

TYBCOM Information Technology Practical File

Practical 1: MySQL Practical for Creating Tables and Executing DDL Commands

- **Aim:** To create a new table using DDL commands in MySQL.
- **Theory: DDL (Data Definition Language)** commands are used to define or modify the database structure. The main DDL commands are:
 - CREATE TABLE: Used to create a new table.
 - ALTER TABLE: Used to modify an existing table (add, delete, or modify columns).
 - DROP TABLE: Used to delete a table.
- **Query:** We will create a Student table with columns for Roll Number, Name, Class, and City.

SQL

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

To verify the table was created, you can use the DESCRIBE command:

SQL

```
DESC Student;
```

Output: The output for the DESC Student; command will look like this:

Field	Type	Null	Key	Default	Extra
roll_no	int	NO	PRI	NULL	
stud_name	varchar(50)	YES		NULL	
class	varchar(10)	YES		NULL	
city	varchar(20)	YES		NULL	

Practical 2: MySQL Practical for Creating Tables and DML Commands

- **Aim:** To insert and view data in a table using DML commands.
- **Theory: DML (Data Manipulation Language)** commands are used for managing data within tables. The main DML commands are:
 - INSERT: Adds new rows of data into a table.
 - UPDATE: Modifies existing rows in a table.
 - DELETE: Removes rows from a table.
 - SELECT: Retrieves data from a table.
- **Query:** First, we insert data into the Student table created earlier.

SQL

```
INSERT INTO Student (roll_no, stud_name, class, city) VALUES  
(101, 'Rahul Sharma', 'TYBCOM', 'Mumbai'),  
(102, 'Priya Singh', 'TYBCOM', 'Delhi'),  
(103, 'Amit Patel', 'TYBCOM', 'Mumbai'),  
(104, 'Sneha Gupta', 'TYBCOM', 'Pune');
```

Now, we use the SELECT command to view all the data.

SQL

```
SELECT * FROM Student;
```

- **Output:** | roll_no | stud_name | class | city | |-----|-----|-----|-----| |
101 | Rahul Sharma | TYBCOM | Mumbai | | 102 | Priya Singh | TYBCOM | Delhi | |
103 | Amit Patel | TYBCOM | Mumbai | | 104 | Sneha Gupta | TYBCOM | Pune |

Practical 3: MySQL Practical for Creating Tables and Executing Subquery

- **Aim:** To retrieve data from a table using a subquery.
- **Theory:** A **Subquery** (or inner query) is a query nested inside another query. It is used to perform operations that require multiple steps, like finding data based on a calculated value (e.g., an average).
- **Query:** We will add a marks column to our Student table and find the students who scored more than the class average.

SQL

```
ALTER TABLE Student ADD COLUMN marks INT;
```

```
UPDATE Student SET marks = 85 WHERE roll_no = 101;
```

```
UPDATE Student SET marks = 92 WHERE roll_no = 102;
```

```
UPDATE Student SET marks = 78 WHERE roll_no = 103;
```

```
UPDATE Student SET marks = 88 WHERE roll_no = 104;
```

Now, execute the subquery to find students with marks above the average.

SQL

```
SELECT stud_name, marks
```

```
FROM Student
```

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

- **Output:** The average mark is 85.75. The query will return students with marks greater than that. | stud_name | marks | |-----|-----| | Priya Singh | 92 | | Sneha Gupta | 88 |

Practical 4: Excel Practical to find FV, PV, NPER, PPMT, IPMT Values

- **Aim:** To calculate financial values using built-in functions in Excel.
- **Theory:**
 - **FV (Future Value):** The value of an investment at a future date.
 - **PV (Present Value):** The current value of a future sum of money.
 - **PPMT (Principal Payment):** The principal portion of a loan payment.
 - **IPMT (Interest Payment):** The interest portion of a loan payment.
- **Formulas and Output: Scenario:** A loan of ₹200,000 at 8% annual interest for 3 years.
| A | B | Formula | |-----|-----|-----| | Loan Amount (PV) | 200000 | | Interest Rate (Annual) | 8% | | Loan Period (Years) | 3 | | Rate per month | 0.67% | =B2/12 | | Nper (months) | 36 | =B3*12 | | Payment (PMT) | - ₹6,265.33 | =PMT(B4,B5,B1) | | PPMT for 1st month | - ₹4,931.99 | =PPMT(B4,1,B5,B1) | | IPMT for 1st month | - ₹1,333.33 | =IPMT(B4,1,B5,B1) |

Practical 5: Excel Practical to execute mathematical and Statistical functions

- **Aim:** To perform mathematical and statistical calculations in Excel.
- **Theory:** Excel functions like SUM, AVERAGE, MAX, MIN, and COUNT are used to quickly perform calculations on a range of data.
- **Formulas and Output: Scenario:** Marks of 5 students in a subject. | A | B | |-----|
--|-----| | Student 1 | 85 | | Student 2 | 92 | | Student 3 | 78 | | Student 4 | 88 | | Student 5 | 95 | |-----|-----| | **Total** | 438 | (Formula: =SUM(B2:B6)) | **Average** | 87.6 | (Formula: =AVERAGE(B2:B6)) | **Highest** | 95 | (Formula: =MAX(B2:B6)) | **Lowest** | 78 | (Formula: =MIN(B2:B6)) | **Count** | 5 | (Formula: =COUNT(B2:B6))

Practical 6: Excel Practical to execute Depreciation values

- [illegible]

Practical 7: Excel Practical to execute aggregate function

- **Aim:** To summarize data using aggregate functions in Excel.
- **Theory:** Aggregate functions perform a calculation on a set of values and return a single summary value. This is a practical application of the functions from Practical 5 on a business dataset.
- **Formulas and Output:** **Scenario:** A shop's quarterly sales data.

Product	Sales (₹)
Laptops	500000
Mobiles	750000
Tablets	320000
Accessories	150000
Total Sales	₹1,720,000 (Formula: =SUM(B3:B6))
Average Sale	₹430,000 (Formula: =AVERAGE(B3:B6))
Number of Products	4 (Formula: =COUNT(A3:A6))
Highest Sale	₹750,000 (Formula: =MAX(B3:B6))