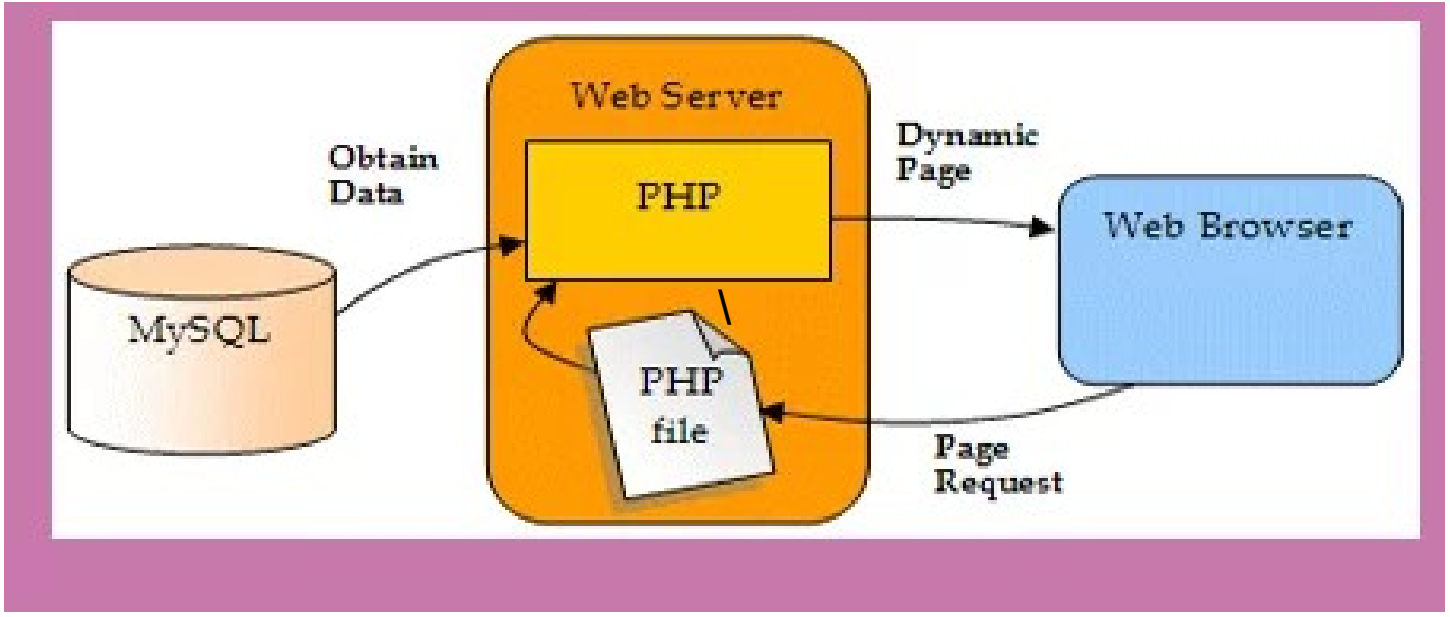
Working with Database

Working with Database



Working with Database

- PHP seamlessly connects and manipulates databases for web development.
- MySQL is the go-to database system, widely used with PHP.
- PHP and MySQL together enable diverse database operations for dynamic web applications.
- Compatibility and extensive documentation enhance the efficiency of PHP and MySQL integration.
- PHP supports various database systems, providing flexibility beyond just MySQL like PostgreSQL.

Working with Database

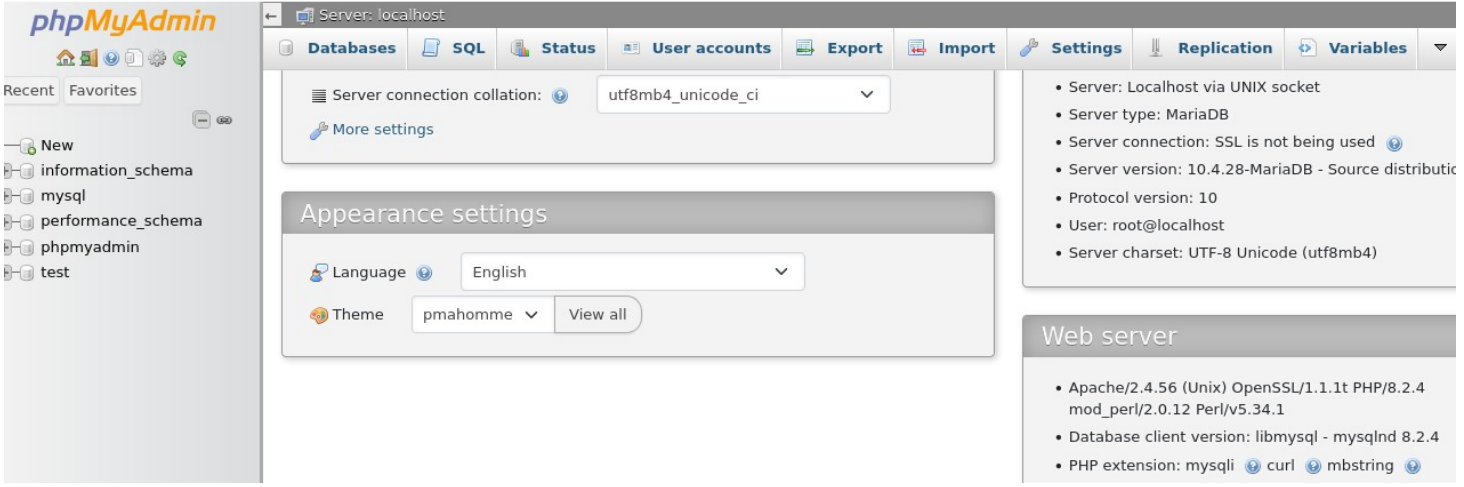
- MySQL, a web database system, stores data in tables with columns and rows.
- Suited for small to large applications, it operates on servers, offering speed, reliability, and user-friendliness.
- MySQL follows standard SQL, is freely available, and is developed by Oracle Corporation.
- The name "MySQL" is a personal touch, named after co-founder Monty Widenius's daughter, My.

Working with Database

- A query is a question or a request.
- We can query a database for specific information and have a record returned.
- Look at the following standard SQL query:
  - **SELECT** Name **FROM** Students
- The query above selects all the data in the "Name" column from the "Students" table.

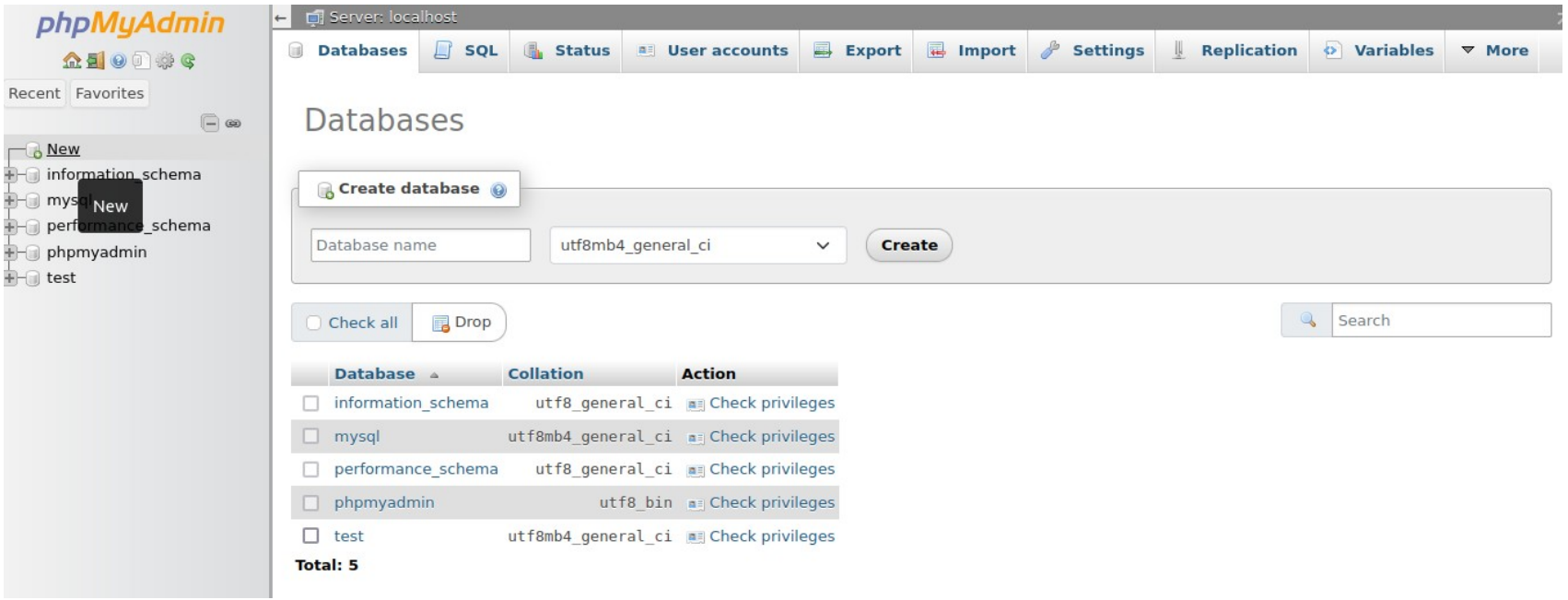
Working with Database

- Start xampp server
- Url: http://localhost/phpmyadmin/



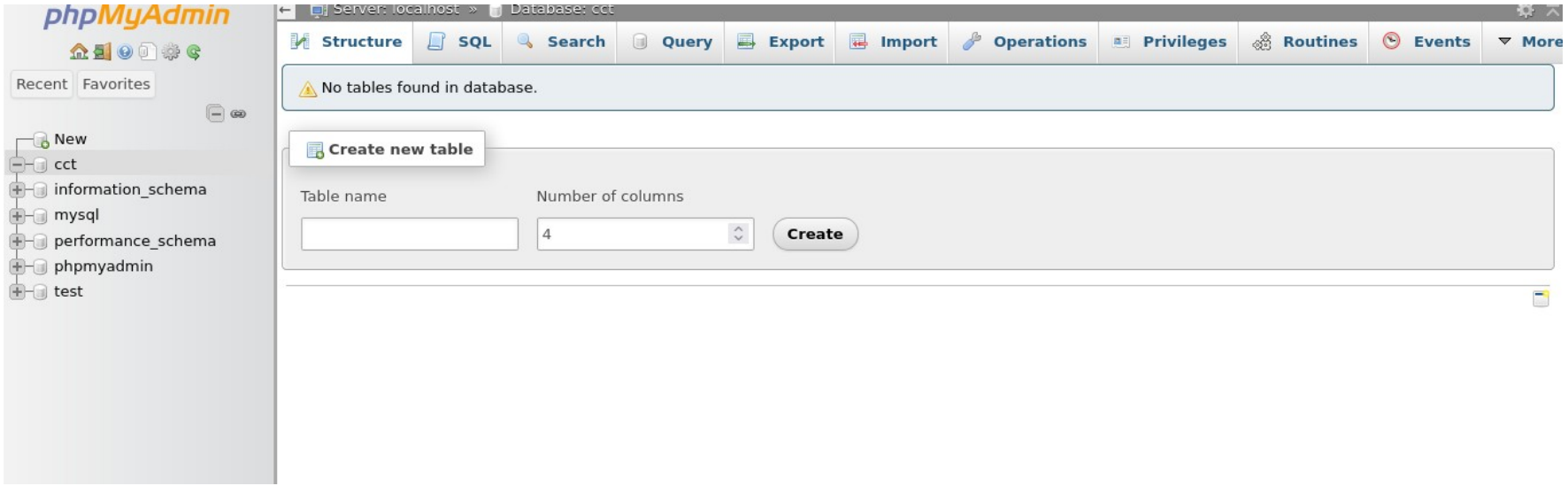
Working with Database

- Click on **New**



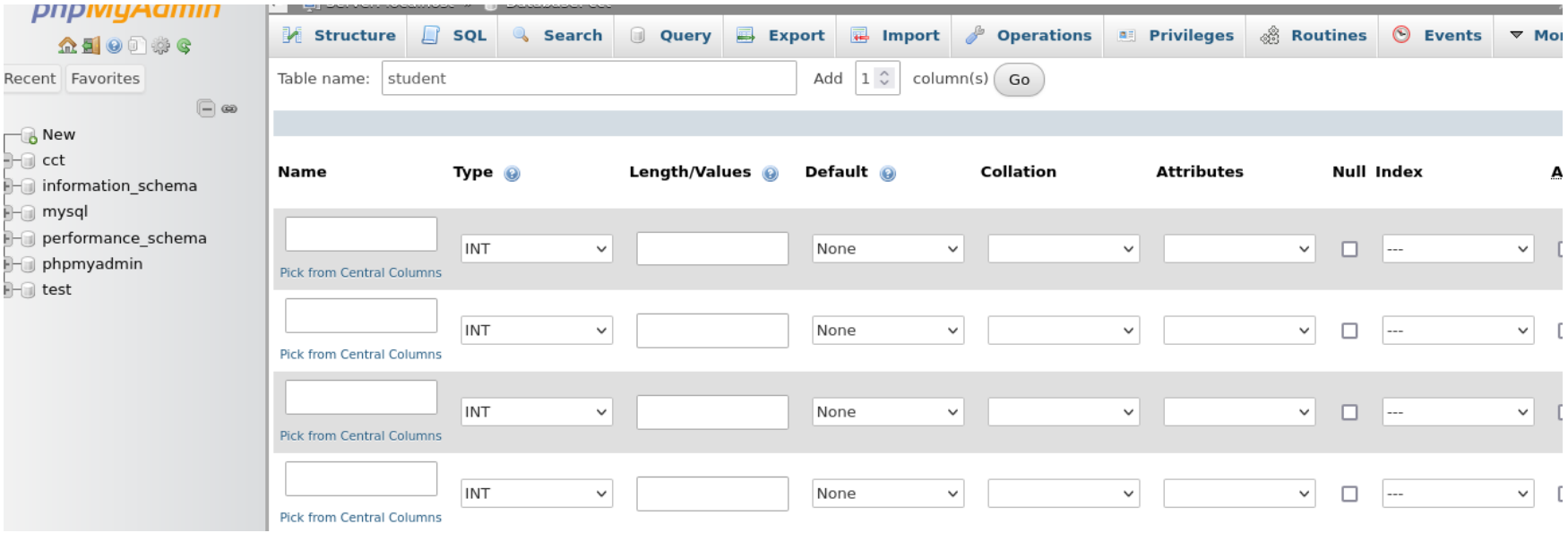
Working with Database

- Provide Database name and click on create



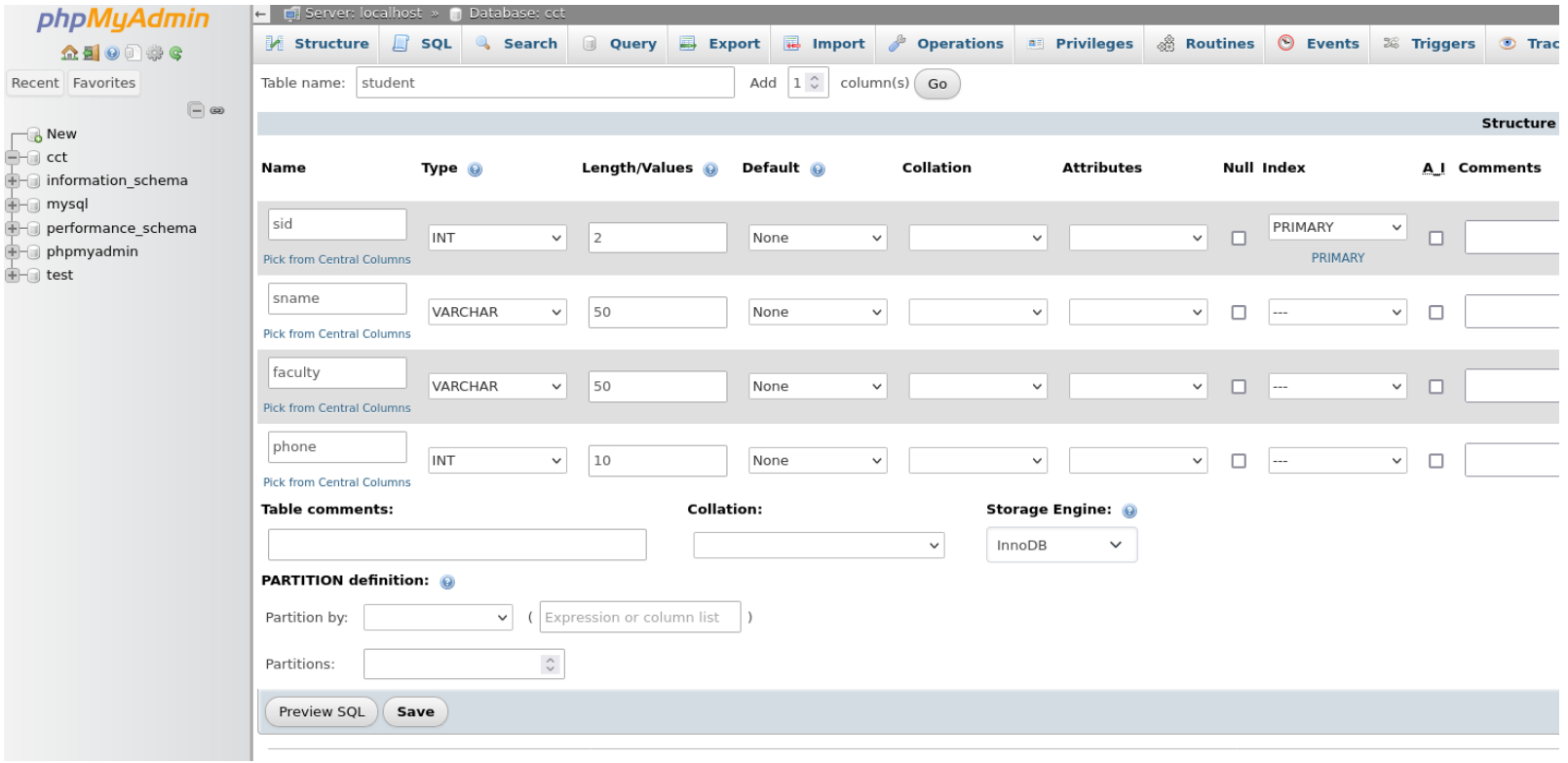
Working with Database

- Provide Table name, No of Columns and click on create



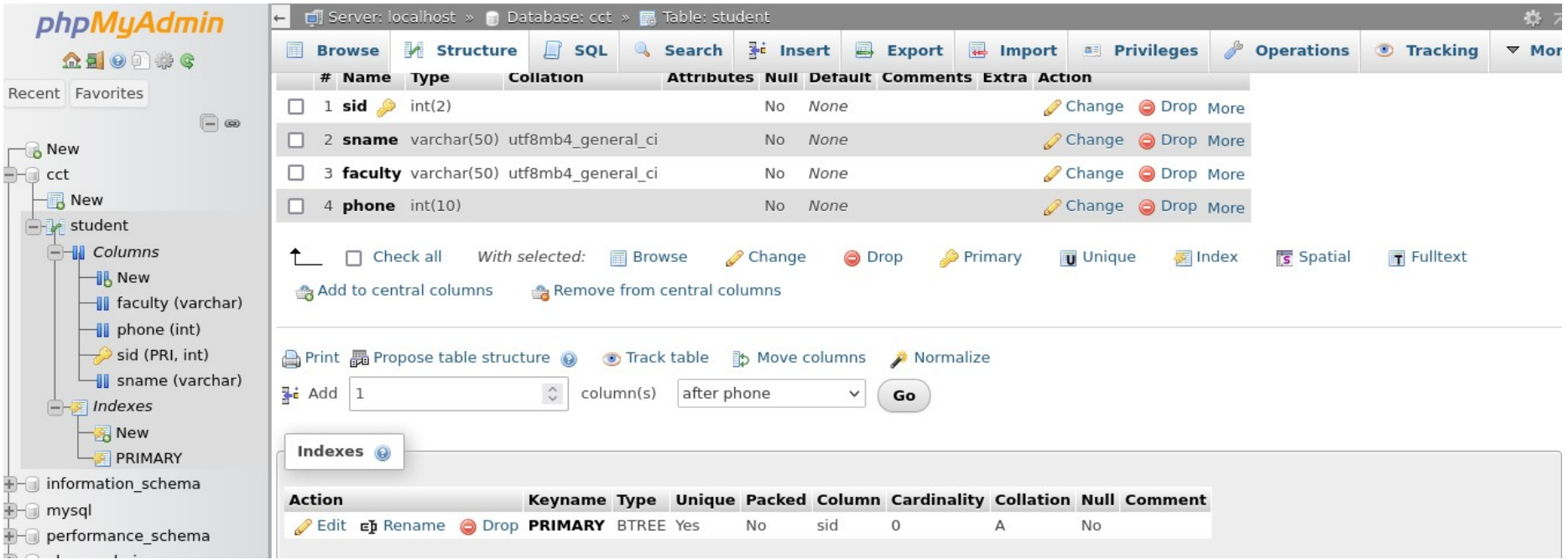
Working with Database

- Fill the table student and click on save



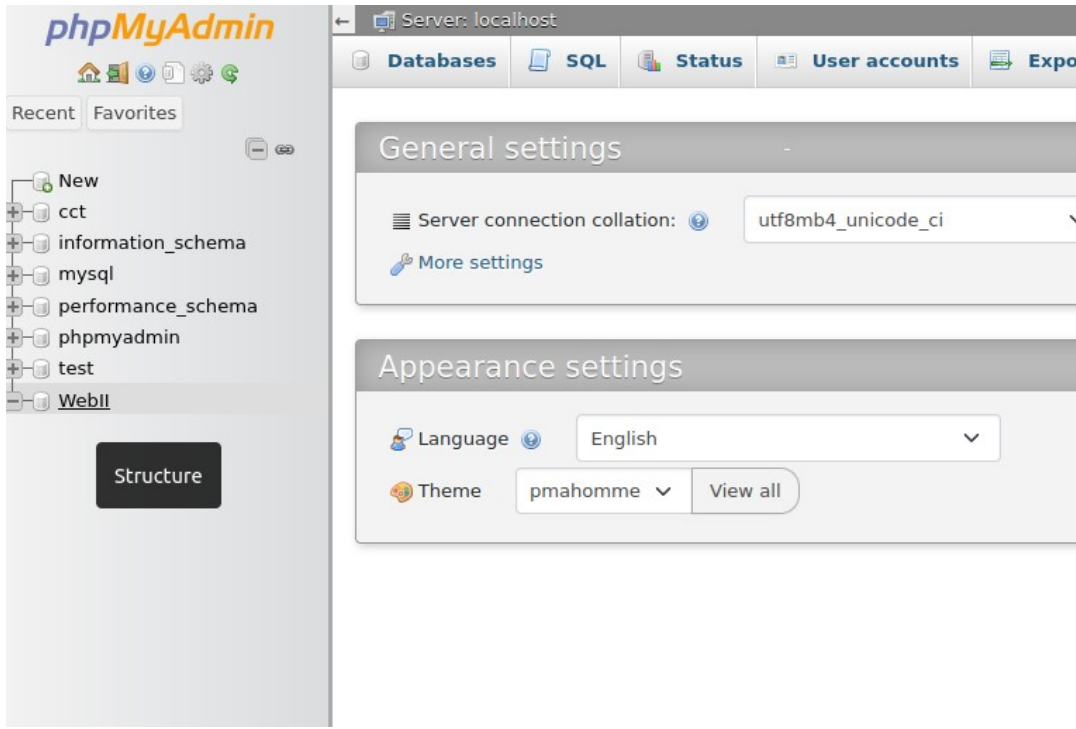
Working with Database

- Then we see



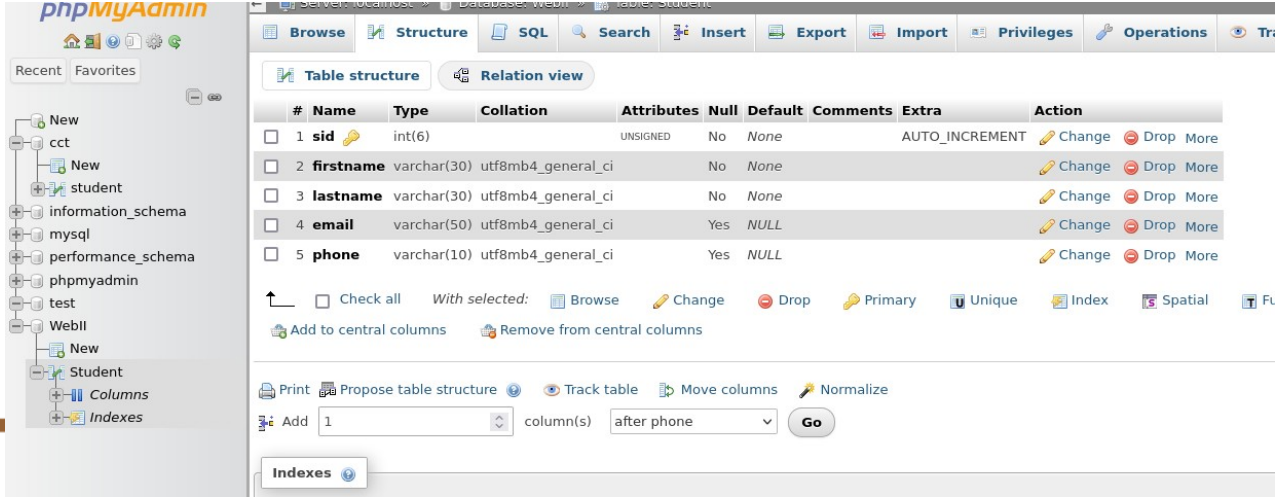
Working with Database: Create

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
// Create connection
$conn = new mysqli($servername, $username, $password);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
// Create database named WebII
$sql = "CREATE DATABASE WebII";
if ($conn->query($sql) === TRUE) {
  echo "Database created successfully";
} else {
  echo "Error creating database: " . $conn->error;
}
$conn->close();
?>
```



Working with Database: Create

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "WebII";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
// sql to create table
$sql = "CREATE TABLE Student (
sid INT(6) UNSIGNED AUTO_INCREMENT PRIMARY KEY,
firstname VARCHAR(30) NOT NULL,
lastname VARCHAR(30) NOT NULL,
email VARCHAR(50),
phone VARCHAR(10)
)";
if ($conn->query($sql) === TRUE) {
  echo "Table Student created successfully";
} else {
  echo "Error creating table: " . $conn->error;
}
$conn->close();
?>
```

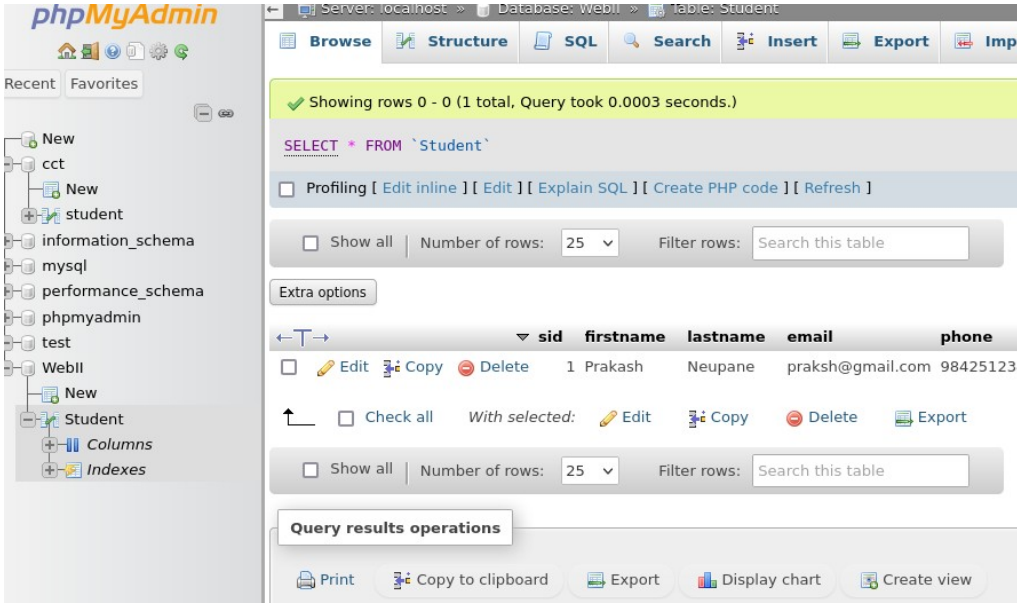


Working with Database: Insert data

- Here are some syntax rules to follow:
  - PHP requires SQL queries to be enclosed in quotes.
  - String values within the SQL query must be surrounded by quotes.
  - Numeric values should not be enclosed in quotes.
  - The keyword "NULL" must not be quoted.
- The INSERT INTO statement is employed to insert new records into a MySQL table.
- It follows the format:
  - ***INSERT INTO table_name (column1, column2, column3, ...)***
  - ***VALUES (value1, value2, value3, ...);***

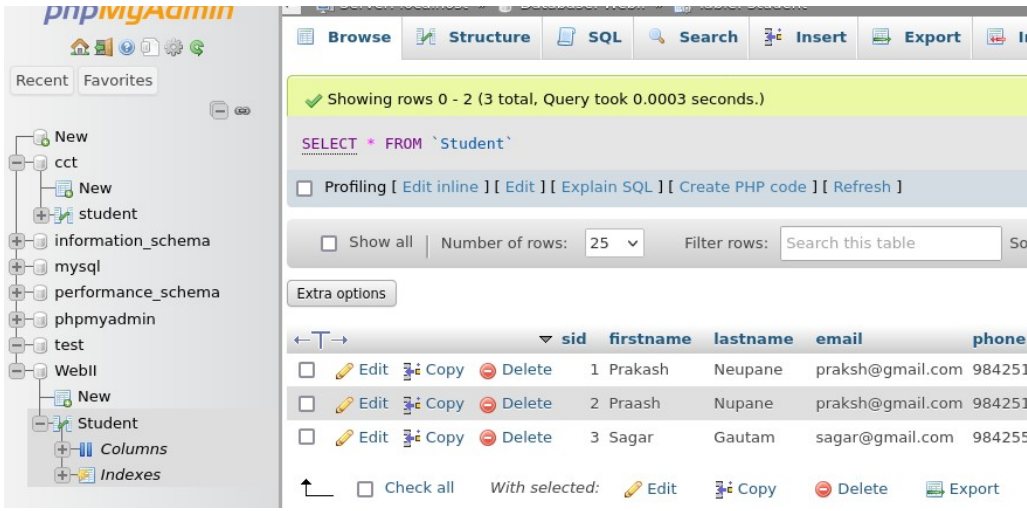
Working with Database: Insert Data

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "WebII";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
$sql = "INSERT INTO Student (firstname, lastname, email, phone)
VALUES ('Prakash', 'Neupane', 'praksh@gmail.com', 9842512345)";
if ($conn->query($sql) === TRUE) {
  echo "New record created successfully";
} else {
  echo "Error: " . $sql . "<br>" . $conn->error;
}
$conn->close();
?>
```



Modify the following code to insert multiple records in to a table at once (output should be like in the given figure)

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "WebII";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
$sql = "INSERT INTO Student (firstname, lastname, email, phone)
VALUES ('Prakash', 'Neupane', 'praksh@gmail.com', 9842512345)";
if ($conn->query($sql) === TRUE) {
  echo "New record created successfully";
} else {
  echo "Error: " . $sql . "<br>" . $conn->error;
}
$conn->close();
?>
```



Use the concept of Prepared Statements and Bound Parameters for inserting records in database

- Prepared statements are very useful against SQL injections.

Select/ retrieve Data from Database

- SELECT * FROM table_name
- SELECT column_name(s) FROM table_name WHERE column_name operator value
- SELECT column_name(s) FROM table_name ORDER BY column_name(s) ASC|DESC

Select/ retrieve Data from Database

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "WebII";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
$sql = "SELECT sid, firstname, lastname, email, phone FROM Student";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
  // output data of each row
  while($row = $result->fetch_assoc()) {
    echo "Student_id: " . $row["sid"]. " Name: " . $row["firstname"]. " " . $row["lastname"] . " Email: " . $row["email"] . " Phone number: ". $row["phone"] ."<br>";
  }
} else {
  echo "0 results";
}
$conn->close();
?>
```

Student_id: 1 Name: Prakash Neupane Email: praksh@gmail.com Phone number: 9842512345
Student_id: 2 Name: Praash Nupane Email: praksh@gmail.com Phone number: 9842512345
Student_id: 3 Name: Sagar Gautam Email: sagar@gmail.com Phone number: 9842554321

Select/ retrieve Data from Database

- Use the concepts of Where and order By clause to filter the records while retrieving records from table using php.

Delete Data from Database

- The DELETE statement is used to delete records from a table:
  - DELETE FROM table_name
  - WHERE some_column = some_value

- ***Notice the WHERE clause in the DELETE syntax: The WHERE clause specifies which record or records that should be deleted. If you omit the WHERE clause, all records will be deleted!***

Delete Data from Database

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "WebII";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
// sql to delete a record
$sql = "DELETE FROM Student WHERE sid=3";
if ($conn->query($sql) === TRUE) {
  echo "Record deleted successfully";
} else {
  echo "Error deleting record: " . $conn->error;
}
$conn->close();
?>
```

sid	firstname	lastname	email	phone
1	Prakash	Neupane	praksh@gmail.com	9842512345
2	Praash	Nupane	praksh@gmail.com	9842512345
3	Sagar	Gautam	sagar@gmail.com	9842554321

sid	firstname	lastname	email	phone
1	Prakash	Neupane	praksh@gmail.com	9842512345
2	Praash	Nupane	praksh@gmail.com	9842512345

Update Data in Database

- The UPDATE statement is used to update existing records in a table:
  - UPDATE table_name
  - SET column1=value, column2=value2,...
  - WHERE some_column=some_value

Update Data in Database

- The UPDATE statement is used to update existing records in a table:
  - UPDATE table_name
  - SET column1=value, column2=value2,...
  - WHERE some_column=some_value

  - ***Notice the WHERE clause in the UPDATE syntax: The WHERE clause specifies which record or records that should be updated. If you omit the WHERE clause, all records will be updated!***

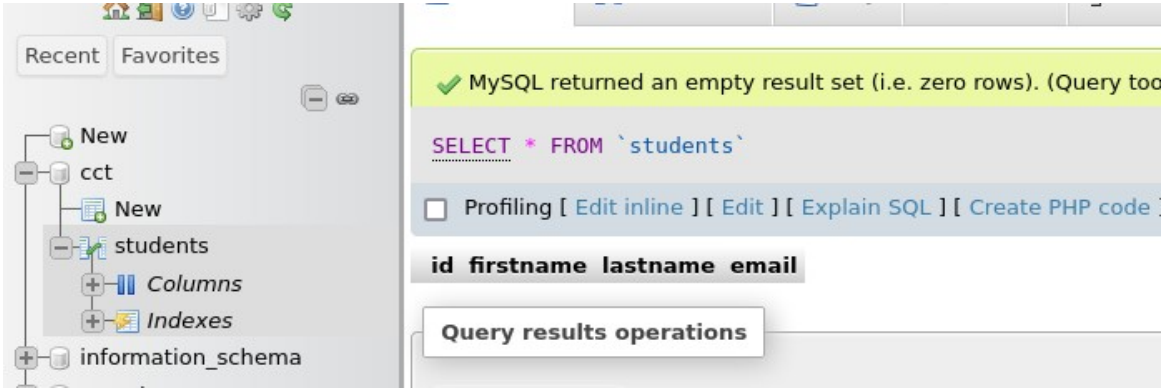
Update Data in Database

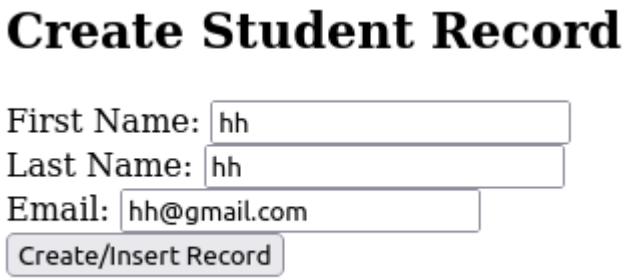
```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "WebII";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
$sql = "UPDATE Student SET firstname ='Sagar', lastname='Gautam' WHERE sid=2";
if ($conn->query($sql) === TRUE) {
  echo "Record updated successfully";
} else {
  echo "Error updating record: " . $conn->error;
}
$conn->close();
?>
```

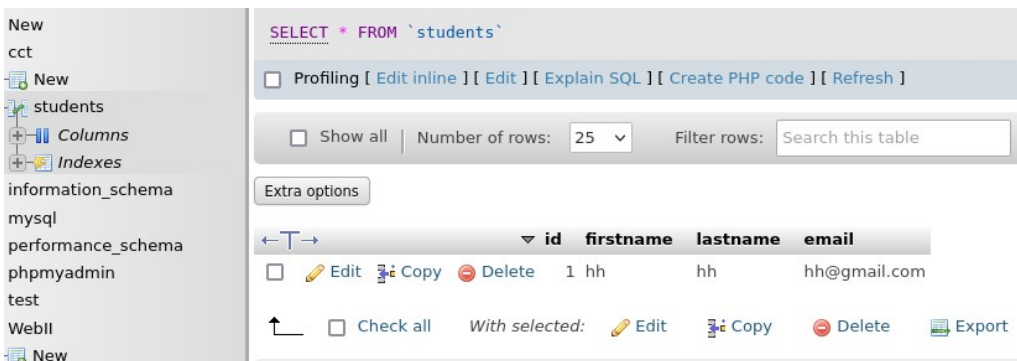
sid	firstname	lastname	email	phone
1	Prakash	Neupane	praksh@gmail.com	9842512345
2	Praash	Nupane	praksh@gmail.com	9842512345

	sid	firstname	lastname	email	phone
te	1	Prakash	Neupane	praksh@gmail.com	9842512345
te	2	Sagar	Gautam	praksh@gmail.com	9842512345

Create/Insert data into table using form







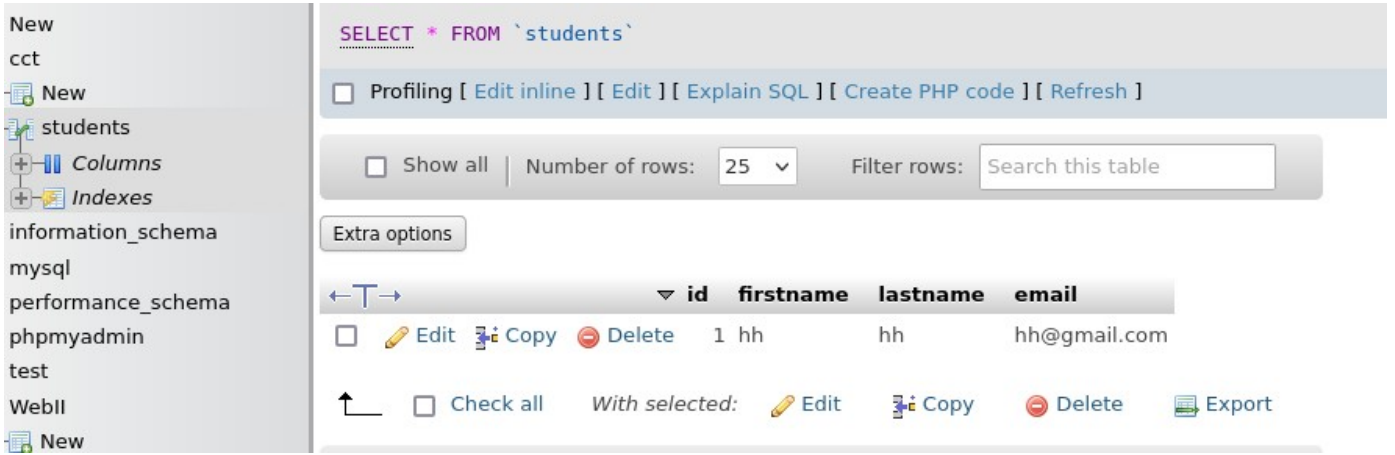
Create/Insert data into table using form

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Create Student Record</title>
</head>
<body>
    <h2>Create Student Record</h2>
    <form method="post" action="insert_cct_students.php">
        <label for="firstname">First Name:</label>
        <input type="text" name="firstname" required><br>
        <label for="lastname">Last Name:</label>
        <input type="text" name="lastname" required><br>
        <label for="email">Email:</label>
        <input type="email" name="email" required><br>
        <input type="submit" value="Create/Insert Record">
    </form>
</body>
</html>

```

```
//insert_cct_students.php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "cct";
$conn = new mysqli($servername, $username, $password, $dbname);
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $firstname = $_POST["firstname"];
    $lastname = $_POST["lastname"];
    $email = $_POST["email"];
    $sql = "INSERT INTO students (firstname, lastname, email) VALUES ('$firstname', '$lastname', '$email')";
    if ($conn->query($sql) === TRUE) {
        echo "Record created successfully";
    } else {
        echo "Error: " . $sql . "<br>" . $conn->error;
    }
}
$conn->close();
?>
```

Retrieve data from database in tabular form



Student Records

ID	First Name	Last Name	Email
1	hh	hh	hh@gmail.com

Retrieve data from database in tabular form

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "cct";
$conn = new mysqli($servername, $username, $password, $dbname);
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$sql = "SELECT * FROM students";
$result = $conn->query($sql);
?>
```

```php
<h2>Student Records</h2>
<table border="1">
    <tr>
        <th>ID</th>
        <th>First Name</th>
        <th>Last Name</th>
        <th>Email</th>
    </tr>
    <?php
    if ($result->num_rows > 0) {
        while($row = $result->fetch_assoc()) {
            echo "<tr>";
            echo "<td>" . $row["id"] . "</td>";
            echo "<td>" . $row["firstname"] . "</td>";
            echo "<td>" . $row["lastname"] . "</td>";
            echo "<td>" . $row["email"] . "</td>";
            echo "</tr>";
        }
    } else {
        echo "<tr><td colspan='4'>No records found</td></tr>";
    }
    ?>
</table>
```

Update and delete data using form

Refer: https://github.com/neupaneprakash/webTech_II/blob/main/Crud.zip

Update and delete data using form

Refer: https://github.com/neupaneprakash/webTech_II/blob/main/Crud.zip