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| 252233-FITOSMART: PLATAFORMA TECNOLÓGICA DE FITOMONITORIZACIÓN DE CULTIVO HIDROPÓNICO UTILIZANDO CÓMPUTO SENSIBLE AL CONTEXTO Y TÉCNICAS DE INTELIGENCIA ARTIFICIAL  (Tercera Etapa) | | Programa de Estímulos a la Innovación  2018 |
| **CÓDIGO FUENTE**  **SISTEMA PARA EL DISPOSITIVO DE CONTROL** |  | |

**Código Fuente**

**APP**

apply plugin: 'com.android.application'

apply plugin: 'kotlin-android'

android {

compileSdkVersion 27

defaultConfig {

applicationId "com.fitapp.kubeet.smartplan"

minSdkVersion 21

targetSdkVersion 27

versionCode 1

versionName "1.0"

testInstrumentationRunner "android.support.test.runner.AndroidJUnitRunner"

}

buildTypes {

release {

minifyEnabled false

proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'

}

}

}

dependencies {

implementation 'com.squareup.picasso:picasso:2.71828'

implementation 'com.github.chrisbanes:PhotoView:2.1.4'

implementation 'com.android.support:cardview-v7:27.1.1'

implementation 'com.google.http-client:google-http-client-android:1.23.0'

implementation 'com.google.api-client:google-api-client:1.23.0'

//implementation 'com.google.api-client:google-api-client:1.24.1'

implementation 'com.google.code.gson:gson:2.8.2'

implementation 'com.github.snowdream.android:smartimageview:0.0.2'

implementation 'com.google.firebase:firebase-database:16.0.1'

implementation 'com.google.firebase:firebase-core:16.0.0'

implementation 'com.loopj.android:android-async-http:1.4.9'

implementation fileTree(dir: 'libs', include: ['\*.jar'])

implementation "org.jetbrains.kotlin:kotlin-stdlib-jre7:$kotlin\_version"

implementation 'com.android.support:appcompat-v7:27.1.1'

implementation 'com.android.support:support-v4:27.1.1'

implementation 'com.android.support:design:27.1.1'

implementation 'com.android.support.constraint:constraint-layout:1.1.2'

implementation 'com.android.support:recyclerview-v7:27.1.1'

testImplementation 'junit:junit:4.12'

androidTestImplementation 'com.android.support.test:runner:1.0.2'

androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'

}

apply plugin: 'com.google.gms.google-services'

**MainActivity.java**

ackage com.fitapp.kubeet.smartplan;

import android.app.FragmentTransaction;

import android.net.Uri;

import android.os.Bundle;

import android.support.v4.app.Fragment;

import android.support.design.widget.NavigationView;

import android.support.v4.view.GravityCompat;

import android.support.v4.widget.DrawerLayout;

import android.support.v7.app.ActionBarDrawerToggle;

import android.support.v7.app.AppCompatActivity;

import android.support.v7.widget.Toolbar;

import android.view.Menu;

import android.view.MenuItem;

public class MainActivity extends AppCompatActivity

implements NavigationView.OnNavigationItemSelectedListener,

ListFragment.OnFragmentInteractionListener,inicioFragment.OnFragmentInteractionListener,

OpcionesFragment.OnFragmentInteractionListener

{

boolean activo =false;

Fragment myFragment;

listaFragmentos lf = new listaFragmentos();

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Toolbar toolbar = (Toolbar) findViewById(R.id.toolbar);

toolbar.setTitle("Smartplan");

setSupportActionBar(toolbar);

DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer\_layout);

ActionBarDrawerToggle toggle = new ActionBarDrawerToggle(

this, drawer, toolbar, R.string.navigation\_drawer\_open, R.string.navigation\_drawer\_close);

drawer.addDrawerListener(toggle);

toggle.syncState();

if(activo == false ){

myFragment = new OpcionesFragment();

getSupportFragmentManager().beginTransaction().add(R.id.content\_main,myFragment).commit();

}

NavigationView navigationView = (NavigationView) findViewById(R.id.nav\_view);

navigationView.setNavigationItemSelectedListener(this);

}

@Override

public void onBackPressed() {

DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer\_layout);

if (drawer.isDrawerOpen(GravityCompat.START)) {

drawer.closeDrawer(GravityCompat.START);

} else {

super.onBackPressed();

}

}

@Override

public boolean onCreateOptionsMenu(Menu menu) {

// Inflate the menu; this adds items to the action bar if it is present.

getMenuInflater().inflate(R.menu.main, menu);

return true;

}

@SuppressWarnings("StatementWithEmptyBody")

@Override

public boolean onNavigationItemSelected(MenuItem item) {

// Handle navigation view item clicks here.

int id = item.getItemId();

if (id == R.id.nav\_camera) {

lf.Fragmento = lf.Opcion;

activo = true;

myFragment = new OpcionesFragment();

if(activo == true){

for (Fragment fragment:getSupportFragmentManager().getFragments()) {

getSupportFragmentManager().beginTransaction().remove(fragment).commit();

}

}

} else if (id == R.id.nav\_gallery) {

lf.Fragmento = lf.fitosmar;

activo = true;

myFragment = new inicioFragment();

}

if(activo == true ){

getSupportFragmentManager().beginTransaction().replace(R.id.content\_main,myFragment).commit();

}

DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer\_layout);

drawer.closeDrawer(GravityCompat.START);

return true;

}

@Override

public void onFragmentInteraction(Uri uri) {

}

}

**Datos.java**

package com.fitapp.kubeet.smartplan;

public class Datos {

private String Nivel\_1;

private String Nivel\_2;

private String Nivel\_3;

private String SL;

private int Humedad;

public Datos() {

}

public String getNivel\_1() {

return Nivel\_1;

}

public void setNivel\_1(String nivel\_1) {

Nivel\_1 = nivel\_1;

}

public String getNivel\_2() {

return Nivel\_2;

}

public void setNivel\_2(String nivel\_2) {

Nivel\_2 = nivel\_2;

}

public String getNivel\_3() {

return Nivel\_3;

}

public void setNivel\_3(String nivel\_3) {

Nivel\_3 = nivel\_3;

}

public String getSL() {

return SL;

}

public void setSL(String SL) {

this.SL = SL;

}

public int getHumedad() {

return Humedad;

}

public void setHumedad(int humedad) {

Humedad = humedad;

}

}

**ListFragment.java**

package com.fitapp.kubeet.smartplan;

import android.app.ProgressDialog;

import android.content.Context;

import android.content.Intent;

import android.graphics.Rect;

import android.net.Uri;

import android.os.AsyncTask;

import android.os.Bundle;

import android.support.v4.app.Fragment;

import android.support.v4.app.FragmentManager;

import android.util.Log;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.AdapterView;

import android.widget.BaseAdapter;

import android.widget.Button;

import android.widget.ListAdapter;

import android.widget.ListView;

import android.widget.Switch;

import android.widget.TextView;

import android.widget.Toast;

import com.github.snowdream.android.widget.SmartImageView;

import com.google.firebase.database.DatabaseReference;

import com.loopj.android.http.AsyncHttpClient;

import com.loopj.android.http.AsyncHttpResponseHandler;

import org.json.JSONArray;

import org.json.JSONException;

import java.net.URI;

import java.net.URL;

import java.util.ArrayList;

import java.util.Objects;

import java.util.concurrent.Executor;

import cz.msebera.android.httpclient.Header;

public class ListFragment extends Fragment implements fitosmarInfoFragment.OnFragmentInteractionListener{

private static final String ARG\_PARAM1 = "param1";

private static final String ARG\_PARAM2 = "param2";

private String mParam1;

private String mParam2;

View vista;

private ListView list;

ArrayList id\_planta = new ArrayList();

ArrayList fecha = new ArrayList();

ArrayList urlImageLat = new ArrayList();

ArrayList values = new ArrayList();

ArrayList urlImageSup = new ArrayList();

ArrayList code\_device = new ArrayList();

ArrayList tem = new ArrayList();

String recibido="";

private OnFragmentInteractionListener mListener;

public ListFragment() {

}

public static ListFragment newInstance(String param1, String param2) {

ListFragment fragment = new ListFragment();

Bundle args = new Bundle();

args.putString(ARG\_PARAM1, param1);

args.putString(ARG\_PARAM2, param2);

fragment.setArguments(args);

return fragment;

}

@Override

public void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

if (getArguments() != null) {

mParam1 = getArguments().getString(ARG\_PARAM1);

mParam2 = getArguments().getString(ARG\_PARAM2);

}

}

@Override

public View onCreateView(LayoutInflater inflater, ViewGroup container,

Bundle savedInstanceState) {

// return inflater.inflate(R.layout.fragment\_list, container, false);

vista = inflater.inflate(R.layout.fragment\_list, container, false);

// boton = vista.findViewById(R.id.obtener);

list = vista.findViewById(R.id.lvFotos);

recibido = (String) getArguments().get("numero");

// Toast.makeText(getContext(),""+recibido,Toast.LENGTH\_SHORT).show();

obtenerfi();

list.setOnItemClickListener(new AdapterView.OnItemClickListener() {

@Override

public void onItemClick(AdapterView<?> parent, View view, int position, long id) {

Intent intent = new Intent(getContext(),fitosmart.class);

intent.putExtra("position",position);

intent.putExtra("device",recibido);

// Toast.makeText(getContext()," "+recibido,Toast.LENGTH\_SHORT).show();

startActivity(intent);

}

});

return vista;

}

private void obtenerfi() {

id\_planta.clear();

fecha.clear();

urlImageLat.clear();

values.clear();

urlImageSup.clear();

code\_device.clear();

//tem.clear();

final ProgressDialog progressDialog = new ProgressDialog(getContext());

progressDialog.setMessage("cargando datos...");

progressDialog.show();

AsyncHttpClient httpClient = new AsyncHttpClient();

httpClient.get("http://fitotron-api.appspot.com/getSensado", new AsyncHttpResponseHandler() {

@Override

public void onSuccess(int statusCode, Header[] headers, byte[] responseBody) {

if(statusCode == 200){

progressDialog.dismiss();

try {

JSONArray jsonArray = new JSONArray(new String(responseBody));

for(int i=0;i<jsonArray.length();i++){

id\_planta.add(jsonArray.getJSONObject(i).getString("id\_planta"));

fecha.add(jsonArray.getJSONObject(i).getString("fecha"));

urlImageLat.add(jsonArray.getJSONObject(i).getString("urlImageLat"));

values.add(jsonArray.getJSONObject(i).getString("values"));

urlImageSup.add(jsonArray.getJSONObject(i).getString("urlImageSup"));

code\_device.add(jsonArray.getJSONObject(i).getString("code\_device"));

}

list.setAdapter(new ImagenAdapter(getContext()));

}catch(JSONException e){

e.printStackTrace();

}

}

}

@Override

public void onFailure(int statusCode, Header[] headers, byte[] responseBody, Throwable error) {

}

});

}

public void onButtonPressed(Uri uri) {

if (mListener != null) {

mListener.onFragmentInteraction(uri);

}

}

@Override

public void onAttach(Context context) {

super.onAttach(context);

if (context instanceof OnFragmentInteractionListener) {

mListener = (OnFragmentInteractionListener) context;

} else {

throw new RuntimeException(context.toString()

+ " must implement OnFragmentInteractionListener");

}

}

@Override

public void onDetach() {

super.onDetach();

mListener = null;

}

@Override

public void onFragmentInteraction(Uri uri) {

}

public interface OnFragmentInteractionListener {

void onFragmentInteraction(Uri uri);

}

private class ImagenAdapter extends BaseAdapter {

Context context;

LayoutInflater layoutInflater;

SmartImageView smartImageViewLat;

SmartImageView smartImageViewSup;

TextView id\_plantas;

TextView fechas;

TextView valuess;

TextView tem2;

TextView code\_devices;

public ImagenAdapter(Context applicationContext) {

this.context = applicationContext;

layoutInflater=(LayoutInflater)context.getSystemService(Context.LAYOUT\_INFLATER\_SERVICE);

}

@Override

public int getCount() {

return urlImageLat.size();

}

@Override

public Object getItem(int position) {

return position;

}

@Override

public long getItemId(int position) {

return position;

}

@Override

public View getView(int position, View convertView, ViewGroup parent) {

ViewGroup viewGroup = (ViewGroup)layoutInflater.inflate(R.layout.item,null);

smartImageViewLat = (SmartImageView)viewGroup.findViewById(R.id.imagen1);

smartImageViewSup = (SmartImageView)viewGroup.findViewById(R.id.imagen2);

id\_plantas = (TextView)viewGroup.findViewById(R.id.id\_planta);

fechas = (TextView)viewGroup.findViewById(R.id.fecha);

valuess = (TextView)viewGroup.findViewById(R.id.values);

code\_devices = (TextView)viewGroup.findViewById(R.id.code\_device);

String url = urlImageLat.get(position).toString();

String url2 = urlImageSup.get(position).toString();

Rect rect = new Rect(smartImageViewLat.getLeft(),smartImageViewLat.getTop(),smartImageViewLat.getRight(),smartImageViewLat.getBottom());

Rect rect2 = new Rect(smartImageViewSup.getLeft(),smartImageViewSup.getTop(),smartImageViewSup.getRight(),smartImageViewSup.getBottom());

//String devices = code\_device.get(position).toString();

String num="";

if(recibido.equals("0")){

num = "2017";

}

if(recibido.equals("1")){

num = "96";

}

if(recibido.equals("2")){

num = "";

}

if(code\_device.get(position).toString().equals(num) && !code\_device.isEmpty() ){

//Toast.makeText(getContext(),""+num,Toast.LENGTH\_SHORT).show();

smartImageViewLat.setImageUrl(url,rect);

smartImageViewSup.setImageUrl(url2,rect2);

id\_plantas.setText(id\_planta.get(position).toString());

fechas.setText(fecha.get(position).toString());

//valuess.setText(values.get(position).toString());

String div = values.get(position).toString();

String[] d = div.split("[{[\"\"\\|\\\\][2,]['']}]");

// otra opcion [{[[""]]}]

String cadena="";

for(String rt : d){

cadena += rt+"\t";

}

valuess.setText(cadena);

code\_devices.setText(code\_device.get(position).toString());

}else{

viewGroup.removeAllViews();

}

return viewGroup;

}

}

}

**fitosmarInfoFragment.java**

package com.fitapp.kubeet.smartplan;

import android.app.ProgressDialog;

import android.content.Context;

import android.net.Uri;

import android.os.Bundle;

import android.support.v4.app.Fragment;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.TextView;

import com.github.chrisbanes.photoview.PhotoView;

import com.loopj.android.http.AsyncHttpClient;

import com.loopj.android.http.AsyncHttpResponseHandler;

import com.squareup.picasso.Picasso;

import org.json.JSONArray;

import org.json.JSONException;

import cz.msebera.android.httpclient.Header;

import static android.content.Intent.getIntent;

public class fitosmarInfoFragment extends Fragment {

private static final String ARG\_PARAM1 = "param1";

private static final String ARG\_PARAM2 = "param2";

private String mParam1;

private String mParam2;

View vista;

private OnFragmentInteractionListener mListener;

public fitosmarInfoFragment() {

}

public static fitosmarInfoFragment newInstance(String param1, String param2) {

fitosmarInfoFragment fragment = new fitosmarInfoFragment();

Bundle args = new Bundle();

args.putString(ARG\_PARAM1, param1);

args.putString(ARG\_PARAM2, param2);

fragment.setArguments(args);

return fragment;

}

@Override

public void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

if (getArguments() != null) {

mParam1 = getArguments().getString(ARG\_PARAM1);

mParam2 = getArguments().getString(ARG\_PARAM2);

}

}

@Override

public View onCreateView(LayoutInflater inflater, ViewGroup container,

Bundle savedInstanceState) {

// Inflate the layout for this fragment

//return inflater.inflate(R.layout.fragment\_fitosmar\_info, container, false);

vista = inflater.inflate(R.layout.fragment\_fitosmar\_info, container, false);

return vista;

}

public void onButtonPressed(Uri uri) {

if (mListener != null) {

mListener.onFragmentInteraction(uri);

}

}

@Override

public void onAttach(Context context) {

super.onAttach(context);

if (context instanceof OnFragmentInteractionListener) {

mListener = (OnFragmentInteractionListener) context;

} else {

throw new RuntimeException(context.toString()

+ " must implement OnFragmentInteractionListener");

}

}

@Override

public void onDetach() {

super.onDetach();

mListener = null;

}

public interface OnFragmentInteractionListener {

void onFragmentInteraction(Uri uri);

}

}

**fitosmart.java**

package com.fitapp.kubeet.smartplan;

import android.app.ProgressDialog;

import android.content.Intent;

import android.graphics.Rect;

import android.net.Uri;

import android.support.v7.app.AppCompatActivity;

import android.os.Bundle;

import android.support.v7.widget.Toolbar;

import android.util.Log;

import android.view.MenuItem;

import android.view.MotionEvent;

import android.view.ScaleGestureDetector;

import android.view.View;

import android.widget.TextView;

import android.widget.Toast;

import com.github.chrisbanes.photoview.PhotoView;

import com.github.snowdream.android.widget.SmartImageView;

import com.loopj.android.http.AsyncHttpClient;

import com.loopj.android.http.AsyncHttpResponseHandler;

import com.squareup.picasso.Picasso;

import org.json.JSONArray;

import org.json.JSONException;

import java.net.URL;

import java.util.ArrayList;

import cz.msebera.android.httpclient.Header;

public class fitosmart extends AppCompatActivity {

TextView res,fechas;

//SmartImageView img;

PhotoView photoLat;

PhotoView photoSup;

private Toolbar toolbar;

int dato;

String mensaje;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_fitosmart);

toolbar = (Toolbar) findViewById(R.id.toolbar2);

setSupportActionBar(toolbar);

getSupportActionBar().setDisplayHomeAsUpEnabled(true);

Bundle respuesta = this.getIntent().getExtras();

res = (TextView) findViewById(R.id.respuesta);

fechas = (TextView) findViewById(R.id.fecha11);

// img = findViewById(R.id.imagen11);

photoLat = findViewById(R.id.photo\_view);

photoSup = findViewById(R.id.photo\_Sup);

photoLat.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

photoLat.setMaximumScale(5f);

}

});

photoSup.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

photoSup.setMaximumScale(5f);

}

});

if(respuesta != null){

dato = respuesta.getInt("position");

mensaje = respuesta.getString("device");

//Toast.makeText(this,""+dato,Toast.LENGTH\_SHORT).show();

String numero = Integer.toString(dato);

// Toast.makeText(getApplicationContext(),""+numero+" "+mensaje,Toast.LENGTH\_SHORT).show();

// res.setText(numero);

obtenerfi();

}

}

public boolean onOptionsItemSelected(MenuItem item) {

switch (item.getItemId()) {

case android.R.id.home:

onBackPressed();

break;

} return false;

};

public void obtenerfi() {

final ProgressDialog progressDialog = new ProgressDialog(this);

progressDialog.setMessage("cargando datos...");

progressDialog.show();

AsyncHttpClient httpClient = new AsyncHttpClient();

httpClient.get("http://fitotron-api.appspot.com/getSensado", new AsyncHttpResponseHandler() {

@Override

public void onSuccess(int statusCode, Header[] headers, byte[] responseBody) {

if(statusCode == 200){

progressDialog.dismiss();

try {

JSONArray jsonArray = new JSONArray(new String(responseBody));

// for(int i=0;i<jsonArray.length();i++){

String p = jsonArray.getJSONObject(dato).getString("id\_planta");

String fecha = jsonArray.getJSONObject(dato).getString("fecha");

String urlImageLat = jsonArray.getJSONObject(dato).getString("urlImageLat");

String value = jsonArray.getJSONObject(dato).getString("values");

String urlImageSup = jsonArray.getJSONObject(dato).getString("urlImageSup");

String code\_device = jsonArray.getJSONObject(dato).getString("code\_device");

//Rect rect = new Rect(img.getLeft(),img.getTop(),img.getRight(),img.getBottom());

String numero ="";

if(mensaje.equals("0")){

numero = "2017";

}if(mensaje.equals("1")){

numero = "96";

}

if(code\_device.equals(numero)){

res.setText(p);

fechas.setText(fecha);

String imagLt = jsonArray.getJSONObject(dato).getString("urlImageLat");

Picasso.get().load(imagLt).into(photoLat);

Picasso.get().load(urlImageSup).into(photoSup);

}

//img.setImageUrl(jsonArray.getJSONObject(dato).getString("urlImageLat"),rect);

// Uri uri = Uri.parse(jsonArray.getJSONObject(dato).getString("urlImageLat"));

// photoView.setImageURI(uri);

//}

//list.setAdapter(new ListFragment.ImagenAdapter(getContext()));

}catch(JSONException e){

e.printStackTrace();

}

}

}

@Override

public void onFailure(int statusCode, Header[] headers, byte[] responseBody, Throwable error) {

}

});

}

}

**fitotron.java**

package com.fitapp.kubeet.smartplan;

import android.widget.ImageView;

import java.util.ArrayList;

public class fitotron {

private int Imagen;

private int Humedad;

private int Termometro;

private int luminosidad;

private String termometroTexto;

private String humedadTexto;

private String luminosidadTexto;

private String PH;

private String CO2;

private String TL;

private String Header;

private int SW;

public fitotron() {

}

public fitotron(int imagen, int humedad, int termometro, int luminosidad, String termometroTexto, String humedadTexto, String luminosidadTexto, String PH, String CO2, String TL, String header, int SW) {

Imagen = imagen;

Humedad = humedad;

Termometro = termometro;

this.luminosidad = luminosidad;

this.termometroTexto = termometroTexto;

this.humedadTexto = humedadTexto;

this.luminosidadTexto = luminosidadTexto;

this.PH = PH;

this.CO2 = CO2;

this.TL = TL;

Header = header;

this.SW = SW;

}

public int getImagen() {

return Imagen;

}

public void setImagen(int imagen) {

Imagen = imagen;

}

public int getHumedad() {

return Humedad;

}

public void setHumedad(int humedad) {

Humedad = humedad;

}

public int getTermometro() {

return Termometro;

}

public void setTermometro(int termometro) {

Termometro = termometro;

}

public int getLuminosidad() {

return luminosidad;

}

public void setLuminosidad(int luminosidad) {

this.luminosidad = luminosidad;

}

public String getTermometroTexto() {

return termometroTexto;

}

public void setTermometroTexto(String termometroTexto) {

this.termometroTexto = termometroTexto;

}

public String getHumedadTexto() {

return humedadTexto;

}

public void setHumedadTexto(String humedadTexto) {

this.humedadTexto = humedadTexto;

}

public String getLuminosidadTexto() {

return luminosidadTexto;

}

public void setLuminosidadTexto(String luminosidadTexto) {

this.luminosidadTexto = luminosidadTexto;

}

public String getPH() {

return PH;

}

public void setPH(String PH) {

this.PH = PH;

}

public String getCO2() {

return CO2;

}

public void setCO2(String CO2) {

this.CO2 = CO2;

}

public String getTL() {

return TL;

}

public void setTL(String TL) {

this.TL = TL;

}

public String getHeader() {

return Header;

}

public void setHeader(String header) {

Header = header;

}

public int getSW() {

return SW;

}

public void setSW(int SW) {

this.SW = SW;

}

}