

PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ

FACULTAD DE CIENCIAS E INGENIERÍA



PONTIFICIA
UNIVERSIDAD
CATÓLICA
DEL PERÚ

DISEÑO E IMPLEMENTACIÓN DE UNA PLATAFORMA DE GESTIÓN DE UNA RED DE SENSORES APLICADA A LA MONITORIZACIÓN DE LA CALIDAD AMBIENTAL EN LA CUENCA DEL RÍO NAPO

ANEXO

Código fuente

Lima, julio de 2014

Anexo: Programa fuente (Funciones principales)

1. Components

1.1. UserIdentity.php

```
<?php

class UserIdentity extends CUserIdentity
{
    private $_id;
    public function authenticate()
    {
        $user= Usuarios::model()-
>findByAttributes(array('correo'=>$this->username));

        if($user===null)
            $this->errorCode=self::ERROR_USERNAME_INVALID;
        elseif($user->password!==md5($this->password))
            $this->errorCode=self::ERROR_PASSWORD_INVALID;
        else{
            $this->errorCode=self::ERROR_NONE;
            $this->_id = $user->idusuario;
        }

        return !$this->errorCode;
    }
    public function getId() {
        return $this->_id;
    }
}
```

2. Config

2.1. Console.php

```
<?php
return array(
    'basePath'=>dirname(__FILE__).DIRECTORY_SEPARATOR.'..',
    'name'=>'My Console Application',
    'preload'=>array('log'),
    'components'=>array(
        'db'=>array(
            'connectionString' =>
'sqlite:'.dirname(__FILE__).'/../data/testdrive.db',
        ),
        '=>array(
            'connectionString' =>
'mysql:host=localhost;dbname=testdrive',
            'emulatePrepare' => true,
            'username' => 'root',
            'password' => '',
            'charset' => 'utf8',
        ),
    ),
);
```

```
'log'=>array(
'class'=>'CLogRouter',
'routes'=>array(
    array(
        'class'=>'CFileLogRoute',
        'levels'=>'error, warning',
    ),),),),);
```

2.2. Main.php

```
<?php

return array(

    'basePath'=>dirname(__FILE__).DIRECTORY_SEPARATOR.'..',
    'name'=>'Monitorización de Redes de Sensores',
    'language'=>'es',
    'preload'=>array('log'),
    'import'=>array(
        'application.models.*',
        'application.components.*',
    ),
    'modules'=>array(
        'gii'=>array(
            'class'=>'system.gii.GiiModule',
            'password'=>'pucp',
            'ipFilters'=>array('127.0.0.1',':::1'),
        ),),
    'components'=>array(
        'user'=>array(
            'allowAutoLogin'=>true,
        ),
        'db'=>array(
            'connectionString' =>
'mysql:host=localhost;dbname=wsn_monitor',
            'emulatePrepare' => true,
            'username' => 'root',
            'password' => 'gtrwsn',
            'charset' => 'utf8',
        ),
        'errorHandler'=>array(
            // use 'site/error' action to display errors
            'errorAction'=>'site/error',
        ),
        'log'=>array(
            'class'=>'CLogRouter',
            'routes'=>array(
                array(
                    'class'=>'CFileLogRoute',
                    'levels'=>'error, warning',
                ),),),),
        'params'=>array(
            'adminEmail'=>'webmaster@gtr.edu.pe',
        ),
    );
```

3. Controllers

3.1. AlertaController.php

```
<?php
```

```

class AlertaController extends Controller
{
    public function filters()
    {
        return array(
            'accessControl','postOnly + delete',);
    }
    public function accessRules()
    {
        return array(
            array('allow', // allow all users to perform 'index' and
'view' actions
                'actions'=>array('index','view','export'),
                'users'=>array('*'),
            ),
            array('allow', // allow authenticated user to perform
'create' and 'update' actions
                'actions'=>array('create','update'),
                'users'=>array('@'),
            ),
            array('allow', // allow admin user to perform 'admin' and
'delete' actions
                'actions'=>array('admin','delete'),
                'users'=>array('admin'),
            ),
            array('deny', // deny all users
                'users'=>array('*'),
            ),);}

    public function actionView($id)
    {
        $this->render('view',array(
            'model'=>$this->loadModel($id),
        ));
    }
    public function actionCreate() {
        $model=new Alerta;
        if(isset($_POST['Alerta'])) {
            $model->attributes=$_POST['Alerta'];
            if($model->save())
                $this->redirect(array('view','id'=>$model-
>idalerta));
        }

        $this->render('create',array(
            'model'=>$model,
        )); }
    public function actionUpdate($id) {
        $model=$this->loadModel($id);
        if(isset($_POST['Alerta']))
        {
            $model->attributes=$_POST['Alerta'];
            if($model->save())
                $this->redirect(array('view','id'=>$model->idalerta));
        }
        $this->render('update',array(
            'model'=>$model,
        )); }
    public function actionDelete($id)
    {
        $this->loadModel($id)->delete();
        if(!isset($_GET['ajax']))
            $this->redirect(isset($_POST['returnUrl']) ? $_POST['returnUrl'] :
array('admin'));
    }
    public function actionIndex() {
        $dataProvider=new CActiveDataProvider('Alerta');
        $this->render('index',array(
            'dataProvider'=>$dataProvider,
        ));
    }
    public function actionExport()
    {
        header("Content-Type: application/vnd.ms-excel; charset=utf-8");
        header("Content-Disposition: attachment; filename=Reporte.xls"); //File
name extension was wrong
    }
}

```

```

header("Expires: 0");
header("Cache-Control: must-revalidate, post-check=0, pre-check=0");
header("Cache-Control: private",false);
    $this->layout=FALSE;
    $alertas= Alerta::model()->findAll(array('limit'=>100));
    $this->render('export',array(
        'alertas'=>$alertas,
    ));
}

public function actionAdmin()
{
    $model=new Alerta('search');
    $model->unsetAttributes(); // clear any default values
    if(isset($_GET['Alerta']))
        $model->attributes=$_GET['Alerta'];

    $this->render('admin',array(
        'model'=>$model,
    ));
}

public function loadModel($id)
{
    $model=Alerta::model()->findByPk($id);
    if($model===null)
        throw new CHttpException(404,'The requested page does not
exist.');
```

```

    return $model;
}

protected function performAjaxValidation($model)
{
    if(isset($_POST['ajax']) && $_POST['ajax']==='alerta-form')
    {
        echo CActiveForm::validate($model);
        Yii::app()->end();
    }
}
}

```

3.2. DataController.php

```

<?php

class DataController extends Controller {
    public function filters() {
        return array(
            'accessControl', // perform access control for CRUD operations
            'postOnly + delete', // we only allow deletion via POST
request
        );
    }
    public function accessRules() {
        return array(
            array('allow', // allow all users to perform 'index' and
'view' actions
                'actions' => array('index', 'view'),
                'users' => array('*'),
            ),
            array('allow', // allow authenticated user to perform 'create'
and 'update' actions

```



```

    $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); //'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);
    if ($variable != "" && $place != "") {
        $this->generator_place($variable, $place);
    }
    $this->render('grafica', array('variable' => $variable, 'place' =>
$place));
}

    public function actionCompara($variable1 = "", $place1 = "",
$variable2 = "", $place2 = "") {
    $jsondata = "[" . " " . " ]"; // give json data format

    $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson2.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); //'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);

    if ($variable1 != "" && $place1 != "" && $variable2 != "" &&
$place2 != "") {
        $this->generator_2compare($variable1, $place1, $variable2,
$place2);
    }

    $this->render('compara', array('variable1' => $variable1, 'placel'
=> $place1, 'variable2' => $variable2, 'place2' => $place2));
}

    public function actionRango($variable = "", $place = "", $inicio = "",
$fin = "") {
    $jsondata = "[" . " " . " ]"; // give json data format

    $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); //'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);

    if ($variable != "" && $place != "" && $inicio != "" && $fin != "") {
    $this->generator_place_bydate($variable, $place, $inicio, $fin); }

    $this->render('rango', array('variable' => $variable, 'place' => $place,
'inicio' => $inicio, 'fin' => $fin));
}

    public function actionComrango($variable1 = "", $placel = "",
$variable2 = "", $place2 = "", $inicio = "", $fin = "") {

    $jsondata = "[" . " " . " ]"; // give json data format

    $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson2.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); //'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);

    if ($variable1 != "" && $placel != "" && $variable2 != "" && $place2 !=
"" && $inicio != "" && $fin != "") {

```

```

        $this->generator_place_bydate_2compare($variable1, $place1,
$variable2, $place2, $inicio, $fin);
    }
    $this->render('comrango', array('variable1' => $variable1,
'place1' => $place1, 'variable2' => $variable2, 'place2' => $place2,
'inicio' => $inicio, 'fin' => $fin));
}
    public function actionRtime($variable = "", $place = "") {
        $dataProvider = new CActiveDataProvider('Alerta', array(
            'criteria' => array(
                'condition' => 'nodo.ubicacion=\'\' . $place . \'\'',
                'order' => 'data.fecha DESC',
                'with' => array('data.parametro.nodo'),
            ), 'pagination' => array(
                'pageSize' => '5'
            )
        ));

    };
    $jsondata = "[" . " " . "]"; // give json data format
    $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); // 'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);
    if ($variable != "" && $place != "") {
        $this->generator_placet($variable, $place);
    }
    $this->render('rtime', array('variable' => $variable, 'place' =>
$place, 'dataProvider' => $dataProvider));
}
    public function actionWtime($variable1 = "", $place1 = "", $variable2
= "", $variable3 = "", $variable4 = "", $variable5 = "") {
        $jsondata = "[" . " " . "]"; // give json data format
        $myfile1 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson21.txt";
        $myfile2 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson22.txt";
        $myfile3 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson23.txt";
        $myfile4 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson24.txt";
        $myfile5 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson25.txt";
        fwrite($doc1, $jsondata);fclose($doc1);
        fwrite($doc2, $jsondata);fclose($doc2);
        fwrite($doc3, $jsondata);fclose($doc3);
        fwrite($doc4, $jsondata);fclose($doc4);
        fwrite($doc5, $jsondata);fclose($doc5);

    if ($variable1 != "" || $place1 != "" || $variable2 != "" || $variable3 !=
"" || $variable4 != "" || $variable5 != "") {

        $this->generator_5variables($variable1, $place1, $variable2, $variable3,
$variable4, $variable5);
    }
    $this->render('wtime', array('variable1' => $variable1, 'place1' =>
$place1, 'variable2' => $variable2, 'variable3' => $variable3, 'variable4'
=> $variable4, 'variable5' => $variable5));
}
    public function actionWtimeh($variable1 = "", $place1 = "", $variable2 =
"", $variable3 = "", $variable4 = "", $variable5 = "") {

```



```
$jsondata = "[" . " " . "]""; // give json data format

$myfile1 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson51.txt";
$myfile2 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson52.txt";
$myfile3 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson53.txt";
$myfile4 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson54.txt";
$myfile5 =
$_SERVER["DOCUMENT_ROOT"]."/wsn_monitor/datajson/datajson55.txt";

$doc1 = fopen($myfile1, 'w') or die("can't open the file"); //'w' to
overwrite and 'a' to append
    fwrite($doc1, $jsondata);
    fclose($doc1);
$doc2 = fopen($myfile2, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc2, $jsondata);
    fclose($doc2);
$doc3 = fopen($myfile3, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc3, $jsondata);
    fclose($doc3);
$doc4 = fopen($myfile4, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc4, $jsondata);
    fclose($doc4);
$doc5 = fopen($myfile5, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc5, $jsondata);
    fclose($doc5);

    if ($variable1 != "" || $place1 != "" || $variable2 != "" ||
$variable3 != "" || $variable4 != "" || $variable5 != "") {

        $this->generator_5variables($variable1, $place1, $variable2,
$variable3, $variable4, $variable5);
    }
    $this->render('wtimeh', array('variable1' => $variable1, 'place1'
=> $place1, 'variable2' => $variable2, 'variable3' => $variable3,
'variable4' => $variable4, 'variable5' => $variable5));
}
function vargenerator($variable) {
    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsndb', $con);

    $query = sprintf("select fecha, $variable from zigbeedata WHERE mac
= '0013a2004077a0c1' order by fecha ASC");
    $result = mysql_query($query);

    $arreglo = array();
    $i = 0;

    while ($row = mysql_fetch_array($result)) {
        $arreglo[$i][0] = $row["fecha"];
        $arreglo[$i][1] = floatval($row[$variable]);
        $i++;
    }

    $data = json_encode($arreglo);
```

```

    $jsondata = "[" . $data . "]; // give json data format

    $myfile = $_SERVER["DOCUMENT_ROOT"] . "/wsn-
cela/resources/extensiones/datajson.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); //'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);

    mysql_free_result($result); //free memory
}

public function generator_place($variable, $place) {

    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsn_monitor', $con);

    //query
    //$query=sprintf("select fecha, $variable from zigbeedata z inner
join nodo d on z.mac = d.mac where d.ubicacion = '$place' order by fecha
ASC");
    $query = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$place' and s.nombre =
'$variable'
order by d.fecha ASC");

    $result = mysql_query($query);
    $arreglo = array();
    $i = 0;
    $error = array();
    $j1 = 0;
    while ($row = mysql_fetch_array($result)) {
        $arreglo[$i][0] = $row["fecha"];

        if (((($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {

            $error[$j1][0] = $row["fecha"];
            $error[$j1][1] = $row["valor"];
            $error[$j1][2] = $row["iddata"];
            $j1++;
        } else {
            $arreglo[$i][1] = floatval($row["valor"]);
            $i++;
        }
    }

    $fechal = array();
    $nombrel = array();
    $iddatal = array();
    $count = count($error);
    for ($n = 0; $n < $count; $n++) {
        $fechal[] = $error[$n][0];
        $nombrel[] = $error[$n][1];
        $iddatal[] = $error[$n][2];
    }
}

```

```

        mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombre,iddata) VALUES
('$fecha1[$n]','$nombrel[$n]','$iddatal[$n]')");
    }
    $data = json_encode($arreglo);
    $jsondata = "[" . $data . "]; // give json data format
    $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file"); // 'w' to
overwrite and 'a' to append
    fwrite($doc, $jsondata);
    fclose($doc);
    mysql_free_result($result); //free memory
    }
    public function generator_2compare($variable1, $place1, $variable2,
$place2) {
        $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
        $db = mysql_select_db('wsn_monitor', $con);
        $query1 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$place1' and s.nombre =
'$variable1'
order by d.fecha ASC");

        $query2 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$place2' and s.nombre =
'$variable2'
order by d.fecha ASC");
        $result = mysql_query($query1);
        $arreglo = array();
        $arreglo2 = array();
        $i = 0;
        $error = array();
        $j1 = 0;
        $error2 = array();
        $j2 = 0;

        while ($row = mysql_fetch_array($result)) {
            $arreglo[$i][0] = $row["fecha"];
            if (($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {

                $error[$j1][0] = $row["fecha"];
                $error[$j1][1] = $row["valor"];
                $error[$j1][2] = $row["iddata"];

                $j1++;
            } else {

```

```

        $arreglo[$i][1] = floatval($row["valor"]);
        $i++;
    }
};

$fecha1 = array();
$nombrel = array();
$iddata1 = array();
$count = count($error);
for ($n = 0; $n < $count; $n++) {
    $fecha1[] = $error[$n][0];
    $nombrel[] = $error[$n][1];
    $iddata1[] = $error[$n][2];
    mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombre,iddata) VALUES
('$fecha1[$n]','$nombrel[$n]','$iddata1[$n]')");
}
$data = json_encode($arreglo);
$daton = "[" . $data . ",";
$myfile = $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson2.txt";
$doc = fopen($myfile, 'w') or die("can't open the file");
fwrite($doc, $daton);
fclose($doc);
$result2 = mysql_query($query2);
$j = 0;
while ($row2 = mysql_fetch_array($result2)) {
    $arreglo2[$j][0] = $row2["fecha"];
    if (($row2["valor"]) == "Error_connection" ||
(($row2["valor"]) == "Missing") || (($row2["valor"]) == "OFL") ||
(($row2["valor"]) == "ERROR") || (($row2["valor"]) == "Maintaince") ||
(($row2["valor"]) == "Calibration") || (($row2["valor"]) == "Invalid") ||
(($row2["valor"]) == "Inactive") || (($row2["valor"]) == "") ||
(($row2["valor"]) == "Error_conn") || (($row2["valor"]) == "Error_")) {
        $error2[$j2][0] = $row2["fecha"];
        $error2[$j2][1] = $row2["valor"];
        $error2[$j2][2] = $row2["iddata"];
        $j2++;
    } else {
        $arreglo2[$j][1] = floatval($row2["valor"]);
        $j++;
    }
};
$fecha2 = array();
$nombrel2 = array();
$iddata2 = array();
$count2 = count($error2);
for ($n = 0; $n < $count2; $n++) {
    $fecha2[] = $error2[$n][0];
    $nombrel2[] = $error2[$n][1];
    $iddata2[] = $error2[$n][2];
    mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombre,iddata) VALUES
('$fecha2[$n]','$nombrel2[$n]','$iddata2[$n]')");
}
$data2 = json_encode($arreglo2);
$daton2 = $data2 . ",";
$doc2 = fopen($myfile, 'a') or die("can't open the file");
fwrite($doc2, $daton2);
fclose($doc2);

mysql_free_result($result);
}

```

```

    public function generator_place_bydate($variable, $place, $inicio,
$fin) {

        $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
        $db = mysql_select_db('wsn_monitor', $con);
        $query = sprintf("select d.iddata, d.fecha, d.valor from data d
                                inner join parametro p on
d.idparametro=p.idparametro
                                inner join nodo n on p.idnodo = n.idnodo
                                inner join sensor s on p.idsensor=s.idsensor
                                where n.ubicacion = '$place' and s.nombre =
'$variable'
                                and d.fecha BETWEEN '$inicio' and '$fin'order by
d.fecha ASC");
        $result = mysql_query($query);
        $arreglo = array();
        $i = 0;
        $error = array();
        $j1 = 0;
        while ($row = mysql_fetch_array($result)) {
            $arreglo[$i][0] = $row["fecha"];
            if (((($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {
                $error[$j1][0] = $row["fecha"];
                $error[$j1][1] = $row["valor"];
                $error[$j1][2] = $row["iddata"];

                $j1++;
            } else {
                $arreglo[$i][1] = floatval($row["valor"]);
                $i++;
            }
        }
        $fechal = array();
        $nombrel = array();
        $iddatal = array();
        $count = count($error);
        for ($n = 0; $n < $count; $n++) {
            $fechal[] = $error[$n][0];
            $nombrel[] = $error[$n][1];
            $iddatal[] = $error[$n][2];

            mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fechal[$n]', '$nombrel[$n]', '$iddatal[$n]')");
        }
        $data = json_encode($arreglo);
        $jsondata = "[" . $data . "]"; // give json data format
        $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson.txt";
        $doc = fopen($myfile, 'w') or die("can't open the file"); // 'w' to
overwrite and 'a' to append
        fwrite($doc, $jsondata);
        fclose($doc);
        mysql_free_result($result); //free memory
    }

    public function generator_place_bydate_2compare($variable1, $place1,
$variable2, $place2, $inicio, $fin) {

```

```

    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsn_monitor', $con);
    $query1 = sprintf("select d.iddata, d.fecha, d.valor from data d
        inner join parametro p on
d.idparametro=p.idparametro
        inner join nodo n on p.idnodo = n.idnodo
        inner join sensor s on p.idsensor=s.idsensor
        where n.ubicacion = '$placel' and s.nombre =
'$variable1'
        and d.fecha BETWEEN '$inicio' and '$fin' order by
d.fecha ASC");

    $query2 = sprintf("select d.iddata, d.fecha, d.valor from data d
        inner join parametro p on
d.idparametro=p.idparametro
        inner join nodo n on p.idnodo = n.idnodo
        inner join sensor s on p.idsensor=s.idsensor
        where n.ubicacion = '$place2' and s.nombre =
'$variable2'
        and d.fecha BETWEEN '$inicio' and '$fin' order by
d.fecha ASC");
    $result = mysql_query($query1);
    $arreglo = array();
    $arreglo2 = array();
    $i = 0;
    $error = array();
    $j1 = 0;
    $error2 = array();
    $j2 = 0;
    while ($row = mysql_fetch_array($result)) {
        $arreglo[$i][0] = $row["fecha"];
        if (($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {
            $error[$j1][0] = $row["fecha"];
            $error[$j1][1] = $row["valor"];
            $error[$j1][2] = $row["iddata"];

            $j1++;
        } else {
            $arreglo[$i][1] = floatval($row["valor"]);
            $i++;
        }
    };
    $fechal = array();
    $nombrel = array();
    $iddatal = array();
    $count = count($error);
    for ($n = 0; $n < $count; $n++) {
        $fechal[] = $error[$n][0];
        $nombrel[] = $error[$n][1];
        $iddatal[] = $error[$n][2];
        mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fechal[$n]', '$nombrel[$n]', '$iddatal[$n]')");
    }
    $data = json_encode($arreglo);
    $daton = "[" . $data . ",";

```

```

    $myfile = $myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson2.txt";
    $doc = fopen($myfile, 'w') or die("can't open the file");
    fwrite($doc, $daton);
    fclose($doc);
    $result2 = mysql_query($query2);
    $j = 0;
    while ($row2 = mysql_fetch_array($result2)) {
        $arreglo2[$j][0] = $row2["fecha"];

        if (($row2["valor"]) == "Error_connection") ||
(($row2["valor"]) == "Missing") || (($row2["valor"]) == "OFL") ||
(($row2["valor"]) == "ERROR") || (($row2["valor"]) == "Maintaince") ||
(($row2["valor"]) == "Calibration") || (($row2["valor"]) == "Invalid") ||
(($row2["valor"]) == "Inactive") || (($row2["valor"]) == "") ||
(($row2["valor"]) == "Error_conn") || (($row2["valor"]) == "Error_")) {

            $error2[$j2][0] = $row2["fecha"];
            $error2[$j2][1] = $row2["valor"];
            $error2[$j2][2] = $row2["iddata"];
            $j2++;
        } else {
            $arreglo2[$j][1] = floatval($row2["valor"]);
            $j++;
        }
    };
    $fecha2 = array();
    $nombre2 = array();
    $iddata2 = array();
    $count2 = count($error2);
    for ($n = 0; $n < $count2; $n++) {
        $fecha2[] = $error2[$n][0];
        $nombre2[] = $error2[$n][1];
        $iddata2[] = $error2[$n][2];
        mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fecha2[$n]','$nombre2[$n]','$iddata2[$n]')");
    }
    $data2 = json_encode($arreglo2);
    $daton2 = $data2 . " ";
    $doc2 = fopen($myfile, 'a') or die("can't open the file");
    fwrite($doc2, $daton2);
    fclose($doc2);
    mysql_free_result($result);
}

public function generator_placet($variable, $place) {
    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsn_monitor', $con);
    $query = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$place' and s.nombre =
'$variable'
and iddata > ( select MAX(d.iddata) - '288' from
data d)
order by d.fecha ASC");
    $result = mysql_query($query);
    $arreglo = array();
    $i = 0;
    $error = array();
    $j1 = 0;

```

```

while ($row = mysql_fetch_array($result)) {
    $arreglo[$i][0] = $row["fecha"];

    if (($row["valor"]) == "Error_connection") ||
    (($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
    (($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
    (($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
    (($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
    (($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {

        $error[$j1][0] = $row["fecha"];
        $error[$j1][1] = $row["valor"];
        $error[$j1][2] = $row["iddata"];

        $j1++;
    } else {
        $arreglo[$i][1] = floatval($row["valor"]);
        $i++;
    }
}

$fechal = array();
$nombrel = array();
$iddata1 = array();
$count = count($error);
for ($n = 0; $n < $count; $n++) {
    $fechal[] = $error[$n][0];
    $nombrel[] = $error[$n][1];
    $iddata1[] = $error[$n][2];
    mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fechal[$n]','$nombrel[$n]','$iddata1[$n]')");
}
$data = json_encode($arreglo);
$jsondata = "[" . $data . "]"; // give json data format
$myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson.txt";
$doc = fopen($myfile, 'w') or die("can't open the file"); // 'w' to
overwrite and 'a' to append
fwrite($doc, $jsondata);
fclose($doc);

mysql_free_result($result); //free memory
}

public function generator_5variables($variable1, $placel, $variable2,
$variable3, $variable4, $variable5) {
    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsn_monitor', $con);

    $query1 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$placel' and s.nombre =
'$variable1'
order by d.fecha ASC");

    $query2 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$placel' and s.nombre =
'$variable2'

```



```

        order by d.fecha ASC");

        $query3 = sprintf("select d.iddata, d.fecha, d.valor from data d
        inner join parametro p on
d.idparametro=p.idparametro
        inner join nodo n on p.idnodo = n.idnodo
        inner join sensor s on p.idsensor=s.idsensor
        where n.ubicacion = '$placel' and s.nombre =
'$variable3'
        order by d.fecha ASC");

        $query4 = sprintf("select d.iddata, d.fecha, d.valor from data d
        inner join parametro p on
d.idparametro=p.idparametro
        inner join nodo n on p.idnodo = n.idnodo
        inner join sensor s on p.idsensor=s.idsensor
        where n.ubicacion = '$placel' and s.nombre =
'$variable4'
        order by d.fecha ASC");

        $query5 = sprintf("select d.iddata, d.fecha, d.valor from data d
        inner join parametro p on
d.idparametro=p.idparametro
        inner join nodo n on p.idnodo = n.idnodo
        inner join sensor s on p.idsensor=s.idsensor
        where n.ubicacion = '$placel' and s.nombre =
'$variable5'
        order by d.fecha ASC");

        $result1 = mysql_query($query1);
        $arreglo1 = array();$i = 0;
        $error = array();$j1 = 0;
        while ($row = mysql_fetch_array($result1)) {
            $arreglo1[$i][0] = $row["fecha"];
            if (((($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {

                $error[$j1][0] = $row["fecha"];
                $error[$j1][1] = $row["valor"];
                $error[$j1][2] = $row["iddata"];
                $j1++;
            } else {
                $arreglo1[$i][1] = floatval($row["valor"]);
                $i++;
            }
        };
        $fechal = array();
        $nombrel = array();
        $iddatal = array();
        $count = count($error);
        for ($n = 0; $n < $count; $n++) {
            $fechal[] = $error[$n][0];
            $nombrel[] = $error[$n][1];
            $iddatal[] = $error[$n][2];
            mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fechal[$n]','$nombrel[$n]','$iddatal[$n]')");
        }
        $datal = json_encode($arreglo1);
        $jsondatal = "[" . $datal . "]"; // give json data format
    
```

```

    $myfile1 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson51.txt";
    $doc1 = fopen($myfile1, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc1, $jsondata1);
    fclose($doc1);

    mysql_free_result($result1); //free memory
    $result2 = mysql_query($query2);
    $arreglo2 = array();
    $j = 0;
    $error2 = array();
    $j2 = 0;
    while ($row2 = mysql_fetch_array($result2)) {
        $arreglo2[$j][0] = $row2["fecha"];

        if (($row2["valor"]) == "Error_connection") ||
(($row2["valor"]) == "Missing") || (($row2["valor"]) == "OFL") ||
(($row2["valor"]) == "ERROR") || (($row2["valor"]) == "Maintaince") ||
(($row2["valor"]) == "Calibration") || (($row2["valor"]) == "Invalid") ||
(($row2["valor"]) == "Inactive") || (($row2["valor"]) == "") ||
(($row2["valor"]) == "Error_conn") || (($row2["valor"]) == "Error_")) {

            $error2[$j2][0] = $row2["fecha"];
            $error2[$j2][1] = $row2["valor"];
            $error2[$j2][2] = $row2["iddata"];
            $j2++;
        } else {
            $arreglo2[$j][1] = floatval($row2["valor"]);
            $j++;
        }
    };
    $fecha2 = array();
    $nombre2 = array();
    $iddata2 = array();
    $count2 = count($error2);
    for ($n = 0; $n < $count2; $n++) {
        $fecha2[] = $error2[$n][0];
        $nombre2[] = $error2[$n][1];
        $iddata2[] = $error2[$n][2];
        mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fecha2[$n]','$nombre2[$n]','$iddata2[$n]')");
    }
    $data2 = json_encode($arreglo2);
    $jsondata2 = "[" . $data2 . "]"; // give json data format

    $myfile2 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson52.txt";
    $doc2 = fopen($myfile2, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc2, $jsondata2);
    fclose($doc2);
    mysql_free_result($result2); //free memory
    $result3 = mysql_query($query3);
    $arreglo3 = array();
    $k = 0;
    $error3 = array();
    $j3 = 0;
    while ($row3 = mysql_fetch_array($result3)) {
        $arreglo3[$k][0] = $row3["fecha"];

```

```

        if ((($row3["valor"]) == "Error_connection") ||
(($row3["valor"]) == "Missing") || (($row3["valor"]) == "OFL") ||
(($row3["valor"]) == "ERROR") || (($row3["valor"]) == "Maintaince") ||
(($row3["valor"]) == "Calibration") || (($row3["valor"]) == "Invalid") ||
(($row3["valor"]) == "Inactive") || (($row3["valor"]) == "") ||
(($row3["valor"]) == "Error_conn") || (($row3["valor"]) == "Error_")) {

            $error3[$j3][0] = $row3["fecha"];
            $error3[$j3][1] = $row3["valor"];
            $error3[$j3][2] = $row3["iddata"];

            $j3++;
        } else {
            $arreglo3[$k][1] = floatval($row3["valor"]);
            $k++;
        }
    };
    $fecha3 = array();
    $nombre3 = array();
    $iddata3 = array();

    $count3 = count($error3);
    for ($n = 0; $n < $count3; $n++) {
        $fecha3[] = $error3[$n][0];
        $nombre3[] = $error3[$n][1];
        $iddata3[] = $error3[$n][2];

        mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombre,iddata) VALUES
('$fecha3[$n]','$nombre3[$n]','$iddata3[$n]')");
    }
    $data3 = json_encode($arreglo3);
    $jsondata3 = "[" . $data3 . "]"; // give json data format

    $myfile3 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson53.txt";
    $doc3 = fopen($myfile3, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc3, $jsondata3);
    fclose($doc3);
    mysql_free_result($result3); //free memory
    $result4 = mysql_query($query4);
    $arreglo4 = array();
    $l = 0;
    $error4 = array();
    $j4 = 0;
    while ($row4 = mysql_fetch_array($result4)) {
        $arreglo4[$l][0] = $row4["fecha"];
        if ((($row4["valor"]) == "Error_connection") ||
(($row4["valor"]) == "Missing") || (($row4["valor"]) == "OFL") ||
(($row4["valor"]) == "ERROR") || (($row4["valor"]) == "Maintaince") ||
(($row4["valor"]) == "Calibration") || (($row4["valor"]) == "Invalid") ||
(($row4["valor"]) == "Inactive") || (($row4["valor"]) == "") ||
(($row4["valor"]) == "Error_conn") || (($row4["valor"]) == "Error_")) {

            $error4[$j4][0] = $row4["fecha"];
            $error4[$j4][1] = $row4["valor"];
            $error4[$j4][2] = $row4["iddata"];

            $j4++;
        } else {
            $arreglo4[$l][1] = floatval($row4["valor"]);
            $l++;
        }
    }

```

```

    }    };
    $fecha4 = array();
    $nombre4 = array();
    $iddata4 = array();

    $count4 = count($error4);
    for ($n = 0; $n < $count4; $n++) {
        $fecha4[] = $error4[$n][0];
        $nombre4[] = $error4[$n][1];
        $iddata4[] = $error4[$n][2];

        mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fecha4[$n]','$nombre4[$n]','$iddata4[$n]')");
    }
    $data4 = json_encode($arreglo4);
    $jsondata4 = "[" . $data4 . "]"; // give json data format

    $myfile4 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson54.txt";
    $doc4 = fopen($myfile4, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc4, $jsondata4);
    fclose($doc4);
    mysql_free_result($result4); //free memory

    $result5 = mysql_query($query5);
    $arreglo5 = array();
    $m = 0;

    $error5 = array();
    $j5 = 0;
    while ($row5 = mysql_fetch_array($result5)) {

        $arreglo5[$m][0] = $row5["fecha"];

        if (($row5["valor"]) == "Error_connection" ||
(($row5["valor"]) == "Missing") || (($row5["valor"]) == "OFL") ||
(($row5["valor"]) == "ERROR") || (($row5["valor"]) == "Maintaince") ||
(($row5["valor"]) == "Calibration") || (($row5["valor"]) == "Invalid") ||
(($row5["valor"]) == "Inactive") || (($row5["valor"]) == "") ||
(($row5["valor"]) == "Error_conn") || (($row5["valor"]) == "Error_")) {

            $error5[$j5][0] = $row5["fecha"];
            $error5[$j5][1] = $row5["valor"];
            $error5[$j5][2] = $row5["iddata"];

            $j5++;
        } else {
            $arreglo5[$m][1] = floatval($row5["valor"]);
            $m++;
        }
    }
};

    $fecha5 = array();
    $nombre5 = array();
    $iddata5 = array();

    $count5 = count($error5);
    for ($n = 0; $n < $count5; $n++) {
        $fecha5[] = $error5[$n][0];
        $nombre5[] = $error5[$n][1];
        $iddata5[] = $error5[$n][2];

```

```

        mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fecha5[$n]','$nombre5[$n]','$iddata5[$n]')");
    }

    $data5 = json_encode($arreglo5);
    $jsondata5 = "[" . $data5 . "]"; // give json data format

    $myfile5 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson55.txt";
    $doc5 = fopen($myfile5, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc5, $jsondata5);
    fclose($doc5);

    mysql_free_result($result5); //free memory
}
public function generator_5variables($variable1, $placel, $variable2,
$variable3, $variable4, $variable5) {
    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsn_monitor', $con);

    $query1 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$placel' and s.nombre =
'$variable1'
and iddata > ( select MAX(d.iddata) - '288' from
data d)
order by d.fecha ASC");

    $query2 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$placel' and s.nombre =
'$variable2'
and iddata > ( select MAX(d.iddata) - '288' from
data d)
order by d.fecha ASC");

    $query3 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor
where n.ubicacion = '$placel' and s.nombre =
'$variable3'
and iddata > ( select MAX(d.iddata) - '288' from
data d)
order by d.fecha ASC");

    $query4 = sprintf("select d.iddata, d.fecha, d.valor from data d
inner join parametro p on
d.idparametro=p.idparametro
inner join nodo n on p.idnodo = n.idnodo
inner join sensor s on p.idsensor=s.idsensor

```

```

                                where n.ubicacion = '$place1' and s.nombre =
'$variable4'
                                and iddata > ( select MAX(d.iddata) - '288' from
data d)
                                order by d.fecha ASC");

                                $query5 = sprintf("select d.iddata, d.fecha, d.valor from data d
                                inner join parametro p on
d.idparametro=p.idparametro
                                inner join nodo n on p.idnodo = n.idnodo
                                inner join sensor s on p.idsensor=s.idsensor
                                where n.ubicacion = '$place1' and s.nombre =
'$variable5'
                                and iddata > ( select MAX(d.iddata) - '288' from
data d)
                                order by d.fecha ASC");

                                $result1 = mysql_query($query1);
                                $arreglo1 = array();
                                $i = 0;
                                $error = array();
                                $j1 = 0;
                                while ($row = mysql_fetch_array($result1)) {
                                    $arreglo1[$i][0] = $row["fecha"];
                                    if (((($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_")) {

                                        $error[$j1][0] = $row["fecha"];
                                        $error[$j1][1] = $row["valor"];
                                        $error[$j1][2] = $row["iddata"];

                                        $j1++;
                                    } else {

                                        $arreglo1[$i][1] = floatval($row["valor"]);
                                        $i++;
                                    }
                                };
                                $fechal = array();
                                $nombrel = array();
                                $iddatal = array();

                                $count = count($error);
                                for ($n = 0; $n < $count; $n++) {
                                    $fechal[] = $error[$n][0];
                                    $nombrel[] = $error[$n][1];
                                    $iddatal[] = $error[$n][2];

                                    mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fechal[$n]','$nombrel[$n]','$iddatal[$n]')");
                                }
                                $datal = json_encode($arreglo1);
                                $jsondatal = "[" . $datal . "]"; // give json data format

                                $myfile1 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson21.txt";

```

```

        $doc1 = fopen($myfile1, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
        fwrite($doc1, $jsondata1);
        fclose($doc1);

        mysql_free_result($result1); //free memory

        $result2 = mysql_query($query2);
        $arreglo2 = array();
        $j = 0;

        $error2 = array();
        $j2 = 0;
        while ($row2 = mysql_fetch_array($result2)) {
            $arreglo2[$j][0] = $row2["fecha"];

            if (($row2["valor"]) == "Error_connection" ||
(($row2["valor"]) == "Missing") || (($row2["valor"]) == "OFL") ||
(($row2["valor"]) == "ERROR") || (($row2["valor"]) == "Maintaince") ||
(($row2["valor"]) == "Calibration") || (($row2["valor"]) == "Invalid") ||
(($row2["valor"]) == "Inactive") || (($row2["valor"]) == "") ||
(($row2["valor"]) == "Error_conn") || (($row2["valor"]) == "Error_")) {

                $error2[$j2][0] = $row2["fecha"];
                $error2[$j2][1] = $row2["valor"];
                $error2[$j2][2] = $row2["iddata"];

                $j2++;
            } else {
                $arreglo2[$j][1] = floatval($row2["valor"]);
                $j++;
            }
        };
        $fecha2 = array();
        $nombre2 = array();
        $iddata2 = array();

        $count2 = count($error2);
        for ($n = 0; $n < $count2; $n++) {
            $fecha2[] = $error2[$n][0];
            $nombre2[] = $error2[$n][1];
            $iddata2[] = $error2[$n][2];

            mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fecha2[$n]','$nombre2[$n]','$iddata2[$n]')");
        }
        $data2 = json_encode($arreglo2);
        $jsondata2 = "[" . $data2 . "]"; // give json data format

        $myfile2 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson22.txt";
        $doc2 = fopen($myfile2, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
        fwrite($doc2, $jsondata2);
        fclose($doc2);

        mysql_free_result($result2); //free memory
        $result3 = mysql_query($query3);

        $arreglo3 = array();
        $k = 0;

```

```

$error3 = array();
$j3 = 0;

while ($row3 = mysql_fetch_array($result3)) {
    $arreglo3[$k][0] = $row3["fecha"];

    if (($row3["valor"]) == "Error_connection") ||
    (($row3["valor"]) == "Missing") || (($row3["valor"]) == "OFL") ||
    (($row3["valor"]) == "ERROR") || (($row3["valor"]) == "Maintaince") ||
    (($row3["valor"]) == "Calibration") || (($row3["valor"]) == "Invalid") ||
    (($row3["valor"]) == "Inactive") || (($row3["valor"]) == "") ||
    (($row3["valor"]) == "Error_conn") || (($row3["valor"]) == "Error_") {

        $error3[$j3][0] = $row3["fecha"];
        $error3[$j3][1] = $row3["valor"];
        $error3[$j3][2] = $row3["iddata"];

        $j3++;
    } else {
        $arreglo3[$k][1] = floatval($row3["valor"]);
        $k++;
    }
};
$fecha3 = array();
$nombbre3 = array();
$iddata3 = array();

$count3 = count($error3);
for ($n = 0; $n < $count3; $n++) {
    $fecha3[] = $error3[$n][0];
    $nombbre3[] = $error3[$n][1];
    $iddata3[] = $error3[$n][2];

    mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombbre,iddata) VALUES
('$fecha3[$n]','$nombbre3[$n]','$iddata3[$n]')");
}
$data3 = json_encode($arreglo3);
$jsondata3 = "[" . $data3 . "]; // give json data format

$myfile3 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson23.txt";
$doc3 = fopen($myfile3, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
fwrite($doc3, $jsondata3);
fclose($doc3);

mysql_free_result($result3); //free memory

$result4 = mysql_query($query4);

$arreglo4 = array();
$l = 0;

$error4 = array();
$j4 = 0;

while ($row4 = mysql_fetch_array($result4)) {
    $arreglo4[$l][0] = $row4["fecha"];
    if (($row4["valor"]) == "Error_connection") ||
    (($row4["valor"]) == "Missing") || (($row4["valor"]) == "OFL") ||
    (($row4["valor"]) == "ERROR") || (($row4["valor"]) == "Maintaince") ||

```



```

(($row4["valor"]) == "Calibration") || (($row4["valor"]) == "Invalid") ||
(($row4["valor"]) == "Inactive") || (($row4["valor"]) == "") ||
(($row4["valor"]) == "Error_conn") || (($row4["valor"]) == "Error_")) {

    $error4[$j4][0] = $row4["fecha"];
    $error4[$j4][1] = $row4["valor"];
    $error4[$j4][2] = $row4["iddata"];

    $j4++;
} else {
    $arreglo4[$l][1] = floatval($row4["valor"]);
    $l++;
}
};

$fecha4 = array();
$nombbre4 = array();
$iddata4 = array();

$count4 = count($error4);
for ($n = 0; $n < $count4; $n++) {
    $fecha4[] = $error4[$n][0];
    $nombbre4[] = $error4[$n][1];
    $iddata4[] = $error4[$n][2];
    mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombre,iddata) VALUES
('$fecha4[$n]','$nombbre4[$n]','$iddata4[$n]')");
}
$data4 = json_encode($arreglo4);
$jsondata4 = "[" . $data4 . "]"; // give json data format
$myfile4 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson24.txt";
$doc4 = fopen($myfile4, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
fwrite($doc4, $jsondata4);
fclose($doc4);
mysql_free_result($result4); //free memory
$result5 = mysql_query($query5);
$arreglo5 = array();
$m = 0;
$error5 = array();
$j5 = 0;
while ($row5 = mysql_fetch_array($result5)) {
    $arreglo5[$m][0] = $row5["fecha"];
    if (($row5["valor"]) == "Error_connection") ||
(($row5["valor"]) == "Missing") || (($row5["valor"]) == "OFL") ||
(($row5["valor"]) == "ERROR") || (($row5["valor"]) == "Maintaince") ||
(($row5["valor"]) == "Calibration") || (($row5["valor"]) == "Invalid") ||
(($row5["valor"]) == "Inactive") || (($row5["valor"]) == "") ||
(($row5["valor"]) == "Error_conn") || (($row5["valor"]) == "Error_")) {

        $error5[$j5][0] = $row5["fecha"];
        $error5[$j5][1] = $row5["valor"];
        $error5[$j5][2] = $row5["iddata"];

        $j5++;
    } else {
        $arreglo5[$m][1] = floatval($row5["valor"]);
        $m++;
    }
};
$fecha5 = array();
$nombbre5 = array();

```

```

    $iddata5 = array();
    $count5 = count($error5);
    for ($n = 0; $n < $count5; $n++) {
        $fecha5[] = $error5[$n][0];
        $nombre5[] = $error5[$n][1];
        $iddata5[] = $error5[$n][2];

        mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fecha5[$n]','$nombre5[$n]','$iddata5[$n]')");
    }
    $data5 = json_encode($arreglo5);
    $jsondata5 = "[" . $data5 . "]"; // give json data format

    $myfile5 = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson25.txt";
    $doc5 = fopen($myfile5, 'w') or die("can't open the file"); //'w'
to overwrite and 'a' to append
    fwrite($doc5, $jsondata5);
    fclose($doc5);

    mysql_free_result($result5); //free memory
}

public function generator_Estcompara($variable1, $placel, $estandar) {

    $con = mysql_connect('localhost', 'root', 'gtrwsn') or die("No se
pudo conectar: " . mysql_error());
    $db = mysql_select_db('wsn_monitor', $con);
    $query1 = sprintf("select d.iddata, d.fecha, d.valor, e.minimo,
e.maximo from data d
                inner join parametro p on
d.idparametro=p.idparametro
                inner join estandar e on p.idestandar=e.idestandar
                inner join nodo n on p.idnodo = n.idnodo
                inner join sensor s on p.idsensor=s.idsensor
                where n.ubicacion = '$placel' and s.nombre =
'$variable1' and e.nombre='$estandar'
                order by d.fecha ASC");

    $result = mysql_query($query1);

    $arreglo = array();
    $arreglo2 = array();
    $i = 0;
    $error = array();
    $j1 = 0;
    $error2 = array();
    $j2 = 0;

    while ($row = mysql_fetch_array($result)) {
        $arreglo[$i][0] = $row["fecha"];
        if (($row["valor"]) == "Error_connection") ||
(($row["valor"]) == "Missing") || (($row["valor"]) == "OFL") ||
(($row["valor"]) == "ERROR") || (($row["valor"]) == "Maintaince") ||
(($row["valor"]) == "Calibration") || (($row["valor"]) == "Invalid") ||
(($row["valor"]) == "Inactive") || (($row["valor"]) == "") ||
(($row["valor"]) == "Error_conn") || (($row["valor"]) == "Error_") {

            $error[$j1][0] = $row["fecha"];
            $error[$j1][1] = $row["valor"];

```

```

        $error[$j1][2] = $row["iddata"];

        $j1++;
    } else {
        $arreglo[$i][0] = $row["fecha"];
        $arreglo[$i][1] = floatval($row["valor"]);

        $arreglomin[$i][0] = $row["fecha"];
        $arreglomin[$i][1] = floatval($row["minimo"]);

        $arreglomax[$i][0] = $row["fecha"];
        $arreglomax[$i][1] = floatval($row["maximo"]);

        $i++;
    }
};

$fechal = array();
$nombrel = array();
$iddatal = array();

$count = count($error);
for ($n = 0; $n < $count; $n++) {
    $fechal[] = $error[$n][0];
    $nombrel[] = $error[$n][1];
    $iddatal[] = $error[$n][2];

    mysql_query("INSERT INTO wsn_monitor.alerta
(fecha,nombre,iddata) VALUES
('$fechal[$n]','$nombrel[$n]','$iddatal[$n]')");
}
$data = json_encode($arreglo);
$damin = json_encode($arreglomin);
$damax = json_encode($arreglomax);

$daton = "[" . $data . "," . $damin . "," . $damax . "]";
$myfile = $_SERVER["DOCUMENT_ROOT"] .
"/wsn_monitor/datajson/datajson77.txt";
$doc = fopen($myfile, 'w') or die("can't open the file");
fwrite($doc, $daton);
fclose($doc);

$result2 = mysql_query($query2);
$j = 0;
while ($row2 = mysql_fetch_array($result2)) {
    $arreglo2[$j][0] = $row2["fecha"];

    if (($row2["valor"]) == "Error_connection" ||
(($row2["valor"]) == "Missing") || (($row2["valor"]) == "OFL") ||
(($row2["valor"]) == "ERROR") || (($row2["valor"]) == "Maintaince") ||
(($row2["valor"]) == "Calibration") || (($row2["valor"]) == "Invalid") ||
(($row2["valor"]) == "Inactive") || (($row2["valor"]) == "") ||
(($row2["valor"]) == "Error_conn") || (($row2["valor"]) == "Error_")) {
        $error2[$j2][0] = $row2["fecha"];
        $error2[$j2][1] = $row2["valor"];
        $error2[$j2][2] = $row2["iddata"];
        $j2++;
    } else {
        $arreglo2[$j][1] = floatval($row2["valor"]);
        $j++;
    }
};

```

```

    $fecha2 = array();
    $nombre2 = array();
    $iddata2 = array();

    $count2 = count($error2);
    for ($n = 0; $n < $count2; $n++) {
        $fecha2[] = $error2[$n][0];
        $nombre2[] = $error2[$n][1];
        $iddata2[] = $error2[$n][2];

        mysql_query("INSERT INTO wsn_monitor.alerta
(fechar,nombre,iddata) VALUES
('$fecha2[$n]','$nombre2[$n]','$iddata2[$n]')");
    }

    $data2 = json_encode($arreglo2);
    $daton2 = $data2 . ".json";
    $doc2 = fopen($myfile, 'a') or die("can't open the file");
    fwrite($doc2, $daton2);
    fclose($doc2);

    mysql_free_result($result);
}
}

```

3.3. EstandarController.php

```

<?php

class EstandarController extends Controller
{
    public $layout='//layouts/column2';
    public function filters()
    {
        return array(
            'accessControl', // perform access control for
CRUD operations
            'postOnly + delete', // we only allow deletion
via POST request
        );
    }
    public function accessRules()
    {
return array(array('allow', 'actions'=>array('index','view'),
'users'=>array('*')),array('allow','actions'=>array('create','update'),'
users'=>array('@'),),array('allow','actions'=>array('admin','delete'),'
'users'=>array('admin')),array('deny', 'users'=>array('*'),
), );
    }

    public function actionView($id)
    {
        $this->render('view',array(
            'model'=>$this->loadModel($id),
        ));
    }
    public function actionCreate()
    {
        $model=new Estandar;
        if(isset($_POST['Estandar']))
    }
}

```

```

        {
            $model->attributes=$_POST['Estandar'];
            if($model->save())
                $this->
>redirect(array('view','id'=>$model->idestandar));
        }

        $this->render('create',array(
            'model'=>$model,
        ));
    }
    public function actionUpdate($id)
    {
        $model=$this->loadModel($id);
        if(isset($_POST['Estandar']))
        {
            $model->attributes=$_POST['Estandar'];
            if($model->save())
                $this->
>redirect(array('view','id'=>$model->idestandar));
        }
        $this->render('update',array(
            'model'=>$model,
        ));
    }
    public function actionDelete($id)
    {
        $this->loadModel($id)->delete();
        if(!isset($_GET['ajax']))
            $this->redirect(isset($_POST['returnUrl']) ?
$_POST['returnUrl'] : array('admin'));
    }
    public function actionIndex()
    {
        $dataProvider=new CActiveDataProvider('Estandar');
        $this->render('index',array(
            'dataProvider'=>$dataProvider,
        ));
    }
    public function actionAdmin()
    {
        $model=new Estandar('search');
        $model->unsetAttributes(); // clear any default
values
        if(isset($_GET['Estandar']))
            $model->attributes=$_GET['Estandar'];

        $this->render('admin',array(
            'model'=>$model,
        ));
    }
    public function loadModel($id)
    {
        $model=Estandar::model()->findByPk($id);
        if($model===null)
            throw new CHttpException(404,'The requested
page does not exist.');
```

return \$model;

```

    }
    protected function performAjaxValidation($model)
    {
        if(isset($_POST['ajax']) &&
$_POST['ajax']==='estandar-form')
        {
            echo CActiveForm::validate($model);

```

```

        Yii::app()->end();
    }}}

```

3.4. SensorController.php

```

<?php
class SensorController extends Controller
{
    public function filters()
    {
        return array(
            'accessControl', operations
            'postOnly + delete', request
        );
    }
    public function accessRules()
    {
        return array(
            array('allow',
                'actions'=>array('index','view'),
                'users'=>array('*'),
            ),
            array('allow', // allow authenticated user to perform
                'create' and 'update' actions
                'actions'=>array('create','update'),
                'users'=>array('@'),
            ),
            array('allow', 'actions'=>array('admin','delete'),
                'users'=>array('admin'),
            ),
            array('deny', 'users'=>array('*'),
            ), );
    }
    public function actionView($id) {
        $this->render('view',array(
            'model'=>$this->loadModel($id), ));
    }
    public function actionCreate()
    {$model=new Sensor;
        if(isset($_POST['Sensor']))
        {
            $model->attributes=$_POST['Sensor'];
            if($model->save())
                $this->redirect(array('view','id'=>$model-
>idsensor));
        }
        $this->render('create',array(
            'model'=>$model, ));
    }
    public function actionUpdate($id) {
        $model=$this->loadModel($id);
        if(isset($_POST['Sensor']))
        {
            $model->attributes=$_POST['Sensor'];
            if($model->save())
                $this->redirect(array('view','id'=>$model-
>idsensor));
        }
        $this->render('update',array(
            'model'=>$model,
        ));
    }
    public function actionDelete($id)
    {
        $this->loadModel($id)->delete();
        if(!isset($_GET['ajax']))

```

```

        $this->redirect(isset($_POST['returnUrl']) ?
$_POST['returnUrl'] : array('admin'));
    }

    public function actionIndex()
    {
        $dataProvider=new CActiveDataProvider('Sensor');
        $this->render('index',array(
            'dataProvider'=>$dataProvider,
        ));
    }
    public function actionAdmin()
    {
        $model=new Sensor('search');
        $model->unsetAttributes();
        if(isset($_GET['Sensor']))
            $model->attributes=$_GET['Sensor'];

        $this->render('admin',array(
            'model'=>$model,
        ));
    }
    public function loadModel($id)
    {
        $model=Sensor::model()->findByPk($id);
        if($model===null)
            throw new CHttpException(404,'The requested page does not
exist.');
```

```

        return $model;
    }
    protected function performAjaxValidation($model)
    {
        if(isset($_POST['ajax']) && $_POST['ajax']==='sensor-form')
        {
            echo CActiveForm::validate($model);
            Yii::app()->end();
        }
    }
}

```

3.5. SiteController.php

```

<?php
class SiteController extends Controller
{
    public function actions()
    {
        return array(
            'captcha'=>array(
                'class'=>'CCaptchaAction',
                'backColor'=>0xFFFFFF,
            ),
            'page'=>array(
                'class'=>'CViewAction',
            ),
        );
    }
    public function actionIndex() {
        $this->render('index');
    }
    public function actionError()
    {
        if($error=Yii::app()->errorHandler->error)
        {
            if(Yii::app()->request->isAjaxRequest)
                echo $error['message'];
            else
                $this->render('error', $error);
        }
    }
}

```

```
public function actionContact()
{
    $model=new ContactForm;
    if(isset($_POST['ContactForm']))
    {
        $model->attributes=$_POST['ContactForm'];
        if($model->validate())
        {
            $name='=?UTF-8?B?'.base64_encode($model->name).'?=';
            $subject='=?UTF-8?B?'.base64_encode($model->subject).'?=';
            $headers="From: $name <{$model->email}>\r\n".
                "Reply-To: {$model->email}\r\n".
                "MIME-Version: 1.0\r\n".
                "Content-type: text/plain; charset=UTF-8";

            mail(Yii::app()->params['adminEmail'],$subject,$model->body,$headers);
            Yii::app()->user->setFlash('contact','Thank you for contacting us. We will respond to you as soon as possible.');
```

```
        $this->refresh();
        }
        $this->render('contact',array('model'=>$model));
    }
    public function actionLogin() {
        $model=new LoginForm; ($POST['ajax']) &&
        $_POST['ajax']=== 'login-form')
        {
            echo CActiveForm::validate($model);
            Yii::app()->end();
        }
        if(isset($_POST['LoginForm']))
        {
            $model->attributes=$_POST['LoginForm'];
            if($model->validate() && $model->login())
            {
                $this->redirect(Yii::app()->user->returnUrl);
            }
            $this->render('login',array('model'=>$model));
        }
    }
    public function actionGraphics(){
        $this->render('graphics');
    }
    public function actionRealtime(){
        $this->render('realtime');
    }
    public function actionComponents(){
        $this->render('components');
    }
    public function actionLogout() {
        Yii::app()->user->logout();
        $this->redirect(Yii::app()->homeUrl);
    }
}
```

3.6. UsuariosController.php

```
<?php
class UsuariosController extends Controller
{
    public function filters() {
        return array(
            'accessControl', // perform access control for CRUD
            'postOnly + delete', // we only allow deletion via POST request
        );
    }
    public function accessRules()
    {
        return array(
```



```

        'actions'=>array('create'),
        'users'=>array('*'),
    ),
        'actions'=>array('index','update','view'),
        'users'=>array('@'),
    ),
        'actions'=>array('admin','delete'),
        'users'=>array('admin'),
    ),
    array('deny', 'users'=>array('*'),
    ),
    );
}
public function actionView($id)
{
    $this->render('view',array(
        'model'=>$this->loadModel($id),
    ));
}
public function actionCreate() {
    $model=new Usuarios;
    if(isset($_POST['Usuarios'])) {
        $model->attributes=$_POST['Usuarios'];
        if($model->validate()){ $model->password=md5($model->password);
        }
        if($model->save())
    }
    $this->redirect(array('view','id'=>$model->idusuario));
}
    $this->render('create',array(
        'model'=>$model,
    ));
}
public function actionUpdate($id)
{
    $model=$this->loadModel($id);

    if(isset($_POST['Usuarios']))
    {
        $model->attributes=$_POST['Usuarios'];
        if($model->validate()){
            $model->password=md5($model->password);
        }
        if($model->save())
    }
    $this->redirect(array('view','id'=>$model->idusuario));
}
    $this->render('update',array(
        'model'=>$model,
    ));
}
public function actionDelete($id) {
    $this->loadModel($id)->delete();
    if(!isset($_GET['ajax']))
        $this->redirect(isset($_POST['returnUrl']) ?
$_POST['returnUrl'] : array('admin'));
}
public function actionIndex()
{
    $dataProvider=new CActiveDataProvider('Usuarios');
    $this->render('index',array(
        'dataProvider'=>$dataProvider,
    ));
}
public function actionAdmin()
{

```

```

        $model=new Usuarios('search');
        $model->unsetAttributes(); // clear any default values
        if(isset($_GET['Usuarios']))
            $model->attributes=$_GET['Usuarios'];

        $this->render('admin',array(
            'model'=>$model,
        ));
    }
    public function loadModel($id)
    {
        $model=Usuarios::model()->findByPk($id);
        if($model===null)
            throw new CHttpException(404,'The requested page does not
exist.');
```

```

        return $model;
    }
    protected function performAjaxValidation($model)
    {
        if(isset($_POST['ajax']) && $_POST['ajax']==='usuarios-form')
        {
            echo CActiveForm::validate($model);
            Yii::app()->end();
        }
    }
}

```

4. Models

4.1. Alerta.php

```

<?php
class Alerta extends CActiveRecord
{
    public static function model($className=__CLASS__)
    {
        return parent::model($className);
    }
    public function tableName()
    {
        return 'alerta';
    }
    public function rules()
    {
        return array(
            array('nombre, descripcion, tipo, visualizar, deshabilitar,
iddata', 'required'),
            array('iddata', 'numerical', 'integerOnly'=>true),
            array('nombre', 'length', 'max'=>20),
            array('descripcion', 'length', 'max'=>60),
            array('tipo', 'length', 'max'=>15),
            array('visualizar, deshabilitar', 'length', 'max'=>1),
            array('idalerta, nombre, descripcion, tipo, visualizar,
deshabilitar, iddata', 'safe', 'on'=>'search'),
        );
    }
    public function relations()
    {return array(
        array('data' => array(self::BELONGS_TO, 'Data', 'iddata'),
    );
    }
    public function attributeLabels()
    {
        return array(
            'idalerta' => 'Idalerta',
            'nombre' => 'Nombre',
            'descripcion' => 'Descripcion',
            'tipo' => 'Tipo',
            'visualizar' => 'Visualizar',
            'deshabilitar' => 'Deshabilitar',
        );
    }
}

```

```

        'iddata' => 'Iddata',
    );
}
public function search()
{
    $criteria=new CDbCriteria;
    $criteria->compare('idalerta',$this->idalerta);
    $criteria->compare('nombre',$this->nombre,true);
    $criteria->compare('descripcion',$this->descripcion,true);
    $criteria->compare('tipo',$this->tipo,true);
    $criteria->compare('visualizar',$this->visualizar,true);
    $criteria->compare('deshabilitar',$this->deshabilitar,true);
    $criteria->compare('iddata',$this->iddata);
    return new CActiveDataProvider($this, array(
        'criteria'=>$criteria,
    ));
}
}

```

4.2. Data.php

```

<?php
class Data extends CActiveRecord
{
    public function setUbicacion($value){
        $this->ubicacion=$value;
    }
    public static function model($className=__CLASS__) {
        return parent::model($className);
    }
    public function tableName() {
        return 'data';
    }
    public function rules() {
        return array(
            array('valor, idparametro, idestado', 'required'),
            array('idparametro, idestado', 'numerical',
                'integerOnly'=>true),
            array('fecha', 'length', 'max'=>30),
            array('valor', 'length', 'max'=>10),
            array('fecha, valor, idparametro, idestado, ubicacion',
                'safe', 'on'=>'search'),
        );
    }
    public function relations()
    {
        return array(
            'alertas' => array(self::HAS_MANY, 'Alerta', 'iddata'),
            'estado' => array(self::BELONGS_TO, 'Estado',
                'idestado'),
            'parametro' => array(self::BELONGS_TO, 'Parametro',
                'idparametro'),
        );
    }
    public function attributeLabels() {
        return array(
            'iddata' => 'Iddata',
            'fecha' => 'Fecha',
            'valor' => 'Valor',
            'idparametro' => 'Idparametro',
            'idestado' => 'Idestado',
        );
    }
    public function search()
    {
        $criteria=new CDbCriteria;
        $criteria->compare('iddata',$this->iddata);
        $criteria->compare('fecha',$this->fecha,true);
        $criteria->compare('valor',$this->valor,true);
        $criteria->compare('idparametro',$this->idparametro);
    }
}

```

```

        $criteria->compare('idestado',$this->idestado);

        return new CActiveDataProvider($this, array(
            'criteria'=>$criteria,
        ));
    }}

```

4.3. Estado.php

```

<?php
class Estado extends CActiveRecord{
    public static function model($className=__CLASS__)
    {
        return parent::model($className);
    }

    public function tableName()
    {
        return 'estado';
    }
    public function rules()
    {
        return array(
            array('nombre, descripcion, deshabilitar', 'required'),
            array('nombre', 'length', 'max'=>20),
            array('descripcion', 'length', 'max'=>60),
            array('deshabilitar', 'length', 'max'=>1),
            array('idestado, nombre, descripcion, deshabilitar', 'safe',
'on'=>'search'),
        );
    }
    public function relations()
    {return array(
        'datas' => array(self::HAS_MANY, 'Data', 'idestado'),
    );
    }
    public function attributeLabels()
    {
        return array(
            'idestado' => 'Idestado',
            'nombre' => 'Nombre',
            'descripcion' => 'Descripcion',
            'deshabilitar' => 'Deshabilitar',
        );
    }
    public function search()
    {
        $criteria=new CDbCriteria;
        $criteria->compare('idestado',$this->idestado);
        $criteria->compare('nombre',$this->nombre,true);
        $criteria->compare('descripcion',$this->descripcion,true);
        $criteria->compare('deshabilitar',$this->deshabilitar,true);

        return new CActiveDataProvider($this, array(
            'criteria'=>$criteria,
        ));
    }}

```

4.4. LoginForm.php

```

<?php
class LoginForm extends CFormModel{
    public $username;
    public $password;
    public $rememberMe;
    private $_identity;
    public function rules()
    {return array(
array('username, password','required','message'=>'El {attribute} no puede
estar vacio'),array('rememberMe', 'boolean'), array('password',
'authenticate')));
    }
    public function attributeLabels()
    {
        return array(

```

```

        'rememberMe'=>'Recordar mi cuenta',
        'username'=>'correo',
        'password'=>'contraseña',
    );    }
    public function authenticate($attribute,$params)    {
        if(!$this->hasErrors())
        {
            $this->_identity=new UserIdentity($this->username,
            $this->password);
            if(!$this->_identity->authenticate())
                $this->addError('password','Incorrect
            username or password.');
```

4.5. Usuarios.php

```

<?php
class Usuarios extends CActiveRecord{
    public static function model($className=__CLASS__)
    {
        return parent::model($className);    }
    public function tableName()
    {
        return 'usuarios';    }
    public function rules()
    {
        return array(
            array('nombres, apellidos, correo, password,
            institucion, motivo', 'required'),
            array('nombres, apellidos, institucion', 'length',
            'max'=>20),
            array('correo', 'length', 'max'=>25),
            array('password', 'length', 'max'=>100),
            array('motivo', 'length', 'max'=>100),
            array('privilegio', 'length', 'max'=>10),
            array('nombres, apellidos, correo, institucion,
            motivo, privilegio', 'safe', 'on'=>'search'),
        );    }
    public function relations()    {
        return array(
            'logs' => array(self::HAS_MANY, 'Logs',
            'idusuario'),
        );    }
    public function attributeLabels()
    {
        return array(

```

```

        'idusuario' => 'Idusuario',
        'nombres' => 'Nombres',
        'apellidos' => 'Apellidos',
        'correo' => 'Correo',
        md5('password') => 'Password',
        'institucion' => 'Institucion',
        'motivo' => 'Motivo',
        'privilegio' => 'Privilegio',
    );
}

public function search()
{
    $criteria=new CDbCriteria;
    $criteria->compare('idusuario',$this->idusuario);
    $criteria->compare('nombres',$this->nombres,true);
    $criteria->compare('apellidos',$this->apellidos,true);
    $criteria->compare('correo',$this->correo,true);
    $criteria->compare('password',$this->password);
    $criteria->compare('institucion',$this->institucion,true);
    $criteria->compare('motivo',$this->motivo,true);
    $criteria->compare('privilegio',$this->privilegio);

    return new CActiveDataProvider($this, array(
        'criteria'=>$criteria,
    ));}

```

5. Views

5.1. Alerta

5.1.1. _form.php

```

<?php
<div class="form">
<?php $form=$this->beginWidget('CActiveForm', array(
    'id'=>'alerta-form',
    'enableAjaxValidation'=>false,
)); ?>
<p class="note">Fields with <span class="required">*</span> are required.</p>
<?php echo $form->errorSummary($model); ?>
<div class="row">
    <?php echo $form->labelEx($model,'fecha'); ?>
    <?php echo $form->textField($model,'fecha'); ?>
    <?php echo $form->error($model,'fecha'); ?>
</div>

<div class="row">
<?php echo $form->labelEx($model,'nombre'); ?><?php echo $form->
>textField($model,'nombre',array('size'=>20,'maxlength'=>20)); ?>
<?php echo $form->error($model,'nombre'); ?></div>
<div class="row">
<?php echo $form->labelEx($model,'descripcion'); ?> <?php echo $form->
>textField($model,'descripcion',array('size'=>60,'maxlength'=>60)); ?>
<?php echo $form->error($model,'descripcion'); ?></div>
<div class="row">
<?php echo $form->labelEx($model,'tipo'); ?> <?php echo $form->
>textField($model,'tipo',array('size'=>15,'maxlength'=>15)); ?>
<?php echo $form->error($model,'tipo'); ?></div> <div class="row">
<?php echo $form->labelEx($model,'visualizar'); ?> <?php echo $form->
>textField($model,'visualizar',array('size'=>1,'maxlength'=>1)); ?>
<?php echo $form->error($model,'visualizar'); ?></div>
<div class="row"> <?php echo $form->labelEx($model,'deshabilitar'); ?>

```

```

<?php echo $form-
>textField($model,'deshabilitar',array('size'=>1,'maxlength'=>1)); ?> <?php
echo $form->error($model,'deshabilitar'); ?> </div>
<div class="row"> <?php echo $form->labelEx($model,'iddata'); ?> <?php echo
$form->textField($model,'iddata'); ?><?php echo $form-
>error($model,'iddata'); ?> </div>
<div class="row buttons">
<?php echo CHtml::submitButton($model->isNewRecord ? 'Create' : 'Save'); ?>
</div>
<?php $this->endWidget(); ?></div><!-- form -->

```

5.1.2. Admin.php

```

<?php
$this->breadcrumbs=array(
    'Alertas'=>array('index'),
    'Manage',
);
$this->menu=array(
    array('label'=>'List Alerta', 'url'=>array('index')),
    array('label'=>'Create Alerta', 'url'=>array('create')),
);
Yii::app()->clientScript->registerScript('search', "
$('.search-button').click(function(){
    $('.search-form').toggle();
    return false;
});
$('.search-form form').submit(function(){
    $('#alerta-grid').yiiGridView('update', {
        data: $(this).serialize()
    }); return false;});
");
?>
<h1>Manage Alertas</h1>
<p>
You may optionally enter a comparison operator (<b>&lt;</b>, <b>&lt;=</b>,
<b>&gt;</b>, <b>&gt;=</b>, <b>&lt;&gt;</b>
or <b>=</b>) at the beginning of each of your search values to specify how
the comparison should be done.
</p>
<?php echo CHtml::link('Advanced Search','#',array('class'=>'search-
button')); ?>
<div class="search-form" style="display:none">
<?php $this->renderPartial('_search',array(
    'model'=>$model,
)); ?>
</div>
<?php $this->widget('zii.widgets.grid.CGridView', array(
    'id'=>'alerta-grid',
    'dataProvider'=>$model->search(),
    'filter'=>$model,
    'columns'=>array(
        'idalerta',
        'fecha',
        'nombre',
        'descripcion',
        'tipo',
        'visualizar',
        /*
        'deshabilitar',
        'iddata',
        */

```

```
array(
    'class'=>'CButtonColumn', ),    ),)); ?>
```

5.1.3. Create.php

```
<?php
$this->breadcrumbs=array(
    'Alertas'=>array('index'),
    'Create',);
$this->menu=array(
    array('label'=>'List Alerta', 'url'=>array('index')),
    array('label'=>'Manage Alerta', 'url'=>array('admin')));?>
<h1>Create Alerta</h1>
<?php echo $this->renderPartial('_form', array('model'=>$model)); ?>
```

5.1.4. Index.php

```
<?php
$this->breadcrumbs=array(
    'Alertas',);
$this->menu=array(
    array('label'=>'Create Alerta', 'url'=>array('create')),
    array('label'=>'Manage Alerta', 'url'=>array('admin')));?>
<h1>Alertas</h1>
<?php $this->widget('zii.widgets.CListView', array(
    'dataProvider'=>$dataProvider,
    'itemView'=>'_view',
)); ?>
```

5.1.5. View.php

```
<?php
$this->breadcrumbs=array(
    'Alertas'=>array('index'),
    $model->idalerta,);
$this->menu=array(
    array('label'=>'List Alerta', 'url'=>array('index')),
    array('label'=>'Create Alerta', 'url'=>array('create')),
    array('label'=>'Update Alerta', 'url'=>array('update', 'id'=>$model->idalerta)),
    array('label'=>'Delete Alerta', 'url'=>'#',
    'linkOptions'=>array('submit'=>array('delete', 'id'=>$model->idalerta), 'confirm'=>'Are you sure you want to delete this item?')),
    array('label'=>'Manage Alerta', 'url'=>array('admin')));?>
<h1>View Alerta #<?php echo $model->idalerta; ?></h1>
<?php $this->widget('zii.widgets.CDetailView', array(
    'data'=>$model,
    'attributes'=>array(
        'idalerta',
        'fecha',
        'nombre',
        'descripcion',
        'tipo',
        'visualizar',
        'deshabilitar',
        'iddata',
    ), )); ?>
```


5.2. Data

5.2.1. Compara.php

```

<link rel="stylesheet" type="text/css" href="jqplot/jquery.jqplot.min.css"
/><link rel="stylesheet" type="text/css"
href="jqplot/syntaxhighlighter/styles/examples.min.css" />
<link rel="stylesheet" type="text/css"
href="jqplot/syntaxhighlighter/styles/shCoreDefault.min.css" />
<link rel="stylesheet" type="text/css"
href="jqplot/syntaxhighlighter/styles/shThemejqPlot.min.css" />
<script class="include" type="text/javascript"
src="jqplot/jquery.min.js"></script>
<h2 style="color:#09f;margin-left:20px;">
  <?php
    if ($place1 != "" && $variable1 != "" && $variable2 != "" && $place2 !=
    "")
      echo $variable1 . ' en ' . $place1 . ' vs ' . $variable2 . ' en ' .
    $place2;
    else {
      echo 'Selecciona los parámetros que deseas comparar';
    }
  ?>
</h2>
<script src="/wsn_monitor/jquery/jquery.js"></script>
<div class="ui-grid-a">
<div class="ui-block-a" align="center" style="width: 30%">
  <TABLE BORDER=1 WIDTH=300>
    <tr>
      <TD WIDTH=100 style="background:
#0a92bd;color:#ffffff;font-size: 20px;text-align: center;border-
radius:3px;border-bottom: 5px solid #ffffff">
        <b>Alertas</b>
      </TD>
    </tr>
    <?php
      $nodos = Nodo::model()->findAll();
      foreach ($nodos as $nodo) {
        ?>

        <tr>
          <TD WIDTH=100 style="background:
#d9d9d9;color:#505050;font-size: 20px;text-align: center;border-
radius:3px;border-bottom: 2px solid #ffffff">
            <?php echo $nodo->ubicacion; ?>
          </TD>
        </tr>
        <?php } ?>
      </TABLE>
    </div>-->
    <div class="ui-block-b" align="center" style="width: 70%">
      <form action="<?php echo Yii::app()->request->baseUrl;
?>/index.php" method="get">

        <input type="hidden" name="r" value="data/compara"/>
        <?php echo "Ubicación : " ?>

        <select name="place1">
          <?php
            $nodos = Nodo::model()->findAll();

```

```

        foreach ($nodos as $nodo) {
            ?>
<option value="<?php echo $nodo->ubicacion; ?>">
<?php echo $nodo->ubicacion; ?>                                </option>
            <?php } ?>
        </select>

        <?php echo "Parámetro :" ?>
        <select name="variable1">
            <?php
                $sensores = Sensor::model()->findAll();
                foreach ($sensores as $sensor) {
                    ?>
                    <option value="<?php echo $sensor->nombre; ?>">
<?php echo $sensor->nombre . " " . "(" . $sensor->unidad . ")"; ?>
                    </option>
                <?php } ?>
            </select>
            <?php echo "Ubicación :" ?>
            <select name="place2">
                <?php
                    $nodos2 = Nodo::model()->findAll();
                    foreach ($nodos2 as $nodo2) {
                        ?>
                        <option value="<?php echo $nodo2->ubicacion; ?>">
                            <?php echo $nodo2->ubicacion; ?>
                        </option>
                    <?php } ?>
                </select>
            <?php echo "Parámetro :" ?>
            <select name="variable2">
                <?php
                    $sensores2 = Sensor::model()->findAll();
                    foreach ($sensores2 as $sensor2) {
                        ?>
                        <option value="<?php echo $sensor2->nombre; ?>">
                            <?php echo $sensor2->nombre . " " . "(" . $sensor2->
unidad . ")"; ?>
                        </option>
                    <?php } ?>
                </select>
            &nbsp; &nbsp;
            <input type="submit" value="Mostrar" />
        </form></div></div><br>

<b style="margin-left:70px">
    <?php
        echo CHtml::link('Especificar un rango de fechas', Yii::app()-
>createUrl('Data/comrango'));
    ?>
</b>

<?php if ($place1 != "" && $variable1 != "" && $variable2 != "" && $place2
!= "") { ?>
    <div id="chart" style="width: 100%; height: 400px;margin-left:
100px;"></div>
<?php } ?>

<script type="text/javascript">
    $(document).ready(function() {
        var ajaxDataRenderer = function(url, plot, options) {

            var ret = null;

```

```

$.ajax({
  async: false,
  url: url,
  dataType: "json",
  success: function(data) {
    ret = data;
  }
});
return ret;
};

var jsonurl = "/datajson/datajson2.txt";
$.jqplot.config.enablePlugins = true;
var plot1 = $.jqplot('chart', jsonurl, {
  title: ' ',
  dataRenderer: ajaxDataRenderer,
  dataRendererOptions: {
    unusedOptionalUrl: jsonurl
  },
  animate: true,
  animateReplot: true,
  series: [{showLine: false,
  markerOptions: {style: 'filledCircle'},
  rendererOptions: {
    smooth: true
  }
},
{showLine: false,
  markerOptions: {style: 'filledCircle'},
  rendererOptions: {
    smooth: true
  }
}],
axes: {
  xaxis: {
    renderer: $.jqplot.DateAxisRenderer,
    rendererOptions: {
      tickRenderer: $.jqplot.CanvasAxisTickRenderer
    },
    tickOptions: {
      formatString: '%e %b %Y, %H:%M',
      fontSize: '10pt',
      fontFamily: 'Tahoma',
      angle: -40
    }
  },
  yaxis: {
    autoscale: true,
    tickRenderer: $.jqplot.CanvasAxisTickRenderer,
    tickOptions: {
      fontSize: '10pt',
      fontFamily: 'Tahoma',
      formatString: '%d ',
      angle: 10
    }
  }
},
  cursor: {
    zoom: true,
    looseZoom: true
  }
});
});
</script>
<script type="text/javascript" src="jqplot/jquery.jqplot.min.js"></script>
<script type="text/javascript"
src="jqplot/syntaxhighlighter/scripts/shCore.min.js"></script>
<script type="text/javascript"
src="jqplot/syntaxhighlighter/scripts/shBrushJScript.min.js"></script>

```

```

<script type="text/javascript"
src="jqplot/syntaxhighlighter/scripts/shBrushXml.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.canvasTextRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.canvasAxisTickRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.dateAxisRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.cursor.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.json2.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.highlighter.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.logAxisRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.canvasAxisLabelRenderer.min.js"></script>

```

5.2.2. Rango.php

```

<link rel="stylesheet" type="text/css" href="jqplot/jquery.jqplot.min.css"
/><link rel="stylesheet" type="text/css"
href="jqplot/syntaxhighlighter/styles/examples.min.css" />
<link rel="stylesheet" type="text/css"
href="jqplot/syntaxhighlighter/styles/shCoreDefault.min.css" />
<link rel="stylesheet" type="text/css"
href="jqplot/syntaxhighlighter/styles/shThemejqPlot.min.css" />
<script class="include" type="text/javascript"
src="jqplot/jquery.min.js"></script>
<h2 style="color:#09f;margin-left:20px;"
  <?php if($place!="" && $variable!="" && $inicio!="" && $fin!="")
    echo $variable .' en '. $place .' desde '.$inicio.' hasta
    '.$fin;
    else{ echo 'Selecciona los parámetros y el rango que deseas
comparar';};
  ?> </h2>
<form style="color:#09f;margin-left:80px;" action="<?php echo Yii::app()-
>request->baseurl; ?>/index.php" method="get">
  <input type="hidden" name="r" value="data/rango"/>
  <h4><?php echo "Ubicación :"?>
  <select name="place">
    <?php
      $nodos = Nodo::model()->findAll();
      foreach ($nodos as $nodo) {
        ?>
        <option value="<?php echo $nodo->ubicacion; ?>">
          <?php echo $nodo->ubicacion; ?>
        </option>
      <?php } ?>
    </select>
  &nbsp; &nbsp; &nbsp; &nbsp; &nbsp;
  <?php echo "Parámetro :"?>
  <select name="variable">
    <?php
      $sensores = Sensor::model()->findAll();
      foreach ($sensores as $sensor) {
        ?>
        <option value="<?php echo $sensor->nombre; ?>">
          <?php echo $sensor->nombre; ?>

```



```

        zoom: true,
        looseZoom: true
    }
});
});
</script>
<script type="text/javascript" src="jqplot/jquery.jqplot.min.js"></script>
<script type="text/javascript"
src="jqplot/syntaxhighlighter/scripts/shCore.min.js"></script>
<script type="text/javascript"
src="jqplot/syntaxhighlighter/scripts/shBrushJScript.min.js"></script>
<script type="text/javascript"
src="jqplot/syntaxhighlighter/scripts/shBrushXml.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.canvasTextRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.canvasAxisTickRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.dateAxisRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.cursor.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.json2.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.highlighter.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.logAxisRenderer.min.js"></script>
<script language="javascript" type="text/javascript"
src="jqplot/plugins/jqplot.canvasAxisLabelRenderer.min.js"></script>

```

5.3. Layouts

5.3.1. Main.php

```

<?php
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<meta name="language" content="en" />
<link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
>request->baseUrl; ?>/css/screen.css" media="screen, projection" />
<link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
>request->baseUrl; ?>/css/print.css" media="print" />
<link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
>request->baseUrl; ?>/css/main.css" />
<link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
>request->baseUrl; ?>/css/form.css" />
<title>
<?php echo CHtml::encode($this->pageTitle); ?></title>
</head><body>
<div class="container" id="page">
    <div id="header">
        <div id="logo">
            <a href="http://www.pucp.edu.pe/"></a>
            &nbsp;
            <b> <?php echo CHtml::encode(Yii::app()->name); ?> </b>
            &nbsp; &nbsp; &nbsp; &nbsp;
            <a href="http://www.cela-project.net/"></a>
        </div>
    </div><!-- header -->

```

```

        <div id="mainmenu">
            <?php $this->widget('zii.widgets.CMenu',array(
                'items'=>array(
                    array('label'=>'Principal', 'url'=>array('/site/index')),
                    array('label'=>'Componentes', 'url'=>array('/site/components')),
                    array('label'=>'Historial', 'url'=>array('/site/graphics')),
                    array('label'=>'Tiempo real', 'url'=>array('/site/realtime')),
                    array('label'=>'Contacto', 'url'=>array('/site/contact')),
                    array('label'=>'Perfil', 'url'=>array('/site/usuarios')),
                    array('label'=>'Ingresar', 'url'=>array('/site/login'),
                        'visible'=>Yii::app()->user->isGuest),
                    array('label'=>'Salir ('.Yii::app()->user->name.'),'
                        'url'=>array('/site/logout'), 'visible'=>!Yii::app()->user->isGuest
                    ),
                )); ?>
        </div><!-- mainmenu -->
        <?php if(isset($this->breadcrumbs)):?>
            <?php $this->widget('zii.widgets.CBreadcrumbs', array(
                'links'=>$this->breadcrumbs,
            )); ?><!-- breadcrumbs -->
        <?php endif?><?php echo $content; ?><div class="clear"></div>
        <div id="footer">
            Copyright &copy; <?php echo date('Y'); ?>
            by <?php echo CHtml::link('GTR-PUCP',"http://gtr.telecom.pucp.edu.pe/");
            ?><br/>
            All Rights Reserved.<br/>
            <?php echo ' ' //Yii::powered(); ?>
        </div><!-- footer --></div><!-- page --></body></html>
    
```

5.4. Nodo

5.4.1. View.php

```

        <?php /* @var $this Controller */ ?>
        <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
            "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
        <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
        <head>
            <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
            <meta name="language" content="en" />
            <!-- blueprint CSS framework -->
            <link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
            >request->baseUrl; ?>/css/screen.css" media="screen, projection" />
            <link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
            >request->baseUrl; ?>/css/print.css" media="print" />
            <!--[if lt IE 8]>
            <link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
            >request->baseUrl; ?>/css/ie.css" media="screen, projection" />
            <![endif]-->
            <link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
            >request->baseUrl; ?>/css/main.css" />
            <link rel="stylesheet" type="text/css" href="<?php echo Yii::app()-
            >request->baseUrl; ?>/css/form.css" />
            <title>
            <?php echo CHtml::encode($this->pageTitle); ?>
            </title>
        </head>
        <body>
        <div class="container" id="page">
            <div id="header">
                <div id="logo">
                    <a href="http://www.pucp.edu.pe/"></a>
                </div>
            </div>
        </div>
    
```

```

        &nbsp;
        <b> <?php echo CHtml::encode(Yii::app()->name); ?> </b>
        &nbsp; &nbsp; &nbsp; &nbsp;
        <a href="http://www.cela-project.net/"></a>
    </div>
</div><!-- header -->
<div id="mainmenu">
<?php $this->widget('zii.widgets.CMenu',array(
    'items'=>array(array('label'=>'Principal',
'url'=>array('/site/index')),array('label'=>'Componentes',
'url'=>array('/site/components')),array('label'=>'Historial',
'url'=>array('/site/graphics')),array('label'=>'Tiempo real',
'url'=>array('/site/realtime')),array('label'=>'Contacto',
'url'=>array('/site/contact')),array('label'=>'Perfil','url'=>array('/site/
usuarios')),array('label'=>'Ingresar', 'url'=>array('/site/login'),
'visible'=>Yii::app()->user->isGuest),
        array('label'=>'Salir ('.Yii::app()->user-
>name.)','url'=>array('/site/logout'),'visible'=>!Yii::app()->user-
>isGuest)
    ),
)); ?>
</div><!-- mainmenu -->
<?php if(isset($this->breadcrumbs)):?>
    <?php $this->widget('zii.widgets.CBreadcrumbs', array(
        'links'=>$this->breadcrumbs,
    )); ?><!-- breadcrumbs -->
<?php endif?>
<?php echo $content; ?>
<div class="clear"></div>
<div id="footer">
    Copyright &copy; <?php echo date('Y'); ?> by <?php echo
CHtml::link('GTR-PUCP',"http://gtr.telecom.pucp.edu.pe/"); ?><br/>
    All Rights Reserved.<br/>
    <?php echo ' ' //Yii::powered(); ?>
</div><!-- footer -->
</div><!-- page -->
</body>
</html>

```

5.5. Sensor

5.5.1. View.php

```

<?php
$this->breadcrumbs=array(
    'Parametros'=>array('index'),
    $model->idparametro,
);$this->menu=array(array('label'=>'Listar Parametro',
'url'=>array('index')),array('label'=>'Crear Parametro',
'url'=>array('create')),array('label'=>'Actualizar Parametro',
'url'=>array('update', 'id'=>$model->idparametro)),array('label'=>'Borrar
Parametro', 'url'=>'#',
linkOptions'=>array('submit'=>array('delete','id'=>$model-
>idparametro),'confirm'=>'Are you sure you want to delete this item?')),
    array('label'=>'Administrar Parametro',
'url'=>array('admin')),);?>
<h1>Ver Parametro #<?php echo $model->idparametro; ?></h1>
<?php $this->widget('zii.widgets.CDetailView', array(
    'data'=>$model,

```



```

$this->breadcrumbs=array(
    'Usuarios'=>array('index'),
    $model->idusuario=>array('view','id'=>$model->idusuario),
    'Update',);
$this->menu=array(
    array('label'=>'List Usuarios', 'url'=>array('index')),
    array('label'=>'Create Usuarios', 'url'=>array('create')),
    array('label'=>'View Usuarios', 'url'=>array('view','id'=>$model->idusuario)),array('label'=>'Manage Usuarios', 'url'=>array('admin')),
);?>
<h1>Actualizar información de <?php echo $model->nombres; ?></h1>
<?php echo $this->renderPartial('_form', array('model'=>$model)); ?>

```

5.7.2. View.php

```

<?php
$this->breadcrumbs=array(
    'Usuarios'=>array('index'),
    $model->idusuario,);
$this->menu=array(
    array('label'=>'Listar usuarios', 'url'=>array('index')),
    array('label'=>'Crear usuarios', 'url'=>array('create')),
    array('label'=>'Actualizar usuarios', 'url'=>array('update',
'id'=>$model->idusuario)),
    array('label'=>'Borrar Usuarios', 'url'=>'#',
'linkOptions'=>array('submit'=>array('delete','id'=>$model->idusuario),'confirm'=>'Are you sure you want to delete this item?')),
    array('label'=>'Administrar usuarios', 'url'=>array('admin')),
);
?>
<h1> Usuario <?php echo $model->nombres; ?></h1>
<?php $this->widget('zii.widgets.CDetailView', array(
    'data'=>$model,
    'attributes'=>array(
        'nombres',
        'apellidos',
        'correo',
        'institucion',
        'motivo',
        'privilegio',),),);
?>

```