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NAAC GRADE A+ ACCREDITED UNIVERSITY

ExperimentNo. 1.6

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1. **Aim/Overview of the practical:**
   a) Explain the meaning of Database.
   b) Discuss the steps to create and alter a table, views, and functions.

2. **Code for practical: (a)**

- **DATABASE:** A database is a structured collection of data that is organized and stored in a way that allows for efficient retrieval and management of information. It is a crucial component of information systems and plays a central role in storing, retrieving, and managing data for various applications and purposes. Databases are used to store structured data, such as customer information, product details, financial records, and more. They provide a structured and organized way to work with data, allowing users to perform operations like data retrieval, insertion, updating, and deletion. Databases can vary in size from small, single-user systems to large, enterprise-level systems, and they are used across a wide range of industries and applications.

Code for practical: (b)

Step 1 : To create database, we can use **create database <DBName>** command.
Step 2 : To use created database, we can use the command **use <DBName>.**
Step 3 : To create a table inside that database we can use **create table** command

Syntax:

```
create table <TableName> (column1 datatype1 constraint1,
column2 datatype2 constraint2, ..., columnN datatypeN constraintN);
```

Ex:

```
CREATE TABLE student (student_id INT PRIMARY KEY,
first_name VARCHAR(50),    last_name VARCHAR(50),
date_of_birth DATE,    major VARCHAR(50) );
```

Step 4 : To create a table view from a table we can use **create view** command followed by select statement.

Syntax:
```
CREATE VIEW view_name AS
  SELECT column1, column2, ...
  FROM table_name
  WHERE condition;
```

Ex:
```
CREATE VIEW student_name_dob AS
SELECT first_name, date_of_birth
FROM student;
```

Step 5 : To create a MySQL function, we can use **create function** command.

Syntax:
```
CREATE FUNCTION function_name (arguments)
  RETURNS return_type
  BEGIN
  -- Function body
  END;
```

Ex:
```
CREATE FUNCTION current_age(date_of_birth DATE)
RETURNS INT
BEGIN
  DECLARE age INT;
  RETURN TIMESTAMPDIFF(YEAR, date_of_birth, CURDATE());
END;
```

Step 6 : After that you can use above current_age function to calculate the age of students.

Ex: SELECT current_age('1990-05-15') AS age;

```
mysql> create database BA_ws_1_6;
Query OK, 1 row affected (0.00 sec)

mysql> use BA_ws_1_6;
Database changed
mysql> CREATE TABLE student (student_id INT PRIMARY KEY,
    ->          first_name VARCHAR(50),    last_name VARCHAR(50),
    ->          date_of_birth DATE,    major VARCHAR(50) );
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE VIEW student_name_dob AS
    -> SELECT first_name, date_of_birth FROM student;
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE FUNCTION current_age(date_of_birth DATE)
    -> RETURNS INT
    -> BEGIN
    ->     DECLARE age INT;
```