.
 2. Then, you ask the main question: 'Now, show me all the students whose marks are greater than *that* average.' A subquery is simply a SELECT statement written inside another SELECT statement."
- **Notes (The Command to Remember):**

SQL

SELECT stud_name, marks

FROM Student

WHERE marks > (SELECT AVG(marks) FROM Student);

- **Key Word: Subquery** (a query nested inside another).

Part 2: Excel Practicals (The Magical Calculator)

Explain that in Excel, every formula is a command that starts with an **equal sign (=)** to tell Excel to calculate something.

Practical 4: Financial Functions (Bank and Loan Calculator)

- **Simple Concept:** These are specialized formulas that act like a financial calculator, perfect for **loan, investment, and banking calculations**.
- **How to Explain:** "Excel has built-in formulas for complex money matters."
 - **=PV(rate, nper, pmt)** (Present Value): This tells you the **today's value** of a future amount of money. For a loan, this is your principal amount.
 - **=FV(rate, nper, pmt)** (Future Value): This tells you what an investment will be worth in the **future**.
 - **=PPMT(rate, per, nper, pv)**: This calculates the **Principal Payment** part of an EMI. It's the amount that actually reduces your original loan.
 - **=IPMT(rate, per, nper, pv)**: This calculates the **Interest Payment** part of an EMI. This is the amount you pay as interest for that period."
- **Key Words:** **PV** (Present Value), **FV** (Future Value), **PPMT** (Principal part), **IPMT** (Interest part).

Practical 5: Mathematical & Statistical Functions (Basic School Math)

- **Simple Concept:** These are for doing **everyday math and stats** on a list of numbers, like finding the total, average, or the highest/lowest value.
- **How to Explain:** "This is just like using a calculator but much faster for a list of numbers. You give it a range of cells, and it does the math."
 - **=SUM(range):** Adds up all the numbers in the list to give a **total**.
 - **=AVERAGE(range):** Calculates the **average** of all the numbers.
 - **=MAX(range):** Finds the **highest** (maximum) number in the list.
 - **=MIN(range):** Finds the **lowest** (minimum) number in the list.
 - **=COUNT(range):** **Counts** how many cells in the list contain numbers."
- **Key Words:** SUM, AVERAGE, MAX, MIN, COUNT.

Practical 6: Depreciation Function (Value Decrease Calculator)

- **Simple Concept:** This calculates how an asset's value (like a phone, car, or machine) **decreases over time** due to use and age.
- **How to Explain:** "When you buy a new car for ₹5 lakh, it's not worth that much a year later. The amount its value has dropped is called **depreciation**. Excel can calculate this automatically. The simplest method is **SLN (Straight-Line Depreciation)**, which assumes the asset loses the same amount of value every single year."
- **Notes (The Formula to Remember):** =SLN(cost, salvage, life)
 - **cost:** The original price of the asset.
 - **salvage:** The asset's value at the end of its life.
 - **life:** How many years the asset will be used.
- **Key Word: Depreciation** (the decrease in an asset's value).

Practical 7: Aggregate Function (Summary Report Calculator)

- **Simple Concept:** To **aggregate** means to collect many individual values and combine them into a single, meaningful **summary** value.
- **How to Explain:** "This sounds complex, but it's actually the same as the math functions in Practical 5. 'Aggregate' is just a fancy word for 'summarize'. If you have a list of sales from 100 different customers, using =SUM() to get the 'Total Sales' is an aggregate function. You are summarizing 100 numbers into one number. So, this practical is about using functions like SUM, AVERAGE, and COUNT to get a summary of a large dataset."
- **Key Word: Aggregate** (to summarize data).