Accessing MySQL using PHP

Introduction to MySQL

- A database is a structured collection of records or data stored in a computer system and organised in such way that it can be quickly searched and information can be rapidly retrieved.

- A MySQL database contains one or more tables, each of which contains records or rows. Within these rows are various columns or fields that contain the data itself.

Some Database Terms

- **Database:-** The overall container for a collection of MySQL data.
- **Table:-** A subcontainer within a database that stores the actual data.
- **Row:-** A single record within a table, which may contain several fields.
- **Column:-** The name of a field within a row.

MySQL Commands

Command	Action
ALTER	Alter a database or table
CREATE	Create a database
DESCRIBE	Describe a table's column
DELETE	Delete a row from a table
DROP	Delete a database or table
EXIT	Exit
GRANT	Change user privileges
INSERT	Insert data
QUIT	Same as Exit

Command	Action
RENAME	Rename a table
TRUNCATE	Empty a table
UPDATE	Update an existing record
USE	Use a database

Data Types

- **CHAR(n):-** Exactly n(<=255)
- **VARCHAR(n):-** Up to n(n<=65535)
- **BINARY(n):-** Exactly n(<= 255)
- **VARBINARY(n):-** Up to n(<= 65535)
- **TEXT(n):-** Up to n(<= 65535)
- **BLOB(n):-** Up to n(<= 65535)
- **INT(n):-** 4 Bytes

MySQL Queries

- **Creating a database**
  - CREATE DATABASE publications;
- **For using a database(publications)**
  - USE publications;
- **Creating a table**
  - CREATE TABLE classics(author VARCHAR(128), title VARCHAR(128), type VARCHAR(16), year VARCHAR(16));
- **To check whether your new table created or not**
  - DESCRIBE classics;
- **Adding data to a table**
  - INSERT INTO classics(author, title, type, year) Values(‘Jane Austen’, ‘Pride and Prejudice’, ‘Fiction’, ‘1811’);

Querying a MySQL Database with PHP

- Steps to use MySQL with PHP-:

1. Connect to MySQL and select the database to use.
2. Build a query string.
3. Perform the query.
4. Retrieve the results and output them to a web page.
5. Repeat steps 2 to 4 until all desired data has been retrieved.
6. Disconnect from MySQL.

Connecting to a MySQL Database

```
<?php  //  login.php
        $hn = ‘localhost’;
        $un = ‘username’;
        $pw = ‘password’;
        $db = ‘publications’;

        $conn = new mysqli($hn, $un, $pw, $db);
        if($conn->connect_error)
            die($conn->connect_error);
?>
```

Building a query and Fetching result

```
<?php
    require_once ‘login.php’;
    $query = “SELECT * FROM classics”;
    $result = $conn->query($query);

    if(!$result)
     die($conn->error)

        $rows = $result->num_rows;

        for($j=0;$j<rows;$j++)
        {
                $result-> data_seek($j);
                echo ‘Author: ’ . $result->fetch_assoc()[‘author’] . ‘<br>’;

                $result-> data_seek($j);
                echo ‘Title: ’ . $result->fetch_assoc()[‘title’] . ‘<br>’;

                $result-> data_seek($j);
                echo ‘Category: ’ . $result->fetch_assoc()[‘category’] . ‘<br>’;

                $result-> data_seek($j);
                echo ‘Year: ’ . $result->fetch_assoc()[‘year’] . ‘<br>’;}

    $result->close();
    $conn->close();
?>
```

Fetching a row

```
<?php
for($j =0; $j< rows; ++$j)
{
$result->data_seek($j);
$row  = $result->fetch_array(MYSQLI_ASSOC);

echo ‘Author’ . $row[‘author’] . ‘<br>’;
echo ‘Title’ . $row[‘title’] . ‘<br>’;
echo ‘Category’ . $row[‘category’] . ‘<br>’;
echo ‘Year’ . $row[‘year’] . ‘<br>’;
}
?>
```

fetch_array method

- The fetch_array method can return three types of array according to the value passed to it.
  - MYSQLI_NUM
    - Numeric array
  - MYSQLI_ASSOC
    - Associative array
  - MYSQLI_BOTH
    - Associative and numeric array.