1. Criação das Tabelas

```
drop table if exists connects; drop table if exists lives; drop table if exists wears;
drop table if exists setting; drop table if exists reading; drop table if exists sensor;
drop table if exists actuator; drop table if exists municipality; drop table if exists period;
drop table if exists device; drop table if exists pan; drop table if exists patient;

create table patient
            (number numeric(20), name varchar(255), address varchar(255),
         primary key(number));

create table pan
            (domain varchar(255), phone numeric(20), primary key(domain));

create table device
            (serialnum numeric(20), manufacturer varchar(255), description varchar(255),
            primary key(serialnum, manufacturer));

create table sensor
            (snum numeric(20), manuf varchar(255), units varchar(255),
            primary key(snum, manuf),
            foreign key(snum, manuf) references device(serialnum, manufacturer));

create table actuator
            (snum numeric(20), manuf varchar(255), units varchar(255),
            primary key(snum, manuf),
            foreign key(snum, manuf) references device(serialnum, manufacturer));

create table municipality
            (nut4code numeric(20), name varchar(255),
            primary key(nut4code));

create table period
            (start date, end date,
            primary key(start, end));

create table reading
            (snum numeric(20), manuf varchar(255), datetime timestamp, value numeric(20,2),
            primary key(snum, manuf, datetime),
            foreign key(snum, manuf) references sensor(snum, manuf));

create table setting
            (snum numeric(20), manuf varchar(255), datetime timestamp, value numeric(20,2),
            primary key(snum, manuf, datetime),
            foreign key(snum, manuf) references actuator(snum, manuf));

create table wears
            (start date, end date, patient numeric(20), pan varchar(255),
            primary key(start, end, patient),
            foreign key(start, end) references period(start, end),
            foreign key(patient) references patient(number),
            foreign key(pan) references pan(domain));

create table lives
            (start date, end date, patient numeric(20), muni numeric(20),
            primary key(start, end, patient),
            foreign key(start, end) references period(start, end),
```

```
        foreign key(patient) references patient(number),
        foreign key(muni) references municipality(nut4code));

create table connects
        (start date, end date, snum numeric(20), manuf varchar(255), pan varchar(255),
        primary key(start, end, snum, manuf),
        foreign key(start, end) references period(start, end),
        foreign key(snum, manuf) references device(serialnum, manufacturer),
        foreign key(pan) references pan(domain));
```

2. Triggers

```
delimiter $$

create trigger check_overlapping_periods_wears_insert before insert on wears
for each row
begin
        if new.start < some (select wears.end from wears where new.pan = wears.pan)
         and new.pan in (select wears.pan from wears where new.pan = wears.pan) then
                call pan_already_in_use_1();
        end if;
end$$

create trigger check_overlapping_periods_wears_update before update on wears
        for each row
        begin
                if (new.start < some (select wears.end from wears where wears.patient != new.patient and
        wears.pan = new.pan)
                        and new.end > some (select wears.start from wears where wears.patient != new.patient
        and wears.pan = new.pan))
                        or (new.end > some (select wears.start from wears where wears.patient != new.patient and
        wears.pan = new.pan)
                        and new.start < some (select wears.end from wears where wears.patient != new.patient
        and wears.pan = new.pan)) then
                                call pan_already_in_use_2();
                end if;
end$$

create trigger check_overlapping_periods_connects_insert before insert on connects
for each row
begin
        if new.start < some (select connects.end from connects where new.snum = connects.snum and new.manuf
= connects.manuf) then
                call pan_already_in_use_3();
        end if;
end$$

create trigger check_overlapping_periods_connects_update before update on connects
for each row
begin
        if (new.start < some (select connects.end from connects where new.snum = connects.snum and
new.manuf = connects.manuf and new.pan != connects.pan)
                        and new.end > some (select connects.start from connects where new.snum = connects.snum
and new.manuf = connects.manuf and new.pan != connects.pan))
```

```
            or (new.end > some (select connects.start from connects where new.snum = connects.snum and
new.manuf = connects.manuf and new.pan != connects.pan)
                and new.start < some (select connects.end from connects where new.snum = connects.snum
and new.manuf = connects.manuf and new.pan != connects.pan)) then
                call pan_already_in_use_4();
        end if;
end$$

delimiter ;
```

4.1.1 Primeiro site 4.1

```html
<html>
        <body>
                <form action="query_4a.php" method="post">
                        <fieldset>
                                <legend>Insert a patient's name</legend>
                                <table>
                                        <tr>
                                                <td align="right">Patient Name</td>
                                                <td><input type="text" name="patient_name"/></td>
                                        </tr>
                                        <tr>
                                                <td></td>
                                                <td><input type="submit" value="Submit"/></td>
                                        </tr>
                                </table>
                        </fieldset>
                </form>
        </body>
</html>
```

4.1.2 Segundo site 4.1

```php
<html>
        <body>
<?php
                $host = "db.ist.utl.pt";
                $user = "ist175876";
                $pass = "ffar1598";
                $dsn = "mysql:host=$host;dbname=$user";
                try{
                        $connection = new PDO($dsn, $user, $pass);
                }
                catch(PDOException $exception){
                        echo("<p>Error: ");
                        echo($exception->getMessage());
                        echo("</p>");
                        exit();
                }
                /*tabela dos readings*/

                $patient_request = $_REQUEST['patient_name'];

                $sql_readings = "select patient.number, name, serialnum, manufacturer,
                                value, units, datetime

                                from reading
```

```
                                        join sensor
                                        join device
                                        join connects
                                        join pan
                                                on domain = connects.pan
                                        join wears
                                                on domain = wears.pan
                                        join patient
                                                on wears.patient = patient.number

                        where patient.name like '%$patient_request%'
                        and date(reading.datetime) between wears.start and wears.end
                        and date(reading.datetime) between connects.start and connects.end
                        and reading.snum = device.serialnum
                        and reading.manuf = device.manufacturer
                        and connects.manuf = device.manufacturer
                        and connects.snum = device.serialnum
                        and sensor.manuf = device.manufacturer
                        and sensor.snum = device.serialnum";

        $result = $connection->query($sql_readings);
        if ($result == FALSE){
                $info = $connection->errorInfo();
                echo("<p>Error: {$info[2]}</p>");
                exit();
        }
        $nrows = $result->rowCount();
        if ($nrows >0){

                echo("<table border=\"1\">");
                echo("<tr><td>PatientNumber</td><td>PatientName</td><td>DeviceSerial
Number</td>
                        <td>Device Manufacturer</td><td>Readings</td>
                        <td>Units</td><td>Date Time</td></tr>");
                foreach($result as $row){
                                echo("<tr><td>");
                                echo($row['number']);
                                echo("</td><td>");
                                echo($row['name']);
                                echo("</td><td>");
                                echo($row['serialnum']);
                                echo("</td><td>");
                                echo($row['manufacturer']);
                                echo("</td><td>");
                                echo($row['value']);
                                echo("</td><td>");
                                echo($row['units']);
                                echo("</td><td>");
                                echo($row['datetime']);
                                echo("</td></tr>");
                }
                echo("</table>");
        }

        echo("<br />");
        echo("<br />");
```

```php
$sql_settings = "select patient.number, patient.name, device.serialnum, device.manufacturer,
                 setting.value, actuator.units, setting.datetime

        from setting
                join actuator
                join device
                join connects
                join pan
                        on pan.domain = connects.pan
                join wears
                        on pan.domain = wears.pan
                join patient
                        on wears.patient = patient.number

        where patient.name like '%$patient_request%'
        and date(setting.datetime) between wears.start and wears.end
        and date(setting.datetime) between connects.start and connects.end
        and setting.snum = device.serialnum
        and setting.manuf = device.manufacturer
        and connects.manuf = device.manufacturer
        and connects.snum = device.serialnum
        and actuator.manuf = device.manufacturer
        and actuator.snum = device.serialnum";

$result = $connection->query($sql_settings);
if ($result == FALSE){
        $info = $connection->errorInfo();
        echo("<p>Error: {$info[2]}</p>");
        exit();
}
$nrows = $result->rowCount();
if ($nrows >0){

echo("<table border=\"1\">");
        echo("<tr><td>Patient    Number</td><td>Patient    Name</td><td>Device    Serial
Number</td>
                <td>Device Manufacturer</td><td>Settings</td>
                <td>Units</td><td>Date Time</td></tr>");
        foreach($result as $row){
                        echo("<tr><td>");
                        echo($row['number']);
                        echo("</td><td>");
                        echo($row['name']);
                        echo("</td><td>");
                        echo($row['serialnum']);
                        echo("</td><td>");
                        echo($row['manufacturer']);
                        echo("</td><td>");
                        echo($row['value']);
                        echo("</td><td>");
                        echo($row['units']);
                        echo("</td><td>");
                        echo($row['datetime']);
                        echo("</td></tr>");
        }
        echo("</table>");
}


        $connection = null;
?>
        </body>
</html>
```

4.2.1 Primeiro site 4.2

```html
<html>
    <body>

        <form action="site_b_2.php" method="post">
            <fieldset>
                <legend>Insert a patient's name</legend>
                <table>
                    <tr>
                        <td align="right">Patient Name</td>
                        <td><input type="text" name="patient_name"/></td>
                    </tr>
                    <tr>
                    <td><input type="submit" value="Submit"/></td>
                    </tr>
                    </table>

                </fieldset>
            </form>
    </body>
</html>
```

4.2.2 Segundo site 4.2

```php
<html>
<body>

<form action="query_4b.php" method="post">
<fieldset>
        <legend>Choose the patient and his/hers new PAN</legend>
        <table>
        <tr>
        <td align="right">Patient Number and Name</td>
        <td><p>
        <?php
        $host = "db.ist.utl.pt";
        $user = "ist175876";
        $pass = "ffar1598";
        $dsn = "mysql:host=$host;dbname=$user";
        try{
                $connection = new PDO($dsn, $user, $pass);
        }
        catch(PDOException $exception){
                echo("<p>Error: ");
                echo($exception->getMessage());
                echo("</p>");
                exit();
        }
        $patient_request = $_REQUEST['patient_name'];
        $sql_patient = "select number, name from patient
                where name like '%$patient_request%'";

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

```
                if($nrows <= 0){
                        echo("<p>Error: There is no patient with that name.</p>");
                        exit();
                }

                foreach($result as $row){
                        $patient_number = $row['number'];
                        $patient_name = $row['name'];

                        echo("<input type=\"radio\" name = \"patient_number\" value=\"$patient_number\"
                        checked=\"checked\"> $patient_number  $patient_name<br/>");

                }
                $connection = null;
                ?>
                </p></td>
                </tr>
                <td><input type="submit" value="Submit"/></td>
                </tr>
                </table>
</fieldset>
</form>
</body>
</html>
```

4.2.3 Terceiro site 4.2

```
<html>
<body>
<form action="site_final_4b.php" method="post">
<fieldset>
<?php

                $host = "db.ist.utl.pt";
                $user = "ist175876";
                $pass = "ffar1598";
                $dsn = "mysql:host=$host;dbname=$user";
                try{
                        $connection = new PDO($dsn, $user, $pass);
                }
                catch(PDOException $exception){
                        echo("<p>Error: ");
                        echo($exception->getMessage());
                        echo("</p>");
                        exit();
                }

                /*QUERY DA PARA DESCOBRIR PAN DO PACIENTE*/

                $patient_request = $_REQUEST['patient_number'];
                $patient_request_hidden = $_REQUEST['patient_number'];

                //ENVIO DO PATIENT NUMBER PARA A PROXIMA PAGINA
                echo("<input type='hidden' name='patient_number_hidden' value='$patient_request_hidden'/>");

                //QUERY DA PAN ACTUAL
                $sql_pan = "select pan from wears where '$patient_request' = patient";
                $result_pan = $connection->query($sql_pan);
                $nrows = $result_pan->ROWCOUNT();
```

```php
if($nrows <= 0){
        echo("<p>Error: There is no PAN associated with that patient.</p>");
        exit();
}
foreach($result_pan as $row){
        $current_pan = $row['pan'];
}

echo("<input type='hidden' name='current_pan_hidden' value='$current_pan'/>");

/*QUERY DEVICES ACTUAL PAN*/

$sql_devices = "select serialnum, manufacturer, description
                    from device, wears, connects
                    where wears.patient = '$patient_request'
                    and wears.end > CURDATE()
                    and connects.pan = wears.pan
                    and connects.end > CURDATE()
                    and serialnum = snum
                    and manufacturer = manuf";

$result = $connection->query($sql_devices);
if ($result == FALSE){
        $info = $connection->errorInfo();
        echo("<p>Error: {$info[2]}</p>");
        exit();
}
$nrows = $result->ROWCOUNT();
if($nrows <= 0){
        echo("<p>Error: There are no medical devices associated with that PAN.</p>");
        exit();
}

echo("<table border=\"1\">");
echo("Devices on Actual PAN");
echo("<tr><td>Serial Number</td><td>Manufacturer</td><td>Description</td>");

foreach($result as $row){
        echo("<tr><td>");
        echo($row['serialnum']);
        echo("</td><td>");
        echo($row['manufacturer']);
        echo("</td><td>");
        echo($row['description']);
        echo("</td></tr>");
}
echo("</table>");
echo("<br/>");

/*QUERY DEVICES LAST PAN*/

$sql_devices_last = "select serialnum, manufacturer, description, wears.pan
                    from connects, device, wears
                    where patient = '$patient_request'
                    and wears.end < CURDATE() and wears.end >= all
                    (select end from wears where end < CURDATE()
                            and patient = '$patient_request')
                    and connects.pan = wears.pan
                    and serialnum = snum
                    and manufacturer = manuf
                    and ((connects.start >= wears.start and connects.end <= wears.end)
                    or (connects.start <= wears.start and connects.end >= wears.start)
                    or (connects.start <= wears.end and connects.end >= wears.end))";
```

```php
$result = $connection->query($sql_devices_last);
if ($result == FALSE){
        $info = $connection->errorInfo();
        echo("<p>Error: {$info[2]}</p>");
        exit();
}
$nrows = $result->ROWCOUNT();
if($nrows <= 0){
echo("<p>Error: There are no medical devices currently associated with the last PAN of this patient.</p>
        <p>Or the PAN is already in use by another patient.</p>
        <p>Or the patient doesn't have a last PAN.</p>");
        exit();
}

echo("<p>Devices on Last used PAN</p>");
echo("<p>Choose the ones you want to move to your actual PAN:</p>");

foreach($result as $row){
        $device_serialnum = $row['serialnum'];
        $device_manufacturer = $row['manufacturer'];
        $description = $row['description'];
        $last_pan = $row['pan'];

        //QUERY PARA A PAN ACTUAL DO DEVICE
        $sql_pan_device = "select pan
                        from connects
                        where end >= all
                        (select end from connects)
                        and end > CURDATE()
                        and snum = '$device_serialnum'
                        and manuf = '$device_manufacturer'";

        $result_pan_device = $connection->query($sql_pan_device);
        foreach($result_pan_device as $row_pan_device){
                $current_pan_device = $row_pan_device['pan'];
        }

        $sql_user_device = "select end
                        from wears
                        where end >= all
                        (select end from wears where pan = '$current_pan_device')
                        and pan = '$current_pan_device'";

        $result_user_device = $connection->query($sql_user_device);
        foreach($result_user_device as $row_user_device){
                $current_user_device = $row_user_device['end'];
        }

        $time_of_device = strtotime($current_user_device);
        $todays_date = date("Y-m-d");
        $today = strtotime($todays_date);

        if($current_pan != $current_pan_device and $time_of_device < $today){
                echo("<input type=\"checkbox\" name = \"device[]\"
value=\"$device_serialnum|$device_manufacturer\"> $device_serialnum : $device_manufacturer :
$description<br/>");
        }
}
        echo("<br/>");

        //ENVIO DA ULTIMA PAN USADA PARA A PROXIMA PAGINA
        echo("<input type='hidden' name='last_pan_hidden' value='$last_pan'/>");
```

```
                    $connection = null;
?>

        <input type="submit" value="Submit"/>
</fieldset>
</form>
</body>
</html>
```

4.2.4 Quarto site 4.2

```
<html>
<body>
<form action="site_b_1.php" method="post">
<fieldset>
        <?php
        $host = "db.ist.utl.pt";
        $user = "ist175876";
        $pass = "ffar1598";
        $dsn = "mysql:host=$host;dbname=$user";
        try{
                $connection = new PDO($dsn, $user, $pass);
        }
        catch(PDOException $exception){
                echo("<p>Error: ");
                echo($exception->getMessage());
                echo("</p>");
                exit();
        }
        $patient_request = $_POST['patient_number_hidden'];
        $last_pan_request = $_POST['last_pan_hidden'];
        $current_pan_request = $_POST['current_pan_hidden'];

        if( (!empty($_POST['device'])) ) {
          foreach($_POST['device'] as $check) {
                $device = explode('|',$check);

                /*RETIRAR TEMPOS DE INCIO E FIM DE UM CERTO DISPOSITIVO QUE VAI SER TROCADO*/

                $sql_times = "select connects.start, connects.end
                        from wears, connects
                        where patient = '$patient_request'
                        and connects.pan = '$last_pan_request'
                        and connects.pan = wears.pan
                        and snum = '$device[0]'
                        and manuf = '$device[1]'";

                $result_times = $connection->query($sql_times);
                if ($result_times == FALSE){
                        $info = $connection->errorInfo();
                        echo("<p>Error: {$info[2]}</p>");
                        exit();
                }
                foreach($result_times as $row){
                        $start = $row['start'];
                        $end = $row['end'];
                }
```

```php
//QUERIES PARA A ALTERAÇÃO DE CADA DEVICE

$sql_insert_periods_1 = "insert into period values ('$start', CURDATE())";

$result1 = $connection->query($sql_insert_periods_1);

$sql_insert_periods_2 = "insert into period values (CURDATE(), '2999-12-31')";

$result2 = $connection->query($sql_insert_periods_2);

$sql_update = "update connects set end = CURDATE()
            where snum = '$device[0]'
            and manuf = '$device[1]'
            and start = '$start'
            and end = '$end'";

$result3 = $connection->query($sql_update);

$sql_insert_device = "insert into connects values (CURDATE(), '2999-12-31', '$device[0]',
'$device[1]', '$current_pan_request')";

$result4 = $connection->query($sql_insert_device);


        }
    }

    /*DEVICES NA PAN ACTUAL ACTUALIZADA*/

    $sql_devices = "select serialnum, manufacturer, description
            from device, wears, connects
            where wears.patient = '$patient_request'
            and wears.end > CURDATE()
            and connects.pan = wears.pan
            and connects.end > CURDATE()
            and device.serialnum = connects.snum
            and device.manufacturer = connects.manuf";

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

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

    $nrows = $result->ROWCOUNT();
    if($nrows <= 0){
            echo("<p>Error: There are no medical devices associated with that PAN.</p>");
            exit();
    }

    echo("<table border=\"1\">");
    echo("Devices on Actual PAN");
    echo("<tr><td>Serial Number</td><td>Manufacturer</td><td>Description</td>");
    foreach($result as $row){
            echo("<tr><td>");
            echo($row['serialnum']);
            echo("</td><td>");
            echo($row['manufacturer']);
            echo("</td><td>");
            echo($row['description']);
            echo("</td></tr>");
```

```
            }
            echo("</table>");
            echo("<br/>");

            $connection = null;
    ?>

<tr>
<td></td>
<td><input type="Submit" value="Return"/></td>
</tr>

</fieldset>
</form>
</body>
</html>
```

5. Base de dados

```
insert into patient values (1, 'ricardo miranda', 'rua das vacas');
insert into patient values (2, 'ze', 'rua do barnabe');
insert into patient values (3, 'tomas', 'rua da alameda');
insert into patient values (4, 'ricardo', 'rua de telheiras');
insert into patient values (5, 'catarina', 'aveiro');

insert into municipality values (11111, 'lisboa');
insert into municipality values (22222, 'almada');
insert into municipality values (33333, 'peniche');
insert into municipality values (44444, 'nazare');
insert into municipality values (55555, 'fonte da vaca');
insert into period values ('2010-01-01', '2010-12-31');
insert into period values ('2011-01-01', '2011-12-31');
insert into period values ('2012-01-01', '2999-12-31');
insert into lives values ('2010-01-01', '2010-12-31',1,11111);
insert into lives values ('2011-01-01', '2011-12-31',1,33333);
insert into lives values ('2012-01-01', '2999-12-31',1,55555);
insert into lives values ('2012-01-01', '2999-12-31',2,22222);
insert into lives values ('2012-01-01', '2999-12-31',3,11111);
insert into lives values ('2012-01-01', '2999-12-31',4,11111);

insert into period values ('2014-11-21', '2014-11-25');
insert into period values ('2015-11-10', '2015-11-12');
insert into device values (11,'siemens', 'blood pressure');
insert into device values (77,'philips', 'blood pressure');
insert into device values (22,'electrolux', 'insulin pump');
insert into device values (33,'philips', 'insulin pump');
insert into device values (44,'philips', 'insulin pump');
insert into device values (55,'nokia', 'blood pressure');
insert into device values (66,'philips', 'insulin pump');
insert into sensor values (11,'siemens', 'mm Hg');
insert into sensor values (33,'philips', 'mm Hg');
insert into sensor values (55,'nokia', 'mm Hg');
insert into sensor values (77,'philips', 'mm Hg');
insert into actuator values (44,'philips', 'rpm');

insert into pan values ('pan1', 999);
insert into pan values ('pan2', 999);
insert into pan values ('pan3', 999);
insert into pan values ('pan4', 999);
insert into pan values ('pan5', 999);
```

```sql
insert into period values ('2012-01-01', '2015-03-30');
insert into period values ('2015-03-30', '2999-12-31');
insert into period values ('2015-03-30', '2015-05-30');
insert into period values ('2015-05-31', '2999-05-31');

insert into period values ('2012-01-01', '2015-11-17');
insert into period values ('2015-11-17', '2999-12-31');

insert into connects values ('2012-01-01', '2999-12-31', 55, 'nokia', 'pan3');
insert into connects values ('2012-01-01', '2999-12-31', 77, 'philips', 'pan3');
insert into connects values ('2012-01-01', '2999-12-31', 44, 'philips', 'pan3');
insert into connects values ('2012-01-01', '2999-12-31', 33, 'philips', 'pan3');
insert into connects values ('2012-01-01', '2999-12-31', 11, 'siemens', 'pan5');
update connects set connects.end = '2015-11-17' where connects.snum = 55 and connects.manuf = 'nokia';
insert into connects values ('2015-11-17', '2999-12-31', 55, 'nokia', 'pan2');

insert into wears values ('2012-01-01', '2999-12-31', 3, 'pan1');
insert into wears values ('2012-01-01', '2999-12-31', 2, 'pan3');
insert into wears values ('2012-01-01', '2999-12-31', 4, 'pan2');
insert into wears values ('2012-01-01', '2999-12-31', 1, 'pan5');

insert into period values ('2015-06-30', '2999-05-31');

update wears set wears.end = '2015-03-30' where wears.patient = 2 and wears.pan = 'pan3';
update wears set wears.end = '2015-03-30' where wears.patient = 4 and wears.pan = 'pan2';
insert into wears values ('2015-03-30', '2999-12-31', 4, 'pan3');
update wears set wears.end = '2015-05-30' where wears.patient = 4 and wears.pan = 'pan3';

insert into wears values ('2015-05-31', '2999-05-31', 2, 'pan3');
insert into connects values ('2015-05-31', '2999-05-31', 66, 'philips', 'pan3');

insert into period values ('2012-01-01', '2015-06-10');
insert into period values ('2015-06-11', '2999-12-31');
update connects set connects.end = '2015-06-10' where connects.snum = 33 and connects.manuf = 'philips' and
connects.start = '2012-01-01';
insert into connects values ('2015-06-11', '2999-12-31', 33, 'philips', 'pan1');
/*COMENTAR PARA O 33 NAO SER TRANSFERIDO E APARECER NO QUERY*/

insert into period values ('2015-05-31', '2015-06-15');

update wears set wears.end = '2015-06-15' where wears.patient = 2 and wears.pan = 'pan3' and wears.start = '2015-
05-31';
insert into wears values ('2015-06-30', '2999-05-31', 4, 'pan2');
insert into reading values (11, 'siemens','2014-11-23 15:00:00' , '100');
insert into reading values (11, 'siemens','2015-11-11 00:00:01' , '10');
insert into reading values (11, 'siemens','2015-11-11 00:30:00' , '11');
insert into reading values (11, 'siemens','2015-11-11 01:00:00' , '12');
insert into reading values (11, 'siemens','2015-11-11 06:00:00' , '9');
insert into reading values (33, 'philips','2014-01-01 15:00:00' , '1000');
insert into reading values (55, 'nokia','2012-07-05 00:00:01' , '1');
insert into reading values (55, 'nokia','2013-05-05 00:00:01' , '2');
insert into reading values (55, 'nokia','2015-11-18 00:00:01' , '50');
insert into reading values (55, 'nokia','2015-11-18 00:00:02' , '51');
insert into reading values (77, 'philips','2015-04-18 00:00:01' , '700');
insert into reading values (77, 'philips','2015-11-18 00:00:01' , '701');
insert into setting values (44, 'philips','2012-07-05 00:00:01' , '2000');
```