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| Министерство образования Российской Федерации  Пензенский государственный университет  Кафедра «Вычислительная техника» |
| Отчет  по лабораторной работе №4  по курсу «Графические интерфейсы Android и Qt»  на тему «SharedPreferences для хранения данных» |
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**Задание**:

1 Переопределить методы жизненного цикла одной из activity для сохранения при её закрытии введенных пользовательских данных и загрузке сохраненных данных при восстановлении activity.

2 Переопределить методы жизненного цикла всех activity для сохранения при закрытии приложения общих настроек (например, языка интерфейса) и загрузке сохраненных данных при запуске приложения.

Листинг программы:

Файл Activity1.java

package com.example.lab2;  
  
import android.app.Activity;  
import android.content.Context;  
import android.content.Intent;  
import android.content.SharedPreferences;  
import android.os.Bundle;  
import android.text.TextUtils;  
import android.util.Log;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
  
public class Activity1 extends Activity {  
 public static final String APP\_PREFERENCES = "mysettings";  
 public static final int APP\_PREFERENCES\_THEME = 1;  
 int positionTheme;  
 @Override  
 protected void onStart() {  
 super.onStart();  
 Log.d("Act1Tag" , "OnStart");  
 }  
 @Override  
 protected void onResume() {  
 super.onResume();  
 Log.d("Act1Tag" , "OnResume");  
 }  
 @Override  
 protected void onPause() {  
 super.onPause();  
 Log.d("Act1Tag" , "onPause");  
 }  
 @Override  
 protected void onStop() {  
 super.onStop();  
 Log.d("Act1Tag" , "onStop");  
 }  
 @Override  
 protected void onDestroy() {  
 super.onDestroy();  
 Log.d("Act1Tag" , "onDestroy");  
 }  
 @Override  
 protected void onRestart() {  
 super.onRestart();  
 Log.d("Act1Tag" , "onRestart");  
 }  
  
 */\*\* Called when the activity is first created. \*/* @Override  
 public void onCreate(Bundle savedInstanceState) {  
 SharedPreferences sharedPrefTheme = this.getSharedPreferences(APP\_PREFERENCES, Context.MODE\_PRIVATE);  
  
 positionTheme = sharedPrefTheme.getInt("position", 1);  
 Log.*d*("Act1TagSTYLE" , String.*valueOf*(positionTheme));  
 if (positionTheme == 0){  
 setTheme(R.style.*ThemeNight\_Lab2*);  
 Log.*d*("Act1TagSTYLE" , "NIGHT\_MODE");  
 }  
 else{  
 setTheme(R.style.*ThemeLight\_Lab2*);  
 }  
  
 setContentView(R.layout.*activity\_act1*);  
 EditText personName = findViewById(R.id.*editTextTextPersonName*);  
 EditText password = findViewById(R.id.*editTextTextPassword*);  
  
 SharedPreferences sharedPref1 = this.getPreferences(Context.*MODE\_PRIVATE*);  
 SharedPreferences sharedPref2 = this.getPreferences(Context.*MODE\_PRIVATE*);  
 SharedPreferences.Editor editor1 = sharedPref1.edit();  
 SharedPreferences.Editor editor2 = sharedPref2.edit();  
 personName.setText(sharedPref1.getString("text1",""));  
 password.setText(sharedPref2.getString("text2",""));  
  
 Button btnActTwo = findViewById(R.id.*button*);  
  
  
 super.onCreate(savedInstanceState);  
 Log.*d*("Act1Tag" , "onCreate");  
 btnActTwo.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
  
 if ((TextUtils.*isEmpty*(personName.getText()))&&(TextUtils.*isEmpty*(password.getText()))){  
 return;  
 }  
 else {  
 if ((personName.getText().toString().equals("Elena"))&&(password.getText().toString().equals("1234"))) {  
  
 editor1.putString("text1", personName.getText().toString());  
 editor1.apply();  
 editor2.putString("text2", password.getText().toString());  
 editor2.apply();  
 Intent intent = new Intent(Activity1.this, Activity2.class);  
 intent.putExtra("hello", (personName.getText().toString()));  
 Log.d("Act1Tag" , "CallAct2");  
 startActivity(intent);  
 }  
 }  
 }  
 });  
  
  
 }  
  
  
  
}

Файл Activity2.java

package com.example.lab2;  
  
import android.content.Context;  
import android.content.Intent;  
import android.content.SharedPreferences;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.util.Log;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.ListView;  
  
import java.util.ArrayList;  
  
  
public class Activity2 extends AppCompatActivity {  
 public static final String *APP\_PREFERENCES* = "mysettings";  
 public static final int *APP\_PREFERENCES\_THEME* = 1;  
 int positionTheme;  
 @Override  
 protected void onStart() {  
 super.onStart();  
 Log.*d*("Act2Tag" , "OnStart");  
 }  
 @Override  
 protected void onResume() {  
 super.onResume();  
 Log.*d*("Act2Tag" , "OnResume");  
 }  
 protected void onPause() {  
 super.onPause();  
 Log.*d*("Act2Tag" , "onPause");  
 }  
 protected void onStop() {  
 super.onStop();  
 Log.*d*("Act2Tag" , "onStop");  
 }  
 protected void onDestroy() {  
 super.onDestroy();  
 Log.*d*("Act2Tag" , "onDestroy");  
 }  
 protected void onRestart() {  
 super.onRestart();  
 Log.*d*("Act2Tag" , "onRestart");  
 }  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 SharedPreferences sharedPrefTheme = this.getSharedPreferences(*APP\_PREFERENCES*, Context.*MODE\_PRIVATE*);  
 SharedPreferences.Editor editor1 = sharedPrefTheme.edit();  
 positionTheme = sharedPrefTheme.getInt("position", 1);  
 Log.*d*("Act2TagSTYLE" , String.*valueOf*(positionTheme));  
  
  
 if (positionTheme == 0){  
 setTheme(R.style.*ThemeNight\_Lab2*);  
 }  
 else{  
 setTheme(R.style.*ThemeLight\_Lab2*);  
 }  
 Log.*d*("Act2TagSTYLE" , String.*valueOf*(positionTheme));  
  
 Bundle bundle = getIntent().getExtras();  
 String user = bundle.get("hello").toString();  
  
 setContentView(R.layout.*activity\_2*);  
 ArrayList<String> StringArray = new ArrayList<String>();  
 ArrayAdapter<String> TextAdapter;  
 EditText editText = findViewById(R.id.*editTextTextPersonName2*);  
 Button button2 = findViewById(R.id.*button2*);  
 Button button3 = findViewById(R.id.*button3*);  
 Button button4 = findViewById(R.id.*button4*);  
 Button button5 = findViewById(R.id.*button5*);  
  
 ListView listView = findViewById(R.id.*textList*);  
  
 TextAdapter = new ArrayAdapter(this, android.R.layout.*simple\_list\_item\_1*, StringArray);  
 listView.setAdapter(TextAdapter);  
 StringArray.add(user);  
 super.onCreate(savedInstanceState);  
 Log.*d*("Act2TagSTYLE" , "onCreate");  
 button2.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 StringArray.add(editText.getText().toString());  
 TextAdapter.notifyDataSetChanged();  
 editText.setText("");  
 }  
 });  
 button4.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent intent = new Intent(Activity2.this, Activity1.class);  
 Log.*d*("Act2Tag" , "CallAct1");  
 startActivity(intent);  
  
 }  
 });  
 button5.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if (positionTheme == 0){  
 setTheme(R.style.*ThemeNight\_Lab2*);  
 positionTheme = 1;  
 }  
 else{  
 setTheme(R.style.*ThemeLight\_Lab2*);  
 positionTheme = 0;  
 }  
 editor1.putInt("position",positionTheme );  
 editor1.apply();  
 Log.*d*("Act2Tag" , String.*valueOf*(positionTheme));  
 recreate();  
  
 }  
 });  
 listView.setOnItemClickListener(new AdapterView.OnItemClickListener(){  
  
 @Override  
 public void onItemClick(AdapterView<?> parent, View v, int position, long id)  
 {  
 listView.setSelector(R.color.*green*);  
 // получаем нажатый элемент  
 //String user = TextAdapter.getItem(position);  
 listView.setItemChecked(position, true);  
 listView.setSelection(position);  
 button3.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
  
 listView.setSelector(android.R.color.*transparent*);  
 listView.isItemChecked(position);  
 StringArray.remove(position);  
  
 TextAdapter.notifyDataSetChanged();  
  
 }  
  
 });  
  
 }  
  
  
 });  
  
 }  
  
  
}

Файл AndroidManifest.xml

<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 package="com.example.lab2">  
  
 <application  
 android:allowBackup="true"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true">  
 <activity  
 android:name=".Activity2"  
  
 android:theme="@style/ThemeLight.Lab2"  
 android:exported="false">  
 <meta-data  
 android:name="android.app.lib\_name"  
 android:value="" />  
 </activity>  
 <activity  
 android:name=".Activity1"  
 android:theme="@style/ThemeLight.Lab2"  
 android:exported="true">  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
 </application>  
  
</manifest>

Файл themes.xml

<resources xmlns:tools="http://schemas.android.com/tools">  
 <!-- Base application theme. -->  
 <style name="ThemeLight.Lab2" parent="Theme.AppCompat">  
 <!-- Primary brand color. -->  
 <item name="colorPrimary">#FF018786</item>  
 <item name="colorPrimaryDark">#FF018786</item>  
 <item name="colorAccent">#037C70</item>  
 <item name="android:textColor">#292828</item>  
 <item name="android:colorBackground">#FFFFFF</item>  
 <item name="android:editTextStyle">@style/myEditText</item>  
 <item name="android:colorButtonNormal">#FF018786</item>  
 <!-- Customize your theme here. -->  
 </style>  
 <style name="ThemeNight.Lab2" parent="Theme.AppCompat">  
 <!-- Primary brand color. -->  
 <item name="colorPrimary">#013E3E</item>  
 <item name="colorPrimaryDark">#013E3E</item>  
 <item name="colorAccent">#037C70</item>  
 <item name="android:textColor">#E6ECEA</item>  
 <item name="android:colorBackground">#322D2D</item>  
 <item name="android:colorButtonNormal">#013E3E</item>  
 <!-- Customize your theme here. -->  
 </style>  
 <style name="myEditText" parent="@android:style/Widget.Holo.Light.EditText">  
 <item name="android:textColor">#000000</item>  
 <item name="android:backgroundTint">#737272</item>  
 <item name="android:textColorHint">#737272</item>  
 </style>  
</resources>

Файл activity\_act1.xml

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/linearLayout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <EditText  
 android:id="@+id/editTextTextPassword"  
 android:layout\_width="216dp"  
 android:layout\_height="54dp"  
 android:layout\_marginBottom="260dp"  
 android:ems="10"  
 android:inputType="textPassword"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toEndOf="@+id/textView"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextTextPersonName"  
 app:layout\_constraintVertical\_bias="0.329" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="36dp"  
 android:text="Войти"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/editTextTextPassword" />  
  
 <EditText  
 android:id="@+id/editTextTextPersonName"  
 android:layout\_width="214dp"  
 android:layout\_height="62dp"  
 android:layout\_marginTop="152dp"  
 android:ems="10"  
 android:inputType="textPersonName"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toEndOf="@+id/textView2"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 tools:ignore="SpeakableTextPresentCheck" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="79dp"  
 android:layout\_height="22dp"  
 android:layout\_marginBottom="52dp"  
 android:text="Пароль"  
 app:autoSizeMaxTextSize="100sp"  
 app:autoSizeMinTextSize="16dp"  
 app:autoSizeTextType="uniform"  
 app:layout\_constraintBottom\_toBottomOf="@+id/editTextTextPassword"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent" />  
  
 <TextView  
 android:id="@+id/textView2"  
 android:layout\_width="67dp"  
 android:layout\_height="23dp"  
 android:layout\_marginBottom="76dp"  
 android:text="Логин"  
 app:autoSizeMaxTextSize="100sp"  
 app:autoSizeMinTextSize="16dp"  
 app:autoSizeTextType="uniform"  
 app:layout\_constraintBottom\_toBottomOf="@+id/editTextTextPersonName"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.5"  
 app:layout\_constraintStart\_toStartOf="parent" />  
  
</android.support.constraint.ConstraintLayout>

Файл activity\_2.xml

<?xml version="1.0" encoding="utf-8"?>  
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".Activity2">  
  
 <EditText  
 android:id="@+id/editTextTextPersonName2"  
 android:layout\_width="351dp"  
 android:layout\_height="60dp"  
 android:layout\_marginStart="24dp"  
 android:layout\_marginTop="16dp"  
 android:ems="10"  
 android:hint="text"  
 android:inputType="textPersonName"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="152dp"  
 android:layout\_height="50dp"  
 android:layout\_marginTop="100dp"  
 android:layout\_marginEnd="128dp"  
 android:text="Добавить"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.29"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/button3"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="16dp"  
 android:layout\_marginBottom="16dp"  
 android:text="Удалить"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent" />  
  
 <ListView  
 android:id="@+id/textList"  
 android:layout\_width="348dp"  
 android:layout\_height="482dp"  
 android:layout\_marginStart="24dp"  
 android:layout\_marginTop="168dp"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"></ListView>  
  
 <Button  
 android:id="@+id/button4"  
 android:layout\_width="110dp"  
 android:layout\_height="48dp"  
 android:layout\_marginEnd="16dp"  
 android:layout\_marginBottom="16dp"  
 android:text="Назад"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent" />  
  
 <Button  
 android:id="@+id/button5"  
 android:layout\_width="154dp"  
 android:layout\_height="50dp"  
 android:layout\_marginTop="100dp"  
 android:layout\_marginEnd="36dp"  
 android:text="Смена темы"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
</android.support.constraint.ConstraintLayout>

Результат работы:

  