uc3m | Universidad **Carlos III** de Madrid

Grupo de investigación:
Computer Security Lab

Mobile Devices Security

Bachelor Degree in Informatics Engineering

2019

SharedPreferences

▸ Preferences – agile way to save simple application data

▸ Set of key/value pair that we want to keep after the application is closed. Ex.: language, sound settings of the application, fonts, colors, etc.

▸ The data that allows us to save are primitives and we can invoke using the following methods:

  ▸ putInt(), putBoolean(), putFloat(), putLong(), putString(), putStringSet() de la forma (String key, tipo value)

▸ The application preferences are save as data in a file xml;

  ▸ /data/data/com.your.package/shared_prefs/com.your.package_preferences.xml

http://developer.android.com/reference/android/content/SharedPreferences.html

SharedPreferences

► To store data we will do as follow:

1. Instantiate an object of type SharedPreferences with the following arguments: file name – meaning the file that will hold the data and access mode – the mode to access to the file

2. Edit the object preferences of 1. with the help of a Editor object

3. Add values with the methods put(…) via the Editor object in order to save them

4. Update the values using the commit() method

► Access Mode for the file holding the data

► MODE_PRIVATE - file can only be accessed using calling application

► MODE_WORLD_READABLE - other application to read the preferences

► MODE_WORLD_WRITEABLE- other application to write the preferences

► MODE_MULTI_PROCESS - checks for modification of preferences even if the sharedpreference instance has already been loaded (deprecated since API 23)

uc3m | Universidad **Carlos III** de Madrid
Grupo de investigación:
Computer Security Lab

SharedPreferences

```
SharedPreferences prefs = getSharedPreferences("Name", MODE_PRIVATE);
Editor mEditor = prefs.edit();
mEditor.putString("username", username);
mEditor.putString("password", password);
mEditor.commit();
```

```
SharedPreferences prefs = getSharedPreferences("Name", MODE_PRIVATE);
String username = prefs.getString("username", "");
String password = prefs.getString("password", "");
```

username	password
josef	uc3m_

<- field

<- value

SP Example

1. Create the SPEjemplo project

2. Get the Java class and layout sp_activity.xml

```java
public class SPActivity extends Activity {

    SharedPreferences sprefs;

    @Override
    protected void onCreate(Bundle objShaPrefs) {
    super.onCreate(objShaPrefs);
    setContentView(R.layout.sp_activity);

    } /*** Fin del metodo protected void onCreate(Bundle objShaPrefs) ***/


} /*** Fin de la public class SPActivity extends Activity ***/
```

SP Example

3. Creating the layout sp_activity.xml

```xml
<TableRow
    android:id="@+id/tRow1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" >

    <TextView
        android:id="@+id/tvNombre"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/nombre"
        android:textAppearance="?android:attr/textAppearanceMedium"
    <EditText
        android:id="@+id/etNombre"
        android:hint="@string/LetrasHintNombre"
        android:maxLength="10" >
    </EditText>
</TableRow>

<TableRow
    android:id="@+id/tRow2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" >

    <TextView
        android:id="@+id/tvContrasena"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/contrasena"
        android:textAppearance="?android:attr/textAppearanceMedium" />
```

```xml
    <EditText
        android:id="@+id/etContrasena"
        android:inputType="textPassword|number"
        android:password="true"
        android:hint="@string/LetrasContrasena"
        android:maxLength="4" >
    </EditText>
</TableRow>

<TableRow
    android:id="@+id/tRow3"
    android:layout_gravity="center" >
    <Button
        android:id="@+id/bSalbar"
        android:layout_gravity="center_vertical"
        android:text="@string/bLetrasSlavar"
        android:layout_span="2"
        android:onClick="run"/>
</TableRow>
```

SP Example

4. Define the variables: file name and field

5. Define the preferences

```java
public class SPActivity extends Activity {

TextView nombre ;
TextView contraseña;
public static final String MisPreferencias = "MyPrefs" ;
public static final String Nombre = "key_Nombre";
public static final String Contraseña = "Key_passw";
SharedPreferences sprefs;

@Override
protected void onCreate(Bundle objShaPrefs) {
super.onCreate(objShaPrefs);
setContentView(R.layout.sp_activity);

nombre = (TextView) findViewById(R.id.etNombre);
contraseña = (TextView) findViewById(R.id.etContrasena);

sprefs = getSharedPreferences(MisPreferencias, Context.MODE_PRIVATE);

@Override
protected void onCreate(Bundle objShaPrefs) {
super.onCreate(objShaPrefs);
setContentView(R.layout.sp_activity);

  } /*** Fin del metodo protected void onCreate(Bundle objShaPrefs) ***/

} /*** Fin de la public class SPActivity extends Activity ***/
```

SP Example

```java
public class SPActivity extends Activity {
 TextView nombre;
 TextView contraseña;
 public static final String MisPreferencias = "MyPrefs" ;
 public static final String Nombre = "key_Nombre";
 public static final String Contraseña = "Key_passw";
 SharedPreferences sprefs;
 @Override
 protected void onCreate(Bundle objShaPrefs) {
 super.onCreate(objShaPrefs);
 setContentView(R.layout.sp_activity);
 nombre = (TextView) findViewById(R.id.etNombre);
 contraseña = (TextView) findViewById(R.id.etContrasena);
 sprefs = getSharedPreferences(MisPreferencias. Context.MODE_PRIVATE);
 if (sprefs.contains(Nombre))
     nombre.setText(sprefs.getString(Nombre, ""));
 if (sprefs.contains(Contraseña))
     contraseña.setText(sprefs.getString(Contraseña, ""));
} /*** Fin del metodo protected void onCreate(Bundle objShaPrefs) ***/


   public void run(View view){
      String n  = nombre.getText().toString();
      String cs  = contraseña.getText().toString();
      Editor editor = sprefs.edit();
      editor.putString(Nombre, n);
      editor.putString(Contraseña, cs);
      editor.commit();
      Intent unInt = new Intent(SPActivity.this, SegundaActividad.class);
      startActivity(unInt);
   }  /*** Fin del metodo public void run(View view) ***/
}  /*** Fin de la public class SPActivity extends Activity ***/
```
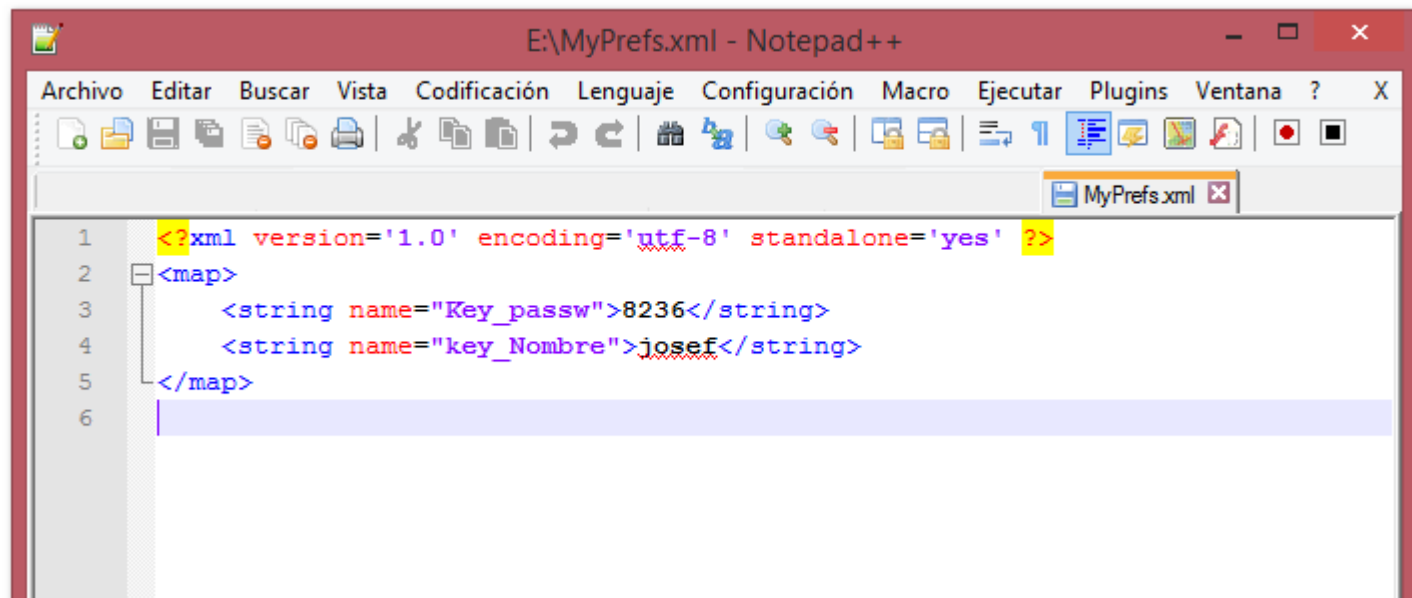
6. Check if they are saved preferences to load

7. By mean of the button we load the new preferences

8. Go the next activity

SP Example

9. Verify the file: MyPrefs
10. Verify the files: Key_passw y key_Nombre
11. Verify the values: 8236 y josef

SP Example

Layout : act_segunda.xml

```
…… … … … … … … .

<TableLayout
      android:id="@+id/tlTable"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:gravity="center_horizontal" >

   <TableRow
      android:id="@+id/tr0"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:minHeight="20dp" >
   </TableRow>

   <TableRow
      android:id="@+id/tr1"
      android:layout_height="wrap_content"
      android:layout_width="fill_parent"
      android:gravity="center_horizontal"
      android:layout_marginTop="20dip" >
   <TextView
      android:id="@+id/tvTitBen1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_gravity="center"
      android:text="@string/txtTitBen1"
      android:textAppearance="?android:attr/textAppearanceLarge" />

   </TableRow>
```

```
<TableRow
      android:id="@+id/tr2"
      android:layout_height="wrap_content"
      android:layout_width="match_parent"
      android:layout_marginTop="20dip" >
</TableRow>

 <TableRow
      android:id="@+id/tr3"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:gravity="fill_horizontal" >

<TextView
      android:id="@+id/tvTitBen2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_gravity="center_horizontal"
      android:layout_weight="1"
      android:gravity="center"
      android:text="@string/txtTitBen2"
      ndroid:textAppearance="?android:attr/textAppearanceLarge" />


   </TableRow>
</TableLayout>

…… … … … … … … .
```

SPEjemplo

Java class: SegundaActividad


```java
package com.SDM.spejemplo;

import android.app.Activity;
import android.os.Bundle;

public class SegundaActividad extends Activity {

@Override
protected void onCreate(Bundle obj2aAct) {
// TODO Auto-generated method stub
super.onCreate(obj2aAct);
setContentView(R.layout.act_segunda);

}   /*** Fin del metodo protected void onCreate(Bundle obj2aAct)  ***/

} /*** Fin de la public class SegundaActividad extends Activity ***/
```

uc3m | Universidad **Carlos III** de Madrid

Grupo de investigación:
Computer Security Lab

Mobile Devices Security

Bachelor Degree in Informatics Engineering

2019