

# Database Systems Lab

## Lab Task # 08

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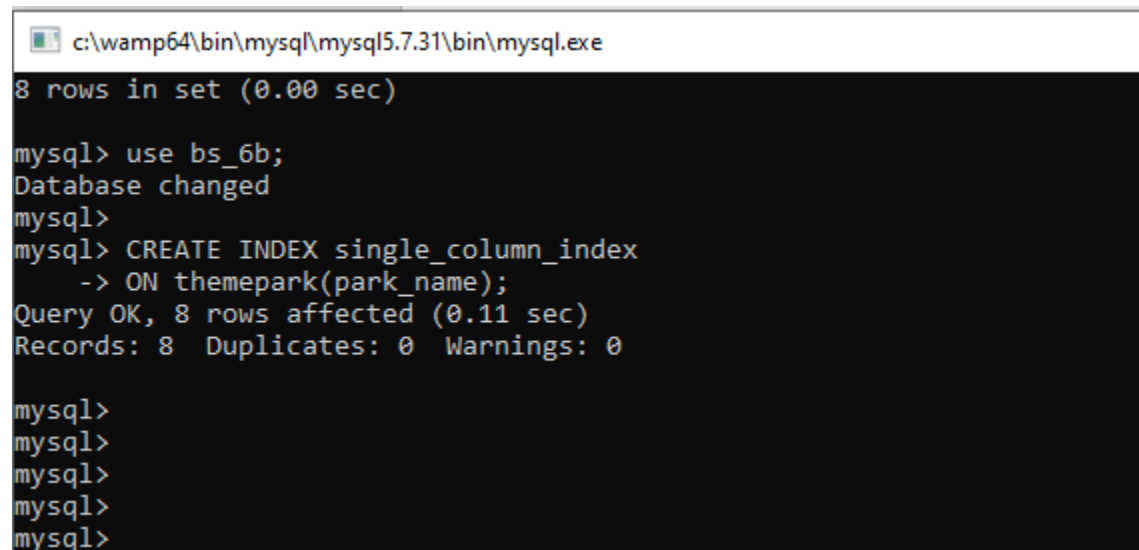
**Instructor:** Mr.Muhammad Usman

### Exercises

Consider the database themepark that we have used throughout the labs.

**E 8.1 Create a single-column index using attribute park\_name in the themepark table.**

```
use bs_6b;  
create INDEX single_column_index  
ON themepark(park_name);
```

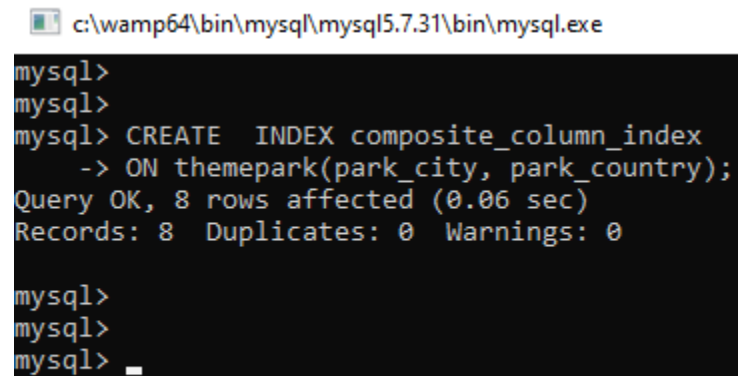


```
c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe  
8 rows in set (0.00 sec)  
  
mysql> use bs_6b;  
Database changed  
mysql>  
mysql> CREATE INDEX single_column_index  
-> ON themepark(park_name);  
Query OK, 8 rows affected (0.11 sec)  
Records: 8  Duplicates: 0  Warnings: 0  
  
mysql>  
mysql>  
mysql>  
mysql>  
mysql>
```

### E 8.2 Create a composite-column index using attributes park\_city and park\_country.

```
CREATE INDEX composite_column_index  
ON themepark(park_city, park_country);
```

---



The screenshot shows a Windows command prompt window titled "c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe". The prompt is "mysql>". The user enters the command "CREATE INDEX composite\_column\_index -> ON themepark(park\_city, park\_country);". The output shows "Query OK, 8 rows affected (0.06 sec)" and "Records: 8 Duplicates: 0 Warnings: 0". The prompt then returns to "mysql>" three times, with a cursor visible on the last line.

### E 8.3 Display the list of indexes for table themepark.

```
SHOW INDEX FROM themepark\G;
```

c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql>
mysql>
mysql> SHOW INDEX FROM themepark\G;
***** 1. row *****
      Table: themepark
    Non_unique: 0
      Key_name: PRIMARY
    Seq_in_index: 1
    Column_name: PARK_CODE
      Collation: A
    Cardinality: 8
      Sub_part: NULL
        Packed: NULL
          Null:
    Index_type: BTREE
      Comment:
Index_comment:
***** 2. row *****
      Table: themepark
    Non_unique: 1
      Key_name: single_column_index
    Seq_in_index: 1
    Column_name: PARK_NAME
      Collation: A
    Cardinality: NULL
      Sub_part: NULL
        Packed: NULL
          Null:
    Index_type: BTREE
      Comment:
Index_comment:
***** 3. row *****
      Table: themepark
    Non_unique: 1
      Key_name: composite_column_index
    Seq_in_index: 1
    Column_name: PARK_CITY
      Collation: A
    Cardinality: NULL
      Sub_part: NULL
        Packed: NULL
          Null:
    Index_type: BTREE
      Comment:
Index_comment:
***** 4. row *****
      Table: themepark
    Non_unique: 1
      Key_name: composite_column_index
    Seq_in_index: 2
    Column_name: PARK_COUNTRY
```

## **E 8.4 What is implicit index and unique index?**

Implicit indexes are indexes that are automatically created by the database server when an object is created. Indexes are automatically created for primary key constraints and unique constraints.

A unique index does not allow any duplicate values to be inserted into the table. Unique indexes are used not only for performance, but also for data integrity. The basic syntax is as follows.

```
CREATE UNIQUE INDEX index_name  
ON table_name(column_name);
```

## **E 8.5**

**Your task is:**

**Create a database named nutec having table named registrations.**

**Make two pages using php and html**

**1. Registration event page**

**This page allow the user to fill the form and on clicking on submit button the record will get**

**inserted into the table registrations you have already defined in database nutec.**

First of all we create database name as nutec. Then we use this nutec database and create table named as registration. As shown in below figure

Select c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
9 rows in set (0.00 sec)

mysql>
mysql>
mysql>
mysql> CREATE database nutec;
Query OK, 1 row affected (0.00 sec)

mysql> use nutec;
Database changed
mysql>
mysql>
mysql> CREATE table registrations(
    -> rollno varchar(100),
    -> name varchar(100),
    -> email varchar(100),
    -> department varchar(100),
    -> chooseEvent varchar(100)
    -> );
Query OK, 0 rows affected (0.09 sec)

mysql>
```

Here is code of registration form using php and html.

```
<!DOCTYPE html>
<html>
<head>
    <title>User registration</title>
</head>
<body>

    <?php

        $username = 'root';
$password = '';
$dbname = "nutec";

//check connection

try{
    $conn =new PDO("mysql:host=localhost; dbname=nutec", $username, $password);
    //set the PDO error mode to exception
    $conn ->setAttribute( PDO:: ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
    echo 'Connected successfully';
```

```

}catch(PDOException $e){
    echo 'Connection failed: '. $e->getMessage();
}

?>

<div>
    <?php
        if (isset($_POST['create'])) {
            $rollno = $_POST['rollno'];
            $name = $_POST['name'];
            $email = $_POST['email'];
            $department = $_POST['department'];
            $chooseEvent = $_POST['chooseEvent'];

            $stmt = $conn-
>prepare("INSERT INTO registrations VALUES('$rollno','$name','$email','$departmen
t','$chooseEvent' )");
            $stmt->execute();

        }else

        ?>
    </div>

<div>
    <form action="lab_task08.php"method= "POST">
        <div class="container">
            <h1>Nutec'21 Event Registration for FASTIANS</h1>

            <fieldset style="width:1000px">

                <label for="rollno"><b>Roll No</b></label>&emsp;&emsp;&emsp;&emsp;&em
sp;&emsp;
                <input type="text" name="rollno" required>
                <br><br>

```

```
<label for="name"><b>Name</b></label>&emsp;&emsp;&emsp;&emsp;&emsp;&e  
msp;  
  
<input type="text" name="name" required>  
<br><br>  
  
<label for="email"><b>Email Address</b></label>&emsp;&emsp;&emsp;&ems  
p;&nbsp;p;  
  
<input type="email" name="email" required>  
<br><br>  
  
<label for="department"><b>Department</b></label>&emsp;&emsp;&emsp;&e  
msp;  
  
<select name="department" id="dept" >  
  
    <option value="Computer Science">Computer Science</option>  
    <option value="Electrical Engineering">Electrical Engineering</optio  
n>  
  
    <option value="Software Engineering">Software Engineering</option>  
    <option value="Artificial Intelligence">Artificial Intelligence</opt  
ion>  
  
</select>  
  
<br><br>  
  
<label for="chooseEvent"><b>Choose Event</b></label>&emsp;&emsp;&emsp;  
&emsp;&emsp;&emsp;&emsp;&nbsp;p;  
  
<select name="chooseEvent" id= "events" >  
  
    <option value="Speed Programming">Speed Programming</option>  
    <option value="GNight">GNight</option>  
    <option value="Book Fair">Book Fair</option>  
    <option value="Sports Week">Sports Week</option>  
    </select>  
  
<br><br>  
  
    <input type="submit" style="color: #FFFFFF;background-  
color: #0000FF" name="create" value="Sign Up">  
    </div>  
</fieldset>  
</form>  
</div>
```

```
</body>
</html>
```

This registration form is Successfully connected with nutec database.

Connected successfully

## Nutec'21 Event Registration for FASTIANS

|  |  |
|--|--|
| Roll No                                | <input type="text"/>                           |
| Name                                   | <input type="text"/>                           |
| Email Address                          | <input type="text"/>                           |
| Department                             | <input type="text" value="Computer Science"/>  |
| Choose Event                           | <input type="text" value="Speed Programming"/> |
| <input type="button" value="Sign Up"/> |  |

Now we put the values. And press the sign up button for data insertion in database.

Connected successfully

## Nutec'21 Event Registration for FASTIANS

|  |   |
|--|---|
| Roll No                                | <input type="text" value="P201234"/>              |
| Name                                   | <input type="text" value="Ammad Amir Khan"/>      |
| Email Address                          | <input type="text" value="P177777@nu.edu.pk"/>    |
| Department                             | <input type="text" value="Software Engineering"/> |
| Choose Event                           | <input type="text" value="GNight"/>               |
| <input type="button" value="Sign Up"/> |   |



So here we can see that data is Successfully inserted in our data base.

The screenshot shows the phpMyAdmin interface for a MySQL database named 'nutec'. The 'registrations' table is selected, and the query results are displayed. The table has 3 rows of data, which are circled in red. The columns are 'rollno', 'name', 'email', 'department', and 'chooseEvent'.

| rollno  | name             | email             | department              | chooseEvent       |
|---------|------------------|-------------------|-------------------------|-------------------|
| P201234 | Ammad Amir Khan  | P177777@nu.edu.pk | Software Engineering    | GNight            |
| P176102 | Basharat Hussain | p16102@nu.edu.pk  | Computer Science        | Speed Programming |
| P201234 | fdsifdg          | gdsgdgd@nu.edu.pk | Artificial Intelligence | Sports Week       |

## 2. Registration record page

Select the searching option (roll no, event name, department), then make a field to enter data accordingly to search and show the results accordingly.

```
<!DOCTYPE html>
<html>
<head>
    <title>Event registration Record</title>
</style>
    <h1 {text-align: center;}
    <div {text-align: center;}
</style>
</head>
<body>

<?php

// (isset($_POST['user_id'])) {

$username = 'root';
$password = '';
$dbname = "nutec";

//check connection

try{
    $conn =new PDO("mysql:host=localhost; dbname=nutec", $username, $password);
    //set the PDO error mode to exception
    $conn ->setAttribute( PDO:: ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
    echo 'Connected successfully';

}catch(PDOException $e){
    echo 'Connection failed: '. $e->getMessage();
}

//$user_id = $_POST["user_id"];
```

?>

```
<div>
    <form action="page2.php"method= "POST">
        <div class="container">
            <fieldset style="width:700px">

                <h1>Nutec'21 Event Record</h1>

                <label for="searchby"><b>Search by:</b></label>&emsp;&emsp;&emsp;&emsp;
p;&emsp;&emsp;&emsp;
                <select name="searchby" id="cars">
                    <option value="rollno">Roll No</option>
                    <option value="chooseEvent">Events</option>
                    <option value="department">Departments</option>
                </select>
                <br><br>

                <label for="enterdata"><b>Enter data:</b></label>&emsp;&emsp;&emsp;&e
msp;&emsp;&emsp;&emsp;
                <input type="text" name="enterdata" required>
                <br><br>

                <div><input type="submit" style="color: #FFFFFF;background-
color: #0000FF" name="create" value="Output">
                </div>

            </div>
        </form>
    </div>

    <h2>Output</h2>
```

```
        </div>
    </fieldset>
</form>
</div>

</body>
</html>
```

Event page is Successfully created and connected with database nutec

The screenshot shows a web browser window with the address bar displaying 'localhost/lab%208/page2.php'. The browser tabs include 'Lab 8 Indexes', 'User registration', '<fieldset>'s wid', 'User registrati', 'search record in', and 'Simple search'. Below the browser window, a message 'Connected successfully' is displayed. The main content area features a form titled 'Nutec'21 Event Record'. The form includes a 'Search by:' label followed by a dropdown menu currently showing 'Roll No'. Below this is an 'Enter data:' label followed by a text input field. A blue button labeled 'Output' is positioned below the input field. At the bottom of the form, the word 'Output' is displayed in a large, bold font.