Assignment 9

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PHP Demo Site: click here

PHP Test Code

```
In [11]: <link rel="stylesheet" type="text/css" href="../css/style.css">

         <?php
         /**
          * Created by PhpStorm.
          * User: karen
          * Date: 10/24/18
          * Time: 12:00 PM
          */

         require_once('../connect/connect.php');
         require_once('../helper/schedulehelper.php');


         function insert($con, $dept, $date, $empid, $start_time, $firstname, $lastname)
         {
             $query = "SELECT length FROM shift WHERE from_time='$start_time'";
             $res = mysqli_query($con, $query);
             $num_lengths = mysqli_num_rows($res);
             if ($num_lengths > 1) {
                 echo '<h4><center>But there are multiple shift length at this start time!!</center></h4
                 $i = 0;
                 while ($row = mysqli_fetch_assoc($res)) {
                     $i = $i + 1;
                     echo '<center><br><br>option ' . $i . ':  ' . $row['length'] . 'hrs <br></center>';
                 }
                 echo '<br><br><center>Which shift length? Please specify!</center>';
             } else {
                 $shift_length = mysqli_fetch_assoc($res)['length'];

                 $query = "INSERT INTO schedule (date, empid, dept, start_time, shift_length) VALUES
                             ('$date',
                              '$empid',
```

```php
                        '$dept',
                        '$start_time',
                        $shift_length)";
        echo '<center>SQL Query: ' . $query . '</center>';
        $result = mysqli_query($con, $query);
        if (!($result)) {
            $msg = 'MySQL error #' . mysqli_connect_errno() . ": " . mysqli_connect_error();
            printf($msg, __FILE__, __LINE__);
        } else {
            echo '<br><br><h4><center>Employee <i>' . $firstname . ' ' . $lastname .
            '</i> is scheduled on ' . $date . ' starting from ' . $start_time . ' for ' . $shif
            ' hours in ' . $dept . '</center></h4>';
        }
    }
}


function schedule($con, $dept, $date, $empid, $start_time)
{
    $date = convert_date_format($date);

    $query = "SELECT firstname, lastname
                FROM employees
                WHERE empid = '$empid'";
    $result = mysqli_query($con, $query);

    if (0 == mysqli_num_rows($result)) {
        echo '<br><br><h4 style="color: red"><center>No Employee <i>' . $empid .
        '</i> in the database! Please double check!</center></h4>';
    } else {
        $row = mysqli_fetch_assoc($result);
        $firstname = $row['firstname'];
        $lastname = $row['lastname'];

        $query = "SELECT *
                FROM schedule
                WHERE empid='$empid'
                AND date='$date'
                AND dept='$dept'";

        $result = mysqli_query($con, $query);
        if (!($result)) {
            $msg = 'MySQL error #' . mysqli_connect_errno() . ": " . mysqli_connect_error();
            printf($msg, __FILE__, __LINE__);
        } else if (0 == mysqli_num_rows($result)) {

            echo '<br>
                    <h4><center><i>' . $firstname . ' ' . $lastname . '</i> is open for
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```php
                schedule on ' . $date . ' starting from ' . $start_time . ' in ' . $dept . ' </cent

                insert($con, $dept, $date, $empid, $start_time, $firstname, $lastname);
        } else {

            echo "<br><br>";
            echo "<h4 style='color: red'><center>Employee <i>" . $firstname . " " .
            $lastname . "</i> has already been scheduled on $date:</center></h4><br><br>";

            echo "<table class='center' border=1>";
            echo "<tr>";
            $i = 0;
            while ($i < mysqli_num_fields($result)) {
                $meta = mysqli_fetch_field_direct($result, $i);
                echo '<td>' . $meta->name . '</td>';
                $i = $i + 1;
            }

            while ($row = mysqli_fetch_assoc($result)) {
                echo "<tr>\n";
                foreach ($row as $cell) {
                    echo "<td> $cell </td>";
                }
                echo "</tr>\n";
            }

            echo "</table><br><br><br>";
        }
    }


}


function unschedule($con, $dept, $date, $empid)
{
    $date = convert_date_format($date);

    $query = "SELECT firstname, lastname
                FROM employees
                WHERE empid = '$empid'";
    $result = mysqli_query($con, $query);

    if (0 == mysqli_num_rows($result)) {
        echo '<br><br>
                <h4 style="color: red"><center>No Employee <i>' . $empid . '</i>
        in the database! Please double check!</center></h4>';
    } else {
```

```php
        $row = mysqli_fetch_assoc($result);

        $firstname = $row['firstname'];
        $lastname = $row['lastname'];


        $query = "SELECT *
                FROM schedule
                WHERE empid='$empid'
                AND date='$date'
                AND dept='$dept'";
        if (0 == mysqli_num_rows(mysqli_query($con, $query))) {

            echo '<br><br><center><h4 style="color: red">Employee <i>' . $firstname . ' ' .
            $lastname . '</i> has not been scheduled, please double check!!</h4></center><br>';
        } else {
            $query = "DELETE FROM schedule WHERE dept='$dept' AND date='$date' AND empid='$empi
            $result = mysqli_query($con, $query);
            if ($result) {
                echo '<center><h4>Employee <i>' . $firstname . ' ' . $lastname . '</i> is
                successfully unscheduled on ' . $date . ' in the ' . $dept . ' department.</h4>
            }
        }
    }
}

function test_cases($con)
{
    $dept_arr = array('EMERGENCY', 'PEDIATRICS', 'RADIOLOGY', 'ONCOLOGY');
    $empid_arr = array('853537', '854480', '878397', '898057', '945540', '995636','123456');
    $date_arr = array('10-01-2018', '10-03-2018', '09-24-2018', '09-28-2018', '09-30-2018', '10
    $start_time_arr = array('07:00:00', '19:00:00', '15:00:00', '23:00:00');

    $num_tests = 5;
    $i = 0;

    # test scheduling:
    while ($i < $num_tests) {
        $i = $i + 1;
        echo '<h3 style="margin-left: 20%">Test  ' . $i . ':</h3><br><br>';

        echo '<h4 style="margin-left: 25%">Schedule Case ' . $i . ':</h4><br><br>';

        $dept = $dept_arr[array_rand($dept_arr, 1)];
        $date = $date_arr[array_rand($date_arr, 1)];
        $empid = $empid_arr[array_rand($empid_arr, 1)];
        $start_time = $start_time_arr[array_rand($start_time_arr, 1)];
```

```php
        echo '<center>Department: '.$dept.'<br><br>Date: '.$date.'<br><br>EmployeeID: '.
        $empid.'<br><br>StartTime: '.$start_time.'<br><br></center>';

        schedule($con, $dept, $date, $empid, $start_time);

        echo '<br><br><br><h4 style="margin-left: 25%">Unschedule Case ' . $i . ':</h4><br><br>

        $dept = $dept_arr[array_rand($dept_arr, 1)];
        $date = $date_arr[array_rand($date_arr, 1)];
        $empid = $empid_arr[array_rand($empid_arr, 1)];

        echo '<center>Department: '.$dept.'<br><br>Date: '.$date.'<br><br>EmployeeID: '.
        $empid.'<br><br>StartTime: '.$start_time.'<br><br></center>';

        unschedule($con, $dept, $date, $empid);


    }
}

test_cases($con);
```
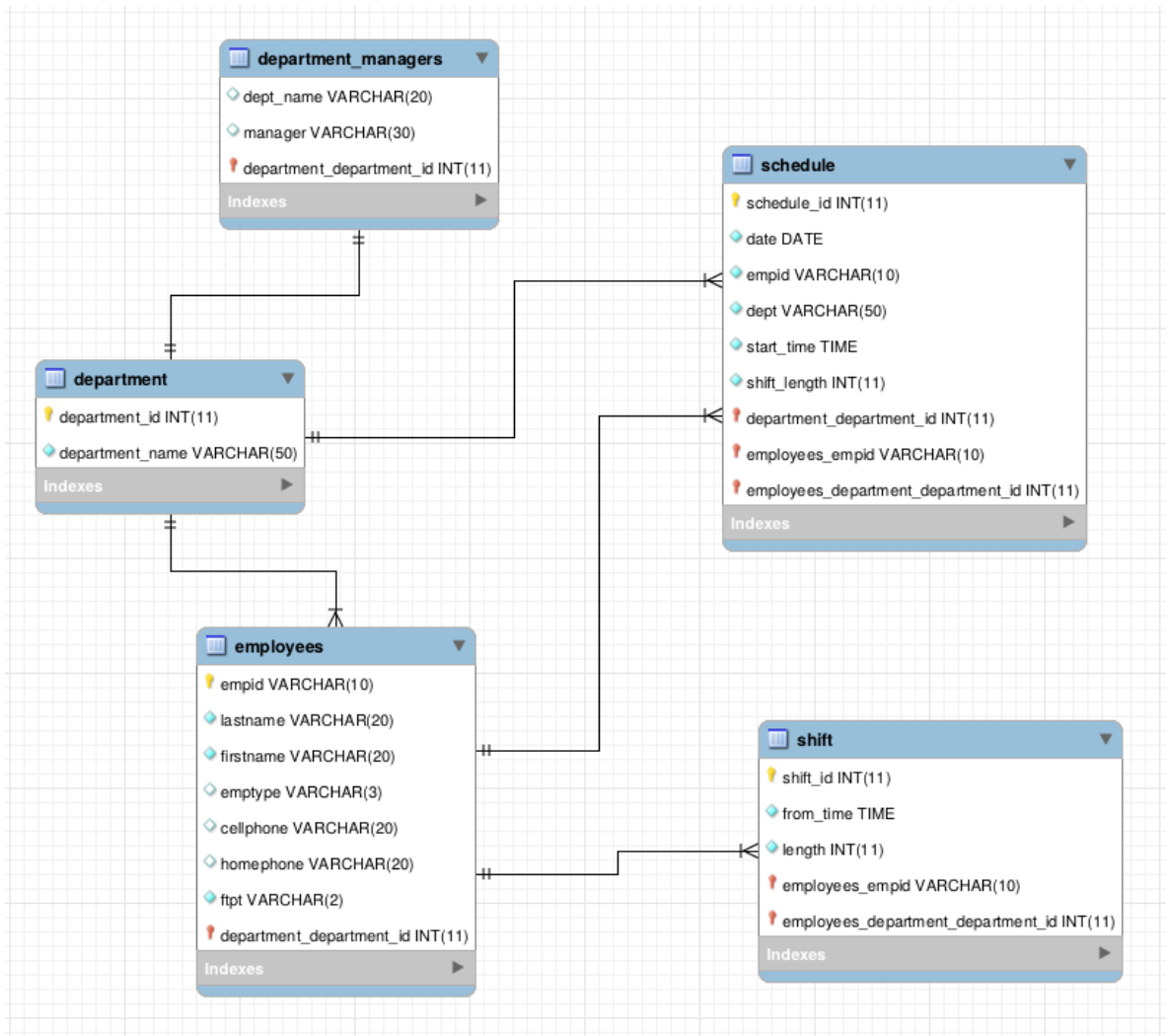
ER Diagram

Show and Describe Tables [(click for demo)](#)

php code

```
In [ ]: function showTables($con)
        {
            $query = "SHOW TABLES";
            $result = mysqli_query($con, $query);

            echo "<div style='margin-left: 30%; margin-right: auto'><h3>Show Tables:</h3></div>";

            while ($row = mysqli_fetch_assoc($result)) {
                foreach ($row as $table) {
                    echo "<center><h4>$table</h4></center>";
```

```php
            describeTable($con, $table);
            echo "<br>";
        }
    }
}


function describeTable($con, $table)
{
    $query = "DESCRIBE $table";
    $result = mysqli_query($con, $query);

    echo "<table class='table table-striped' style='text-align: center' border=1>";

    while($row = mysqli_fetch_array($result)) {
        echo "<tr>\n";
        echo "<td>{$row['Field']} - {$row['Type']}</td>";
        echo "</tr>\n";
    }
    echo "</table>";
}


showTables($con);
```

Show Tables:

department

department_id - int(11)
department_name - varchar(50)

department_managers

dept_name - varchar(20)
manager - varchar(30)

employees

empid - varchar(10)
lastname - varchar(20)
firstname - varchar(20)
emptype - varchar(3)
cellphone - varchar(20)
homephone - varchar(20)
ftpt - varchar(2)

schedule

schedule_id - int(11)
date - date
empid - varchar(10)
dept - varchar(50)
start_time - time
shift_length - int(11)

shift

shift_id - int(11)
from_time - time
length - int(11)

Test case: randomly schedule employees (click for demo)

display test results

A capture of the PHP program executing, showing multiple executions of the scheduleSomeone and unSchedule-Someone functions, along with failing appropriate test cases (e.g., no one of that type is needed in this department and that date and shift).

Case 1: Try to schedule someone who has already been scheduled and unschedule someone who has not been scheduled.

Test 1:

Schedule Case 1:

Department: ONCOLOGY

Date: 10-03-2018

EmployeeID: 878397

StartTime: 23:00:00

Employee *Mikel Whitmarsh* has already been scheduled on 2018-10-03:

schedule_id	date	empid	dept	start_time	shift_length
4511	2018-10-03	878397	ONCOLOGY	19:00:00	12

Unschedule Case 1:

Department: EMERGENCY

Date: 09-30-2018

EmployeeID: 853537

StartTime: 23:00:00

Employee *Manie Zaragoza* has not been scheduled, please double check!!

Test 3:

Schedule Case 3:

Department: PEDIATRICS

Date: 09-28-2018

EmployeeID: 945540

StartTime: 07:00:00

Employee *Roderick Stager* has already been scheduled on 2018-09-28:

schedule_id	date	empid	dept	start_time	shift_length
1421	2018-09-28	945540	PEDIATRICS	15:00:00	8

Unschedule Case 3:

Department: ONCOLOGY

Date: 10-01-2018

EmployeeID: 995636

StartTime: 07:00:00

Employee *Deanna Pye* has not been scheduled, please double check!!

Case 2: Successfully schedule someone and unschedule someone who has not been scheduled.

Test 2:

Schedule Case 2:

Department: PEDIATRICS

Date: 10-03-2018

EmployeeID: 995636

StartTime: 19:00:00

Deanna Pye **is open for schedule on 2018-10-03 starting from 19:00:00 in PEDIATRICS**

SQL Query: INSERT INTO schedule (date, empid, dept, start_time, shift_length) VALUES ('2018-10-03', '995636', 'PEDIATRICS', '19:00:00', 12)

Employee *Deanna Pye* is scheduled on 2018-10-03 starting from 19:00:00 for 12 hours in PEDIATRICS

Unschedule Case 2:

Department: PEDIATRICS

Date: 10-01-2018

EmployeeID: 853537

StartTime: 19:00:00

Employee *Manie Zaragoza* has not been scheduled, please double check!!

Case 3: Try to schedule someone who is not in the system and unschedule someone who has not been scheduled.

Test 4:

Schedule Case 4:

Department: EMERGENCY

Date: 10-03-2018

EmployeeID: 123456

StartTime: 23:00:00

No Employee *123456* in the database! Please double check!

Unschedule Case 4:

Department: EMERGENCY

Date: 10-03-2018

EmployeeID: 898057

StartTime: 23:00:00

Employee *Lorenzo Blagg* has not been scheduled, please double check!!

Case 4: Try to schedule someone who has already been scheduled and successfully unschedule someone.

Test 5:

Schedule Case 5:

Department: PEDIATRICS

Date: 09-24-2018

EmployeeID: 854480

StartTime: 23:00:00

Employee *Remona Locke* has already been scheduled on 2018-09-24:

schedule_id	date	empid	dept	start_time	shift_length
4501	2018-09-24	854480	PEDIATRICS	15:00:00	8

Unschedule Case 5:

Department: ONCOLOGY

Date: 09-30-2018

EmployeeID: 878397

StartTime: 23:00:00

Employee *Mikel Whitmarsh* is successfully unscheduled on 2018-09-30 in the ONCOLOGY department.

Note*: I did not change much about the database design and the ER disgram, but I add some test functions as required in the instruction and make the demo site better than the previous assignment.