

# PROJECTO DE SISTEMAS DE INFORMAÇÃO E BASES DE DADOS

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PROJECT ASSIGNMENT - PART III - REPORT

## Simple Web application using HTML and PHP

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# 1 Introduction

In this third and final delivery of the project it was asked to develop a simple Web-based application to perform the requested tasks, using HTML and PHP. The application is be able to act upon the database created in the previous parts of the project, preforming all the tasks requested in the project statement.

## 2 Development

In this section we'll explain the code written to ensure each of the requested tasks were delivered.

### 2.1 Scheduling Patient

The first task requested was to create a set of Web pages to search the database for a patient by name, given a (portion of the) patient's name and display the records of all patients with matching names. On the displayed result, we must include the possibility of registering a new patient if no matching names are found. Our group managed to include all of the features requested in this section as you can see in our code attached to this submission. We also protected our code from SQL Injection using prepared parameters to all queries to the database that included user input data. We intentionally allowed the user to search non letter symbols as names in our database are allowed to use those symbols. In order to test the set of Web pages created by our group we recommend that you first navigate first to 'patientSearchForm.html' and then use the hyperlinks and instructions given in each page to continue.

Below are presented some screenshots of the different webpages created.



Figure 2.1: patientSearchForm.html

number	name	birthday	address
2321424	<a href="#">Joao Alves</a>	1995-03-31	Rua do Ouro, 3
28484755	<a href="#">Angela Martins</a>	1930-04-19	Rua do Alecrim, 16
38958323	<a href="#">Jack Ripper</a>	1947-01-23	Rua de Londres, 69
39040532	<a href="#">Ines Casa De Agua</a>	1895-03-31	Rua de Salem, 66
39495830	<a href="#">Joaquim Hyde</a>	1831-07-25	Rua do Parque, 7
48529837	<a href="#">Costa Pereira</a>	1929-12-22	Rua do Eucalipto, 12
52935753	<a href="#">Germano Figueiredo</a>	1932-12-23	Rua do Jivago, 21
53892894	<a href="#">Fernanda Cruz</a>	1940-10-12	Rua do Sobreiro, 17
84853295	<a href="#">Domiciano Cavem</a>	1932-12-21	Rua do Carvalho, 69
87478283	<a href="#">Mario Coluna</a>	1935-08-06	Rua do Eterno Capitão, 36
89587353	<a href="#">Jose Aguas</a>	1930-11-09	Rua da Cabeça de Ouro, 3
98678233	<a href="#">Eusebio Ferreira</a>	1942-01-25	Rua da Pantera Negra, 72
2147483647	<a href="#">Xico Buarque</a>	1965-03-10	Rua Capitães de Abril, 16

Figure 2.2: patientSearch.php



The screenshot shows a web browser window with the address bar displaying "web.ist.utl.pt/ist178181/patientInsert.html". The page content includes a message "Name not Found.", a heading "Insert New Person on DataBase.", and a form with four input fields: "ID:", "Name:", "Birthday:" (with a placeholder "dd/mm/aaaa"), and "Address:". A "Submeter" button is located at the bottom of the form.

Name not Found.

Insert New Person on DataBase.

ID:

Name:

Birthday:

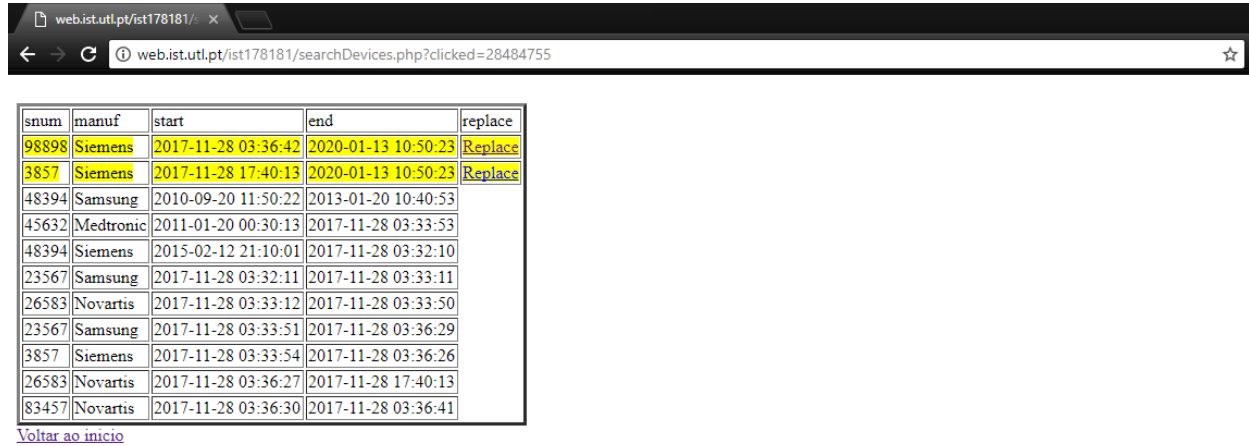
Address:

Figure 2.3: patientInsert.html

## 2.2 Devices

The second task requested in the project statement was to create a set of Web pages to support the interaction of changing the devices currently attached to a patient. Clicking over a patient name in the results page of the previous interaction (section 2.1 of this report), leads to another page listing all the devices worn by the patient over time. The devices currently worn by the patient come one top, highlighted in yellow. Next to a currently worn device there is button "Replace" to lead to another page where the user can "replace" that device by one of the devices of the same manufacturer not presently worn by a patient. When the device replacement is done the Wears table is updated to show that the patient wore that replaced device in a period of time that now ends.

The code we wrote for this can be found attached to this submission.



snum	manuf	start	end	replace
98898	Siemens	2017-11-28 03:36:42	2020-01-13 10:50:23	Replace
3857	Siemens	2017-11-28 17:40:13	2020-01-13 10:50:23	Replace
48394	Samsung	2010-09-20 11:50:22	2013-01-20 10:40:53	
45632	Medtronic	2011-01-20 00:30:13	2017-11-28 03:33:53	
48394	Siemens	2015-02-12 21:10:01	2017-11-28 03:32:10	
23567	Samsung	2017-11-28 03:32:11	2017-11-28 03:33:11	
26583	Novartis	2017-11-28 03:33:12	2017-11-28 03:33:50	
23567	Samsung	2017-11-28 03:33:51	2017-11-28 03:36:29	
3857	Siemens	2017-11-28 03:33:54	2017-11-28 03:36:26	
26583	Novartis	2017-11-28 03:36:27	2017-11-28 17:40:13	
83457	Novartis	2017-11-28 03:36:30	2017-11-28 03:36:41	

[Voltar ao inicio](#)

Figure 2.4: searchDevices.php



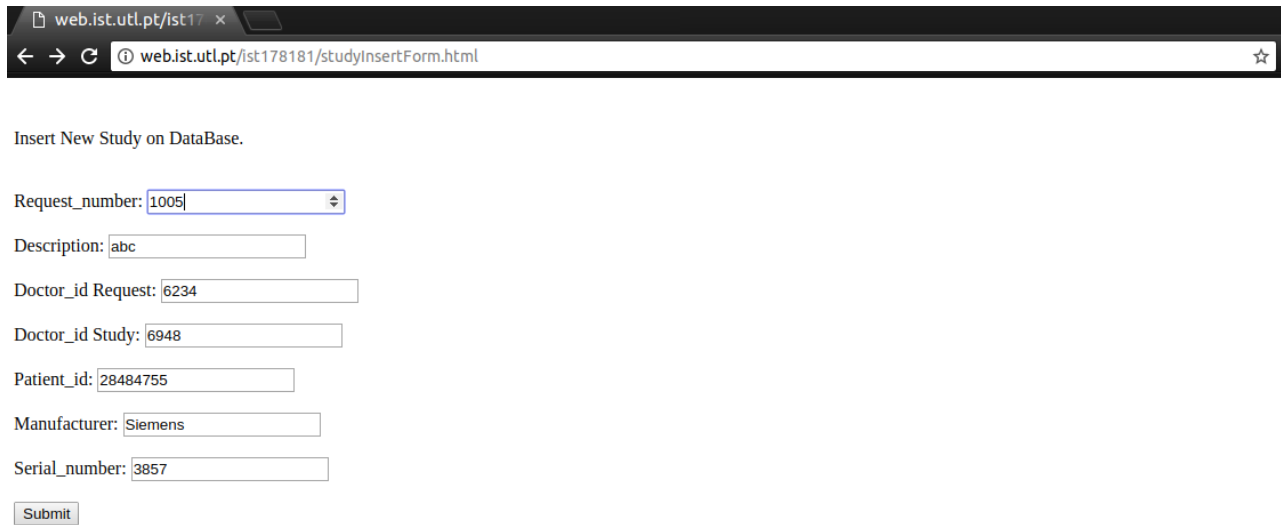
serialNum	manufacturer	Model	Replace
3857	Siemens	B	Replace
34374	Siemens	R	Replace
48394	Siemens	Z	Replace
77823	Siemens	A	Replace
98898	Siemens	Y	Replace

Figure 2.5: findDevices.php

## 2.3 New Study

This part of the assignment required us to create a set of Web pages to support the interaction of, upon creating new study, also creating a new series. The `base_url` is automatically assigned (not input by the user), as a string of the form `http://your-homepage/series/series_id/`. The creation of the study and series is a single transaction. If the creation of the series fails, then the registration of the study is cancelled. A message with text “study created”/“study not created”, depending on the success, is included in the result page. The code developed can be found attached to this submission.

We present below some screenshots of the web pages developed.



The screenshot shows a web browser window with the address bar displaying `web.ist.utl.pt/ist178181/studyInsertForm.html`. The page content includes the heading "Insert New Study on DataBase." followed by several input fields: "Request\_number:" with the value "1005", "Description:" with the value "abc", "Doctor\_id Request:" with the value "6234", "Doctor\_id Study:" with the value "6948", "Patient\_id:" with the value "28484755", "Manufacturer:" with the value "Siemens", and "Serial\_number:" with the value "3857". A "Submit" button is located at the bottom left of the form.

Figure 2.6: studyInsertForm.php



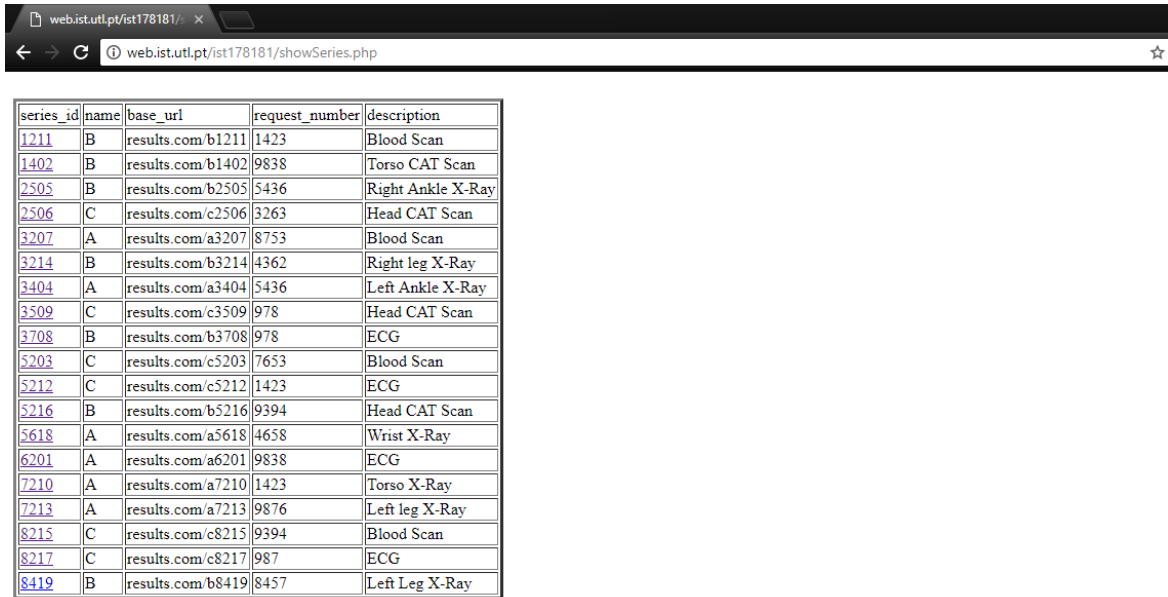
The screenshot shows a web browser window with the address bar displaying `web.ist.utl.pt/ist178181/studyInsert.php`. The page content displays the message "Study Created" in a simple font.

Figure 2.7: studyInsert.php

## 2.4 Add Region

In the last part of the assignment we were requested to create a set of Web pages to add a region to an element of a series. When a just inserted region didn't overlap with any of the regions of the study of the patient, the result page after completing the insertion must have displayed a message alerting for new clinical evidence for the patient. It then gives you the option to return to the page where all the Regions of the selected element of a selected series of the patient are displayed. The code developed can be found attached to this submission.

We present below some screenshots of the web pages developed.



series_id	name	base_url	request_number	description
<a href="#">1211</a>	B	results.com/b1211	1423	Blood Scan
<a href="#">1402</a>	B	results.com/b1402	9838	Torso CAT Scan
<a href="#">2505</a>	B	results.com/b2505	5436	Right Ankle X-Ray
<a href="#">2506</a>	C	results.com/c2506	3263	Head CAT Scan
<a href="#">3207</a>	A	results.com/a3207	8753	Blood Scan
<a href="#">3214</a>	B	results.com/b3214	4362	Right leg X-Ray
<a href="#">3404</a>	A	results.com/a3404	5436	Left Ankle X-Ray
<a href="#">3509</a>	C	results.com/c3509	978	Head CAT Scan
<a href="#">3708</a>	B	results.com/b3708	978	ECG
<a href="#">5203</a>	C	results.com/c5203	7653	Blood Scan
<a href="#">5212</a>	C	results.com/c5212	1423	ECG
<a href="#">5216</a>	B	results.com/b5216	9394	Head CAT Scan
<a href="#">5618</a>	A	results.com/a5618	4658	Wrist X-Ray
<a href="#">6201</a>	A	results.com/a6201	9838	ECG
<a href="#">7210</a>	A	results.com/a7210	1423	Torso X-Ray
<a href="#">7213</a>	A	results.com/a7213	9876	Left leg X-Ray
<a href="#">8215</a>	C	results.com/c8215	9394	Blood Scan
<a href="#">8217</a>	C	results.com/c8217	987	ECG
<a href="#">8419</a>	B	results.com/b8419	8457	Left Leg X-Ray

Figure 2.8: showSeries.php



series_id	elem_index
2506	<a href="#">1</a>
2506	<a href="#">2</a>

Figure 2.9: showElements.php



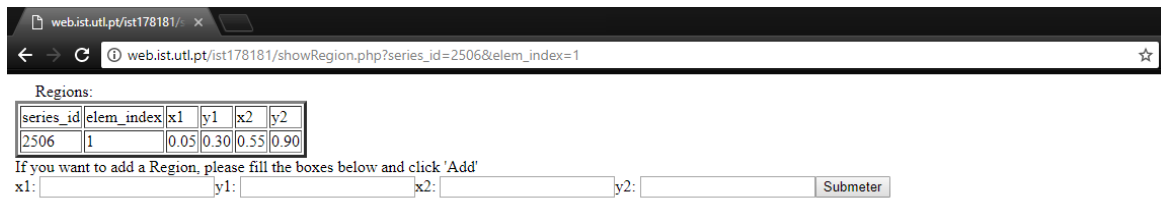


Figure 2.10: showRegion.php



Figure 2.11: addRegion.php

## 3 Annex

### 3.1 PDO\_connection.php

```
1 <?php
2     $host = "db.tecnico.ulisboa.pt";
3     $user = "ist178181";
4     $pass = "fzic3086";
5     $dsn = "mysql:host=$host;dbname=$user";
6     try
7     {
8         $connection = new PDO($dsn, $user, $pass);
9     }
10    catch(PDOException $exception)
11    {
12        echo("<p>Error: ");
13        echo($exception->getMessage());
14        echo("</p>");
15        exit();
16    }
17
18 ?>
```

## 3.2 patientSearchForm.html

```
1 <html>
2   <head>
3     <meta charset="UTF-8">
4   </head>
5   <head>
6     <title></title>
7   </head>
8   <body>
9
10     <form action="patientSearch.php" method="post">
11       Name: <input type="text" name="name"><br>
12       <input type="submit">
13     </form>
14   </body>
15 </html>
```

### 3.3 patientInsert.html

```
1 <html>
2 <head>
3   <meta charset="UTF-8">
4 </head>
5 <body>
6   Name not Found.<br><br>
7   Insert New Person on DataBase. <br><br><br>
8
9
10   <form action="patientInsert.php" method="post">
11     ID: <input type="number" name="id"><br><br>
12     Name: <input type="text" name="name"><br><br>
13     Birthday: <input type="date" name="birthday"><br><br>
14     Address: <input type="text" name="address"><br><br>
15     <input type="submit">
16   </form>
17
18   <br>
19 </body>
20 </html>
```

### 3.4 patientInsert.php

```
1 <html>
2   <head>
3     <meta charset="utf-8" />
4   </head>
5   <body>
6     <?php
7
8       $PersonID=$_POST["id"];
9       $PersonName=$_POST["name"];
10      $PersonBirthday=$_POST["birthday"];
11      $PersonAddress=$_POST["address"];
12
13      echo("\nFicheiro abriu\n");
14
15      require_once __DIR__ . '/PDO_connection.php';
16
17      $result = $connection->prepare("Insert INTO Patient(number,name,birthday,address) values
18        (?, ?, ?, ?)");
19      $result->bindParam(1, $PersonID, PDO::PARAM_INT);
20      $result->bindParam(2, $PersonName, PDO::PARAM_STR, 30);
21      $result->bindParam(3, $PersonBirthday, PDO::PARAM_STR, 30);
22      $result->bindParam(4, $PersonAddress, PDO::PARAM_STR, 30);
23      $result->execute();
24
25      if ($result == FALSE)
26      {
27        $info = $connection->errorInfo();
28        echo("<p>Error: {$info[2]}</p>");
29        exit();
30      }
31
32      header('Location: patientSearchForm.html');
33
34      $connection = null;
35
36
37    ?><br>
38  </body>
39 </html>
```

### 3.5 patientSearch.php

```
1 <html>
2 <head>
3   <meta charset="UTF-8">
4 </head>
5 <body>
6   <?php
7
8     $PersonName=$_POST["name"];
9     $pname="%".$PersonName."%";
10    require_once __DIR__ . '/PDO_connection.php';
11
12    $result = $connection->prepare("SELECT * FROM Patient where Patient.name like ?");
13    $result->bindParam(1, $pname, PDO::PARAM_STR, 30);
14    $result->execute();
15
16    if ($result == FALSE)
17    {
18      $info = $connection->errorInfo();
19      echo("<p>Error: {$info[2]}</p>");
20      exit();
21    }
22
23    $nrows = $result->rowCount();
24
25    if($nrows == 0){
26      $connection = null;
27
28      header('Location: patientInsert.html');
29    }
30
31    else{
32      echo("<table border=\"1\">");
33      echo("<tr><td>number</td><td>name</td><td>birthday</td><td>address</td></tr>");
34
35      foreach($result as $row)
36      {
37        echo("<tr><td>");
38        echo($row['number']);
39        echo("</td><td>");
40        echo('<a href="http://web.ist.utl.pt/'. $user .'/searchDevices.php?clicked='.$row[
41          number].'">'. $row['name']. '</a>');
42        echo("</td><td>");
43        echo($row['birthday']);
44        echo("</td><td>");
45        echo($row['address']);
46        echo("</td>");
47      }
48      echo("</table>");
49    }
50
51    $connection = null;
52
53    ?><br>
54  </body>
55 </html>
```

### 3.6 searchDevices.php

```
1 <html>
2 <head>
3   <meta charset="UTF-8">
4 </head>
5 <body>
6   <?php
7     if(isset($_GET['clicked'])) {
8       $clicked = $_GET['clicked'];
9     }
10
11     require_once __DIR__ . '/PDO_connection.php';
12
13     $result=$connection->prepare("SELECT Wears.snum, Wears.manuf, Wears.start, Wears.end
14       FROM Wears, Patient WHERE Wears.patient=Patient.number AND Patient.number=? AND
15       Wears.start<=? AND Wears.end>? ORDER BY Wears.start ASC");
16     $now=date('Y-m-d H:i:s');
17     $result->bindParam(1, $clicked, PDO::PARAM_INT);
18     $result->bindParam(2, $now, PDO::PARAM_STR, 30);
19     $result->bindParam(3, $now, PDO::PARAM_STR, 30);
20     $result->execute();
21
22     if($result==FALSE)
23     {
24       $info = $connection->errorInfo();
25       echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
26       exit();
27     }else{
28       echo("<table border='3'>");
29       echo("<tr><td>snum</td><td>manuf</td><td>start</td><td>end</td><td>replace</td></tr>");
30       foreach($result as $row)
31       {
32         echo("<tr><td><mark>");
33         echo($row['snum']);
34         echo("</mark></td><td><mark>");
35         echo($row['manuf']);
36         echo("</mark></td><td><mark>");
37         echo($row['start']);
38         echo("</mark></td><td><mark>");
39         echo($row['end']);
40         echo("</mark></td><td><mark>");
41         echo('<a href="http://web.ist.utl.pt/'. $user.'/findDevices.php?PatientNumber='.
42           $clicked.'&StartOld='.$row[start]. '&EndOld='.$row[end]. '&SnumOld='.$row[snum].
43           '&ManufOld='.$row[manuf].'"> Replace </a>');
44         echo("</mark></td></tr>");
45       }
46     }
47
48     $result2=$connection->prepare("SELECT Wears.snum, Wears.manuf, Wears.start, Wears.end
49       FROM Wears, Patient WHERE Wears.patient=Patient.number AND Patient.number=? AND
50       NOT(Wears.start<=? AND Wears.end>?) ORDER BY Wears.start ASC");
51
52     $result2->bindParam(1, $clicked, PDO::PARAM_INT);
53     $result2->bindParam(2, $now, PDO::PARAM_STR, 30);
54     $result2->bindParam(3, $now, PDO::PARAM_STR, 30);
55     $result2->execute();
56
57     if($result2==FALSE)
58     {
59       $info2 = $connection->errorInfo();
60       echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
61     }
```

```

56     }else{
57         foreach($result2 as $row2)
58         {
59             echo("<tr><td>");
60             echo($row2['snum']);
61             echo("</td><td>");
62             echo($row2['manuf']);
63             echo("</td><td>");
64             echo($row2['start']);
65             echo("</td><td>");
66             echo($row2['end']);
67             echo("</td></tr>");
68         }
69     }
70     echo("</table>");
71     echo('<a href="http://web.ist.utl.pt/'. $user. '/patientSearchForm.html">Voltar ao
        inicio</a>');
72     $connection = NULL;
73     ?>
74     </body>
75 </html>

```



### 3.7 findDevices.php

```
1  <?php
2  // Start the session
3  session_start();
4  ?>
5  <html>
6  <head>
7      <meta charset="UTF-8">
8  </head>
9      <body>
10         <?php
11             $PatientNumber = $_GET['PatientNumber'];
12             $StartOld = $_GET["StartOld"];
13             $EndOld = $_GET["EndOld"];
14             $SnumOld = $_GET["SnumOld"];
15             $ManufOld = $_GET["ManufOld"];
16
17             $_SESSION["EndOld"] = $EndOld;
18             $_SESSION["StartOld"] = $StartOld;
19             $_SESSION["PatientNumber"] = $PatientNumber;
20             $_SESSION["SnumOld"] = $SnumOld;
21             $_SESSION["ManufOld"] = $ManufOld;
22             $now=date('Y-m-d H:i:s');
23
24             require_once __DIR__ . 'PDO_connection.php';
25
26             $query= "SELECT * from Device where not exists (Select * from Wears where Wears.manuf
                        =Device.manufacturer AND Wears.snum=Device.serialnum AND Wears.start<'$now' AND
                        Wears.end>'$now') AND Device.manufacturer='$ManufOld' ";
27
28             $result = $connection->query($query);
29             if($result==FALSE)
30             {
31                 $info = $connection->errorInfo();
32                 echo("<p>Error: { $info[0]} { $info[1]} { $info[2]}</p>");
33                 exit();
34             }else{
35                 echo("<table border=\"3\">");
36                 echo("<tr><td>serialnum</td><td>manufacturer</td><td>Model</td></tr>");
37                 foreach($result as $row)
38                 {
39                     echo("<tr><td>");
40                     echo($row['serialnum']);
41                     echo("</td><td>");
42                     echo($row['manufacturer']);
43                     echo("</td><td>");
44                     echo($row['model']);
45                     echo("</td><td>");
46                     echo('<a href="http://web.ist.utl.pt/'. $user.'/replaceDevices.php?&SnumNew='.$row[
                        'serialnum']. '&ManufNew='.$row['manufacturer']. '> Replace </a>');
47                     echo("</td></tr>");
48                 }
49                 echo("</table>");
50             }
51             $connection = NULL;
52         ?>
53     </body>
54 </html>
```

### 3.8 replaceDevices.php

```
1  <?php
2  // Start the session
3  session_start();
4  ?>
5  <html>
6  <head>
7      <meta charset="UTF-8">
8  </head>
9      <body>
10         <?php
11             $startold = $_SESSION["StartOld"];
12             $endold = $_SESSION["EndOld"];
13             $PatientNumber = $_SESSION["PatientNumber"];
14             $SnumNew = $_GET['SnumNew'];
15             $ManufNew = $_GET['ManufNew'];
16             $SnumOld = $_SESSION["SnumOld"];
17             $ManufOld = $_SESSION["ManufOld"];
18
19
20             echo("<br>");
21
22             require_once __DIR__ . '/PDO_connection.php';
23
24             $now=date('Y-m-d H:i:s');
25             $result=$connection->prepare("INSERT INTO Period values(?, '2020-01-13 10:50:23')");
26             $result->bindParam(1, $now, PDO::PARAM_STR, 30);
27             $result->execute();
28             echo("Inserted in period");
29
30             if($result==FALSE)
31             {
32                 $info = $connection->errorInfo();
33                 echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
34                 exit();
35             }else{
36                 echo("Inserted in period");
37             }
38
39             $result2=$connection->prepare("DELETE FROM Wears WHERE (Wears.start=? AND Wears.end=?
40                 AND Wears.patient=?)");
41             $result2->bindParam(1, $startold, PDO::PARAM_STR, 30);
42             $result2->bindParam(2, $endold, PDO::PARAM_STR, 30);
43             $result2->bindParam(3, $PatientNumber, PDO::PARAM_INT);
44             $result2->execute();
45
46             if($result2==FALSE)
47             {
48                 $info = $connection->errorInfo();
49                 echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
50                 exit();
51             }else{
52                 echo("Deleted old");
53             }
54
55
56             $result3=$connection->prepare("INSERT INTO Wears ('start', 'end', 'patient', 'snum', '
57                 manuf') values(?, '2020-01-13 10:50:23', ?, ?, ?)");
58             $result3->bindParam(1, $now, PDO::PARAM_STR, 30);
59             $result3->bindParam(2, $PatientNumber, PDO::PARAM_INT);
60             $result3->bindParam(3, $SnumNew, PDO::PARAM_INT);
61             $result3->bindParam(4, $ManufNew, PDO::PARAM_STR, 30);
```

```

61     $result3->execute();
62
63     if($result3==FALSE)
64     {
65         $info = $connection->errorInfo();
66         echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
67         exit();
68     }else{
69         echo("Inserted in table new");
70     }
71
72     $query4="INSERT INTO Period values('$startold', '$now')";
73     $result4 = $connection->query($query4);
74     if($result4==FALSE)
75     {
76         $info = $connection->errorInfo();
77         echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
78         exit();
79     }else{
80         echo("Inserted in table period oldstart new end");
81     }
82
83
84     $query5="INSERT INTO Wears ('start', 'end', 'patient', 'snum', 'manuf') values ('
        $startold', '$now', $PatientNumber, $SnumOld, '$ManufOld')";
85     $result5 = $connection->query($query5);
86     if($result5==FALSE)
87     {
88         $info = $connection->errorInfo();
89         echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
90         exit();
91     }else{
92         echo("Inserted in table old");
93     }
94
95     $connection = NULL;
96     header("Location: searchDevices.php?clicked=".$PatientNumber);
97     ?>
98     </body>
99 </html>

```

### 3.9 studyInsertForm.html

```
1 <html>
2   <body>
3     <br><br>
4     Insert New Study on DataBase. <br><br><br>
5
6
7     <form action="studyInsert.php" method="post">
8       Request_number: <input type="number" name="request_number"><br><br>
9       Description: <input type="text" name="description"><br><br>
10      Doctor_id Request: <input type="number" name="doctor_id_request"><br><br>
11      Doctor_id Study: <input type="number" name="doctor_id_study"><br><br>
12      Patient_id: <input type="number" name="patient_id"><br><br>
13      Manufacturer: <input type="text" name="manufacturer"><br><br>
14      Serial_number: <input type="number" name="serial_number"><br><br>
15      <input type="submit">
16    </form>
17
18    <br>
19  </body>
20 </html>
```

### 3.10 studyInsert.php

```
1 <html>
2   <head>
3     <meta charset="utf-8" />
4   </head>
5   <body>
6     <?php
7
8     $StudyRequest_number=$_POST["request_number"];
9     $StudyDescription=$_POST["description"];
10    $StudyDoctor_id=$_POST["doctor_id_study"];
11    $RequestDoctor_id=$_POST["doctor_id_request"];
12    $Patient_id=$_POST["patient_id"];
13    $StudyManufacturer=$_POST["manufacturer"];
14    $StudySerial_number=$_POST["serial_number"];
15
16    $StudyDate=date("Y-m-d h:i:s");
17
18    $TableRequest="Request";
19    $TableStudy="Study";
20    $TableSeries="Series";
21    $dateStr="date";
22    $numberStr="number";
23
24    require_once __DIR__ . '/PDO_connection.php';
25
26    $sql = "SELECT series_id FROM Series ORDER BY series_id desc";
27
28    $result=$connection->query($sql);
29    if ($result == FALSE)
30    {
31        $info = $connection->errorInfo();
32        echo("<p>Error: {$info[2]}</p>");
33        echo("<br><br>");
34        echo("Study Not Created");
35        exit();
36    }
37
38    $counter=0;
39    $NewSeries_id=2;
40
41    foreach($result as $row)
42    {
43        if($counter == 0){
44            $NewSeries_id=$row['series_id']+1;
45        }
46        $counter=$counter+1;
47    }
48
49
50    $connection->beginTransaction();
51
52    $result = $connection->prepare( "INSERT INTO $TableRequest($numberStr,patient_id,doctor_id,
53        $dateStr) values(?,?,?,?)");
54    $result->bindParam(1, $StudyRequest_number, PDO::PARAM_INT);
55    $result->bindParam(2, $Patient_id, PDO::PARAM_INT);
56    $result->bindParam(3, $RequestDoctor_id, PDO::PARAM_STR, 30);
57    $result->bindParam(4, $StudyDate, PDO::PARAM_STR, 30);
58
59    $test=$result->execute();
60
61    if ($test == FALSE)
62    {
```

```

62     $info = $connection->errorInfo();
63     echo("<p>Error: {$info[2]}</p>");
64     echo("<br><br>");
65     echo("Study Not Created");
66     exit();
67 }
68
69
70
71 $result = $connection->prepare( "INSERT INTO $TableStudy(request_number,description,
    $dateStr,doctor_id,manufacturer,serial_number) values(?,?,?,?,?,?)");
72 $result->bindParam(1, $StudyRequest_number, PDO::PARAM_INT);
73 $result->bindParam(2, $StudyDescription, PDO::PARAM_STR, 60);
74 $result->bindParam(3, $StudyDate, PDO::PARAM_STR, 30);
75 $result->bindParam(4, $StudyDoctor_id, PDO::PARAM_INT);
76 $result->bindParam(5, $StudyManufacturer, PDO::PARAM_STR, 30);
77 $result->bindParam(6, $StudySerial_number, PDO::PARAM_INT);
78
79 $test=$result->execute();
80
81 if ($test == FALSE)
82 {
83     $info = $connection->errorInfo();
84     echo("<p>Error: {$info[2]}</p>");
85     echo("<br><br>");
86     echo("Study Not Created");
87     exit();
88 }
89
90 $BaseUrl="web.ist.utl.pt/".$user."/series/".$NewSeries_id;
91 $result = $connection->prepare( "INSERT INTO $TableSeries(series_id,name,base_url,
    request_number,description) values(?,?,?,?,?)");
92 $result->bindParam(1, $NewSeries_id, PDO::PARAM_INT);
93 $result->bindParam(2, $StudyDescription, PDO::PARAM_STR, 60);
94 $result->bindParam(3, $BaseUrl, PDO::PARAM_STR, 30);
95 $result->bindParam(4, $StudyRequest_number, PDO::PARAM_INT);
96 $result->bindParam(5, $StudyDescription, PDO::PARAM_STR, 30);
97
98 $test=$result->execute();
99 if ($test == FALSE)
100 {
101     $info = $connection->errorInfo();
102     echo("<p>Error: {$info[2]}</p>");
103     echo("<br><br>");
104     echo("Study Not Created");
105     exit();
106 }
107
108 $connection->commit();
109 echo("<br><br>");
110 echo("Study Created");
111
112 $connection = null;
113
114 ?><br>
115 </body>
116 </html>

```

### 3.11 showSeries.php

```
1 <html>
2 <head>
3   <meta charset="UTF-8">
4 </head>
5 <body>
6   <?php
7     require_once __DIR__ . '/PDO_connection.php';
8
9     $query= "SELECT * from Series";
10
11     $result = $connection->query($query);
12
13     if($result==FALSE)
14     {
15       $info = $connection->errorInfo();
16       echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
17       exit();
18     }else{
19       echo("<table border=\"3\">");
20       echo("<tr><td>series_id</td><td>name</td><td>base_url</td><td>request_number</td><td>
21         >description</td></tr>");
22       foreach($result as $row)
23       {
24         echo("<tr><td>");
25         echo('<a href="http://web.ist.utl.pt/'. $user .'/showElements.php?series_id='.$row[
26           series_id].'">'. $row[series_id]. '</a>');
27         echo("</td><td>");
28         echo($row['name']);
29         echo("</td><td>");
30         echo($row['base_url']);
31         echo("</td><td>");
32         echo($row['request_number']);
33         echo("</td><td>");
34         echo($row['description']);
35         echo("</td></tr>");
36       }
37       echo("</table>");
38       $connection = NULL;
39     ?>
40 </body>
41 </html>
```

### 3.12 showElements.php

```
1 <html>
2 <head>
3   <meta charset="UTF-8">
4 </head>
5 <body>
6   <?php
7     if(isset($_GET['series_id'])){
8       $series_id = $_GET['series_id'];
9     }
10    require_once __DIR__ . '/PDO_connection.php';
11
12    $query= "SELECT * from Element WHERE Element.series_id='$series_id'";
13
14    $result = $connection->query($query);
15
16    if($result==FALSE)
17    {
18      $info = $connection->errorInfo();
19      echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
20      exit();
21    }else{
22      echo("<table border=\"3\">");
23      echo("<tr><td>series_id</td><td>elem_index</td></tr>");
24      foreach($result as $row)
25      {
26        echo("<tr><td>");
27        echo($row['series_id']);
28        echo("</td><td>");
29        echo('<a href="http://web.ist.utl.pt/'. $user.'/showRegion.php?series_id='.
30              $series_id.'&elem_index='.$row[elem_index].'">'.$row[elem_index]. '</a>');
31        echo("</td></tr>");
32      }
33      echo("</table>");
34      $connection = NULL;
35    ?>
36   </body>
37 </html>
```



### 3.13 showRegion.php

```
1  <?php
2  // Start the session
3  session_start();
4  ?>
5  <html>
6  <head>
7      <meta charset="UTF-8">
8  </head>
9      <body>
10         <?php
11             if(isset($_GET['series_id'])){
12                 $series_id = $_GET['series_id'];
13             }
14             if(isset($_GET['elem_index'])){
15                 $elem_index = $_GET['elem_index'];
16             }
17
18             $_SESSION["series_id"] = $series_id;
19             $_SESSION["elem_index"] = $elem_index;
20
21
22             require_once __DIR__ . '/PDO_connection.php';
23
24             $query= "SELECT * from Region WHERE Region.series_id='$series_id' AND Region.
25                     elem_index='$elem_index'";
26
27             $result = $connection->query($query);
28
29             if($result==FALSE)
30             {
31                 $info = $connection->errorInfo();
32                 echo("<p>Error: {$info[0]} {$info[1]} {$info[2]}</p>");
33                 exit();
34             }else{
35                 echo("Regions:");
36                 echo("<table border=\"3\">");
37                 echo("<tr><td>series_id</td><td>elem_index</td><td>x1</td><td>y1</td><td>x2</td><td>
38                     y2</td></tr>");
39                 foreach($result as $row)
40                 {
41                     echo("<tr><td>");
42                     echo($row['series_id']);
43                     echo("</td><td>");
44                     echo($row['elem_index']);
45                     echo("</td><td>");
46                     echo($row['x1']);
47                     echo("</td><td>");
48                     echo($row['y1']);
49                     echo("</td><td>");
50                     echo($row['x2']);
51                     echo("</td><td>");
52                     echo($row['y2']);
53                     echo("</td></tr>");
54                 }
55             }
56             echo("</table>");
57
58             echo("If you want to add a Region, please fill the boxes below and click 'Add'");
59
60             echo "<form action='addRegion.php' method='post'>";
61             echo "x1: <input type='text' name='x1'>";
62             echo "y1: <input type='text' name='y1'>";
```

```
61         echo "x2: <input type='text' name='x2'>";
62         echo "y2: <input type='text' name='y2'>";
63         echo "<input type='submit'>";
64         $connection = NULL;
65     ?>
66     </body>
67 </html>
```

### 3.14 addRegion.php

```
1  <?php
2  // Start the session
3  session_start();
4  ?>
5  <html>
6  <head>
7      <meta charset="UTF-8">
8  </head>
9      <body>
10         <?php
11             $series_id=$_SESSION["series_id"];
12             $elem_index=$_SESSION["elem_index"];
13
14             $x1=$_POST["x1"];
15             $y1=$_POST["y1"];
16             $x2=$_POST["x2"];
17             $y2=$_POST["y2"];
18
19             require_once __DIR__ . '/PDO_connection.php';
20             $result=$connection->prepare("SELECT region_overlaps_element($series_id, $elem_index,
21                                     ?, ?, ?, ?) AS var_exists");
22             $result->bindParam(1, $x1, PDO::PARAM_INT);
23             $result->bindParam(2, $y1, PDO::PARAM_INT);
24             $result->bindParam(3, $x2, PDO::PARAM_INT);
25             $result->bindParam(4, $y2, PDO::PARAM_INT);
26             $result->execute();
27
28             $result2=$connection->prepare("INSERT into Region VALUES ($series_id, $elem_index, ?,
29                                     ?, ?, ?)");
30             $result2->bindParam(1, $x1, PDO::PARAM_INT);
31             $result2->bindParam(2, $y1, PDO::PARAM_INT);
32             $result2->bindParam(3, $x2, PDO::PARAM_INT);
33             $result2->bindParam(4, $y2, PDO::PARAM_INT);
34             $result2->execute();
35
36             if($result2==FALSE)
37             {
38                 $info = $connection->errorInfo();
39                 echo("<p>Error1: {$info[0]} {$info[1]} {$info[2]}</p>");
40             }else{
41                 if($result==FALSE)
42                 {
43                     $info = $connection->errorInfo();
44                     echo("<p>Error2: {$info[0]} {$info[1]} {$info[2]}</p>");
45                 }else{
46                     foreach ($result as $row){
47                         if ($row['var_exists']==0) {
48                             echo("<p>New Clinical evidence added!</p>");
49                         }elseif($row['var_exists']==1){
50                             echo("<p>Region added although it intersects with prior added Regions!</p>");
51                         }
52                     }
53                 }
54             }
55
56             echo('<a href="http://web.ist.utl.pt/'. $user .'/showRegion.php?series_id='.$series_id.'
57                 &elem_index='.$elem_index.'">Go back to Regions</a>');
58
59             $connection = NULL;
60         ?>
61     </body>
62 </html>
```