Mestrado em Engenharia Eletrotécnica e de Computadores

Sistemas de Informação e Base de Dados

Centro de Cuidados Médicos
Parte III

Grupo 50:
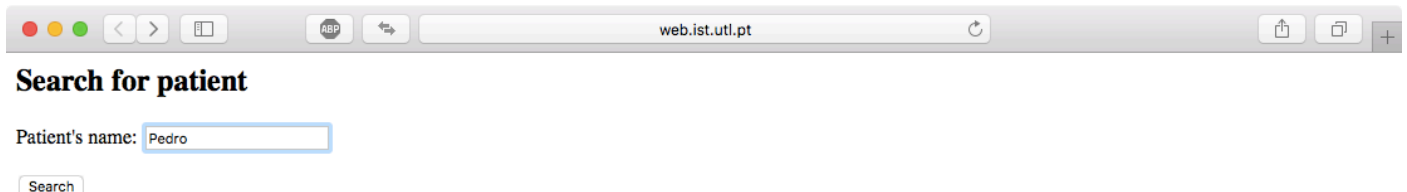Filipe Novais – 75253
João Brito – 75458
Ana Costa – 75999

26 de Outubro de 2016

1.

A pesquisa de pacientes na base de dados é efetuada recorrendo a duas páginas web (search_patient.html e search_patient.php). A primeira consiste num formulário para saber qual o nome que se quer procurar. A segunda apresenta o resultado do *query* feito à base de dados e permite escolher uma de três opções: "Home" (Voltar ao início); "Schedule appointment for existing patient"; "Schedule appointment for new patient".

search_patient.html

```
<html>
      <body>
            <form action="search_patient.php">
                  <h2>Search for patient</h2>
                  <p>Patient's name: <input type="text" name="patient_name"/></p>
                  <p><input type="submit" value="Search"/></p>
            </form>
      </body>
</html>
```


search_patient.php

```
<html>
      <body>
            <h2>Search for patient</h2>
            <?php

                  $host="db.ist.utl.pt";
                  $user="ist175352";
                  $pass="jvsq3405";
                  $dsn="mysql:host=$host; dbname=$user";

                  try{
                        $connection= new PDO($dsn,$user,$pass);
                  }catch(PDOException $exception){
                        echo("<p>Error: ");
                        echo($exception->getMessage());
                        echo("</p>");
                        exit();
                  }

                  $patient_name =$_REQUEST['patient_name'];

                  $sql="SELECT * FROM patient WHERE name like '%$patient_name%' ORDER BY patient_id";

                  $result = $connection->query($sql);
                  if ($result == FALSE){
                        $info = $connection->errorInfo();
                        echo("<p>Error: {$info[2]}</p>");
```

```php
                exit();
        }

        $nrows=$result->rowCount();
        if($nrows <> 0){
                echo("<table border=\"1\">");

    echo("<tr><td>patient_id<td>name</td><td>birthday</td><td>address</td></tr>");
                foreach($result as $row){
                        echo("<tr><td>");
                        echo($row['patient_id']);
                        echo("</td><td>");
                        echo($row['name']);
                        echo("</td><td>");
                        echo($row['birthday']);
                        echo("</td><td>");
                        echo($row['address']);
                        echo("</td></tr>");
                }
                echo("</table>");
        }else{
                echo("<p>No patient with that name.</p>");
        }

        $connection = NULL;
?>

<form action="schedule_appointment_1.php">
        <p><input type="submit" value="Schedule appointment for existing patient"/></p>
</form>

<form action="insert_patient_1.php">
        <p><input type="submit" value="Schedule appointment for new patient"/></p>
</form>

<form action="search_patient.html">
        <p><input type="submit" value="Home"/></p>
</form>
        </body>
</html>
```


Search for patient

patient_id	name	birthday	address
P003	Pedro Ribeiro	1986-02-02	Rua do Lixo
P005	Joaquim Pedrosa	1952-09-24	Rua do Palhaco

Schedule appointment for existing patient

Schedule appointment for new patient

Home

2.

A marcação de uma consulta para um paciente previamente registado na base de dados é feita recorrendo a duas páginas web (schedule_appointment_1.php, schedule_appointment_2.php). A primeira consiste num formulário a preencher com os dados da consulta que se pretende marcar. Optou-se por utilizar um formulário dinâmico, para que as escolhas dos campos médico e paciente sejam feitas recorrendo a um menu *dropdown*. A segunda página apresenta o resultado do *query* feito à base de dados, mostrando os dados da consulta no caso de ter sido adicionada à base de dados com sucesso, ou uma mensagem de erro caso contrário. Verifica-se que todos os campos do formulário foram preenchidos e que a data da consulta tem formato válido e se trata de um dia útil.

schedule_appointment_1.php
```
<html>
      <body>
            <form action="schedule_appointment_2.php">
                  <h2>Schedule appointment for existing patient</h2>
                  <h3>Appointment details</h3>
                  <p>Patient:
                        <select name="patient_id">
                        <?php
                              $host="db.ist.utl.pt";
                              $user="ist175352";
                              $pass="jvsq3405";
                              $dsn="mysql:host=$host; dbname=$user";
                              try{
                                    $connection = new PDO($dsn,$user,$pass);
                              }catch(PDOException $exception){
                                    echo("<p>Error: ");
                                    echo($exception->getMessage());
                                    echo("</p>");
                                    exit();
                              }

                              $sql = "SELECT patient_id, name FROM patient ORDER BY name";

                              $result = $connection->query($sql);
                              if ($result == FALSE){
                                    $info = $connection->errorInfo();
                                    echo("<p>Error: {$info[2]}</p>");
                                    exit();
                              }
                              foreach($result as $row){
                                    $patient_id = $row['patient_id'];
                                    $name = $row['name'];
                                    echo("<option                              value=\"$patient_id\">$name
($patient_id)</option>");
                              }
                              $connection = NULL;
                        ?>
                        </select>
                  </p>
                  <p>Doctor:
                        <select name="doctor_id">
                        <?php
                              $host="db.ist.utl.pt";
                              $user="ist175458";
                              $pass="levr7243";
                              $dsn="mysql:host=$host; dbname=$user";
                              try{
```

```php
                        $connection = new PDO($dsn,$user,$pass);
                }catch(PDOException $exception){
                        echo("<p>Error: ");
                        echo($exception->getMessage());
                        echo("</p>");
                        exit();
                }

                $sql = "SELECT doctor_id, name, specialty FROM doctor ORDER BY
specialty";

                        $result = $connection->query($sql);
                        if ($result == FALSE){
                                $info = $connection->errorInfo();
                                echo("<p>Error: {$info[2]}</p>");
                                exit();
                        }
                        foreach($result as $row){
                                $doctor_id = $row['doctor_id'];
                                $name = $row['name'];
                                $specialty = $row['specialty'];
                                echo("<option        value=\"$doctor_id\">$specialty        $name
($doctor_id)</option>");
                        }
                        $connection = NULL;
                ?>
                </select>
        </p>
        <p>Day (YYYY-MM-DD): <input type="text" name="showdate"/></p>
        <p>Office: <input type="text" name="office"/></p>
        <p><input type="submit" value="Schedule"/></p>
</form>

<form action="search_patient.html">
        <p><input type="submit" value="Home"/></p>
</form>

        </body>
</html>
```
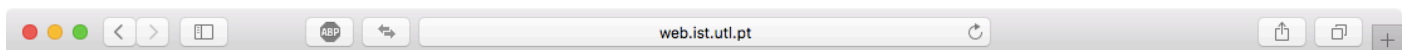

Schedule appointment for existing patient

Appointment details

Patient: [Pedro Ribeiro (P003) ⬍]

Doctor: [Pediatria Paulo Nolmen (D004) ⬍]

Day and time (YYYY-MM-DD HH:MI:SS): [2016-11-30 15:00]

Office: [24]

[Schedule]

[Home]

schedule_appointment_2.php

```php
<html>
    <body>
        <h2>Schedule appointment for existing patient</h2>
        <?php
            $host="db.ist.utl.pt";
            $user="ist175352";
            $pass="jvsq3405";
            $dsn="mysql:host=$host; dbname=$user";

            try{
                $connection= new PDO($dsn,$user,$pass);
            }catch(PDOException $exception){
                echo("<p>Error: ");
                echo($exception->getMessage());
                echo("</p>");
                exit();
            }

            $patient_id =$_REQUEST['patient_id'];
            $doctor_id =$_REQUEST['doctor_id'];
            $showdate =$_REQUEST['showdate'];
            $office =$_REQUEST['office'];

            $sql="INSERT INTO appointment VALUES ('$patient_id', '$doctor_id', '$showdate', '$office')";

            $nrows = $connection->exec($sql);
            if($showdate == '' or $office == ''){
                if ($showdate =='') {
                    echo("<p>Please insert Day</p>");
                    echo("<p>Appointment could not be scheduled!</p>");
                }
                else if ($office == '') {
                    echo("Please insert Office</p>");
                    echo("<p>Appointment could not be scheduled!</p>");
                }
            }
            else if($nrows<>0){
                echo("<p>Appointment successfully scheduled:</p>");
                $sql="SELECT * FROM appointment WHERE patient_id='$patient_id' AND doctor_id='$doctor_id' AND showdate='$showdate'";

                $result = $connection->query($sql);

                echo("<table border=\"1\">");

    echo("<tr><td>patient_id<td>doctor_id</td><td>showdate</td><td>office</td></tr>");
                foreach($result as $row){
                    echo("<tr><td>");
                    echo($row['patient_id']);
                    echo("</td><td>");
                    echo($row['doctor_id']);
                    echo("</td><td>");
                    echo($row['showdate']);
                    echo("</td><td>");
                    echo($row['office']);
                    echo("</td></tr>");
                }
```
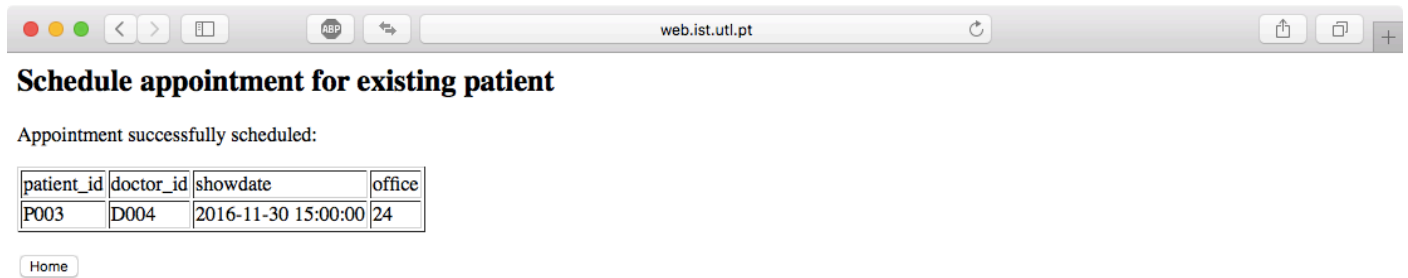
```php
                    echo("</table>");
            }else{
                    echo("<p>Invalid Day format</p>");
                    echo("<p>Appointment could not be scheduled!</p>");
            }
            $connection = NULL;
        ?>

        <form action="search_patient.html">
            <p><input type="submit" value="Home"/></p>
        </form>
    </body>
</html>
```

Schedule appointment for existing patient

Appointment successfully scheduled:

patient_id	doctor_id	showdate	office
P003	D004	2016-11-30 15:00:00	24

Home

3.

A marcação de uma consulta para um novo paciente é feita com duas páginas web (insert_patient_1.php, insert_patient_2.php). A primeira consiste num formulário a preencher com os dados do novo paciente e da consulta que se pretende marcar. Optou-se por utilizar um formulário dinâmico, para que a escolha do campo médico seja feita recorrendo a um menu *dropdown*. A segunda página apresenta o resultado do *query* feito à base de dados, mostrando os dados da consulta no caso de ter sido adicionada à base de dados com sucesso, ou uma mensagem de erro caso contrário. O registo do paciente na base de dados e a marcação da consulta são feitas numa só transação. Verifica-se que todos os campos do formulário foram preenchidos e que a data da consulta tem formato válido e se trata de um dia útil.

insert_patient_1.php
```php
<html>
    <body>
        <form action="insert_patient_2.php">
            <h2>Schedule appointment for new patient</h2>
            <h3>New patient information</h3>
            <p>Patient's id: <input type="text" name="patient_id"/></p>
            <p>Patient's name: <input type="text" name="name"/></p>
            <p>Patient's birthday (YYYY-MM-DD): <input type="text" name="birthday"/></p>
            <p>Patient's address: <input type="text" name="address"/></p>
            <h3>Appointment details</h3>
            <p>Doctor:
                <select name="doctor_id">
                <?php
                    $host="db.ist.utl.pt";
                    $user="ist175352";
                    $pass="jvsq3405";
                    $dsn="mysql:host=$host; dbname=$user";
                    try{
                        $connection = new PDO($dsn,$user,$pass);
                    }catch(PDOException $exception){
                        echo("<p>Error: ");
                        echo($exception->getMessage());
                        echo("</p>");
```

```php
                                exit();
                }
                $sql = "SELECT doctor_id, name, specialty FROM doctor ORDER BY specialty";

                $result = $connection->query($sql);
                if ($result == FALSE){
                        $info = $connection->errorInfo();
                        echo("<p>Error: {$info[2]}</p>");
                        exit();
                }
                foreach($result as $row){
                        $doctor_id = $row['doctor_id'];
                        $name = $row['name'];
                        $specialty = $row['specialty'];
                        echo("<option value=\"$doctor_id\">$specialty $name ($doctor_id)</option>");
                }
                $connection = NULL;
            ?>
            </select>
        </p>
        <p>Day (YYYY-MM-DD): <input type="text" name="showdate"/></p>
        <p>Office: <input type="text" name="office"/></p>
        <p><input type="submit" value="Schedule"/></p>
    </form>

    <form action="search_patient.html">
        <p><input type="submit" value="Home"/></p>
    </form>
    </body>
</html>
```
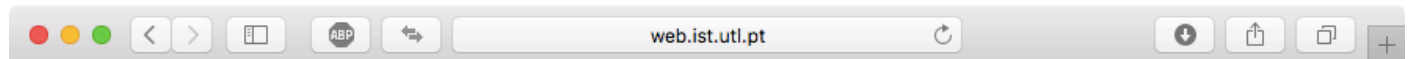

Schedule appointment for new patient

New patient information

Patient's id: `P015`

Patient's name: `Rita Costa`

Patient's birthday (YYYY-MM-DD): `1994-08-23`

Patient's address: `Rua Amarela`

Appointment details

Doctor: `Ortopedia Pedro Ossoso (D001)`

Day (YYYY-MM-DD): `2016-11-30`

Office: `O-012`

Schedule

Home

insert_patient_2.php

```php
<html>
    <body>
        <h2>Schedule appointment for new patient</h2>
        <?php
            $host="db.ist.utl.pt";
            $user="ist175352";
            $pass="jvsq3405";
            $dsn="mysql:host=$host; dbname=$user";
            try{
                $connection= new PDO($dsn,$user,$pass);
            }catch(PDOException $exception){
                echo("<p>Error: ");
                echo($exception->getMessage());
                echo("</p>");
                exit();
            }
            $patient_id =$_REQUEST['patient_id'];
            $name =$_REQUEST['name'];
            $birthday =$_REQUEST['birthday'];
            $address =$_REQUEST['address'];
            $doctor_id =$_REQUEST['doctor_id'];
            $showdate =$_REQUEST['showdate'];
            $office =$_REQUEST['office'];

            $sql="INSERT INTO patient VALUES ('$patient_id', '$name', '$birthday', '$address')";
            $connection->beginTransaction();
            $nrows = $connection->exec($sql);

            if($patient_id =='' or $name =='' or $birthday =='' or $address ==''){
                if ($patient_id =='') {
                    echo("<p>Please insert Patient's id</p>");
                    echo("<p>Could not register patient!</p>");
                }
                else if ($name == '') {
                    echo("Please insert Patient's name</p>");
                    echo("<p>Could not register patient!</p>");
                }
                else if ($birthday == '') {
                    echo("Please insert Patient's birthday</p>");
                    echo("<p>Could not register patient!</p>");
                }
                else if ($address == '') {
                    echo("Please insert Patient's address</p>");
                    echo("<p>Could not register patient!</p>");
                }
                $connection->rollback();
            }
            else if($nrows<>0){
                $sql="INSERT INTO appointment VALUES ('$patient_id', '$doctor_id', '$showdate', '$office')";
                $nrows = $connection->exec($sql);
                if($showdate == '' or $office == ''){
                    if ($showdate =='') {
                        echo("<p>Please insert Day</p>");
                        echo("<p>Appointment could not be scheduled!</p>");
                    }
                    else if ($office == '') {
```

```php
                                echo("Please insert Office</p>");
                                echo("<p>Appointment could not be scheduled!</p>");
                                }
                        }
                        else if($nrows<>0){
                                $connection->commit();
                                echo("<p>Appointment successfully scheduled:</p>");
                                $sql="SELECT * FROM appointment WHERE patient_id='$patient_id'
AND doctor_id='$doctor_id' AND showdate='$showdate'";
                                $result = $connection->query($sql);
                                echo("<table border=\"1\">");

        echo("<tr><td>patient_id<td>doctor_id</td><td>showdate</td><td>office</td></tr>");
                                foreach($result as $row){
                                        echo("<tr><td>");
                                        echo($row['patient_id']);
                                        echo("</td><td>");
                                        echo($row['doctor_id']);
                                        echo("</td><td>");
                                        echo($row['showdate']);
                                        echo("</td><td>");
                                        echo($row['office']);
                                        echo("</td></tr>");
                                }
                                echo("</table>");
                        }else{
                                $connection->rollback();
                                echo("<p>Invalid Day format</p>");
                                echo("<p>Appointment could not be scheduled!</p>");
                        }
                }else{
                        $connection->rollback();
                        echo("<p>Invalid Patient's birthday format</p>");
                        echo("<p>Could not register patient!</p>");
                }
                $connection = NULL;
        ?>

        <form action="search_patient.html">
                <p><input type="submit" value="Home"/></p>
        </form>
    </body>
</html>
```
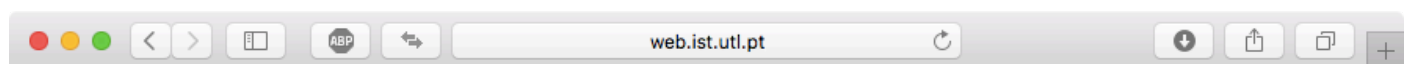
---

web.ist.utl.pt

Schedule appointment for new patient

Appointment successfully scheduled:

patient_id	doctor_id	showdate	office
P015	D001	2016-11-30	O-012

[Home]

Nota

A verificação do formato válido da data, e se se trata de um dia útil é feita recorrendo a dois *triggers* (antes de inserir ou antes de atualizar uma entrada na tabela appointment).

triggers_appointment.sql

```
drop trigger if exists check_date_insert;
delimiter $$
create trigger check_date_insert before insert on patient
for each row
begin
        if(isnull (DATE(new.birthday))=1 or new.birthday='0000-00-00') then
                call invalid_date();
        end if;
end$$
delimiter ;

drop trigger if exists check_date_update;
delimiter $$
create trigger check_date_update before update on patient
for each row
begin
        if(isnull (DATE(new.birthday))=1 or new.birthday='0000-00-00') then
                call invalid_date();
        end if;
end$$
delimiter ;
```