

Laborator 10

Crearea listelor folosind `ListView` si `ArrayAdapter`

Nume proiect **L10_list1**

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ListView
        android:id="@+id/userlist"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >
    </ListView>
</LinearLayout>
```

MainActivity.java

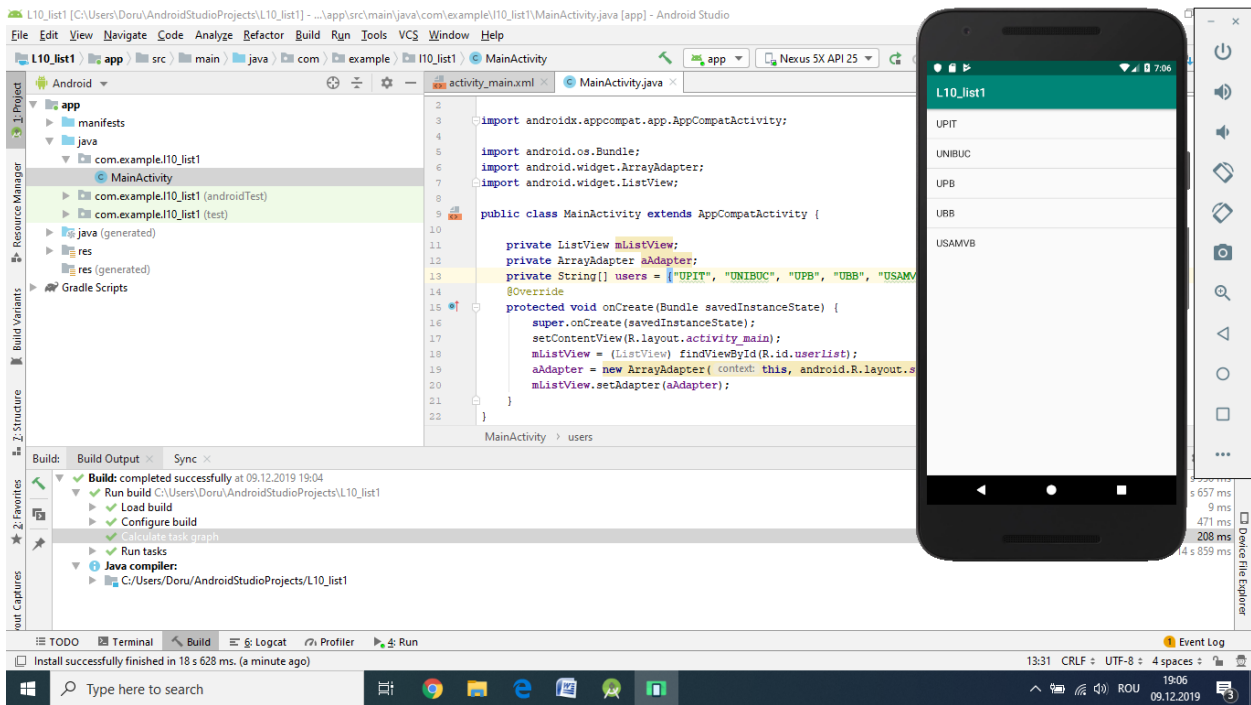
```
package com.example.l10_list1;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;

public class MainActivity extends AppCompatActivity {

    private ListView mListview;
    private ArrayAdapter aAdapter;
    private String[] users = {"UPIT", "UNIBUC", "UPB", "UBB", "USAMVB"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mListview = (ListView) findViewById(R.id.userlist);
        aAdapter = new ArrayAdapter(this,
android.R.layout.simple_list_item_1, users);
        mListview.setAdapter(aAdapter);
    }
}
```



Crearea listelor cu ListView si Custom Adapter

Pas 0. Creati un proiect cu numele **L10_list2**

Pas 1. Crearea fisierului **activity_main.xml**

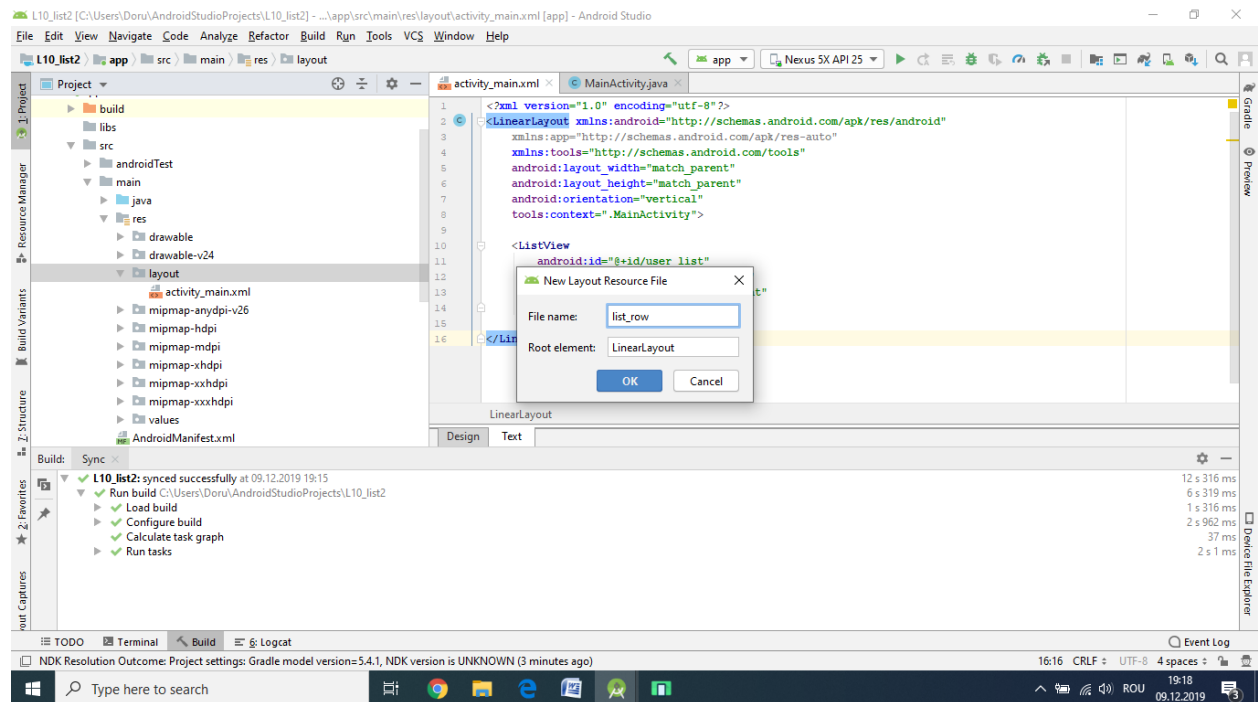
```
<?xml version="1.0" encoding="utf-8" ?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ListView
        android:id="@+id/user_list"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:dividerHeight="1dp" />

</LinearLayout>
```

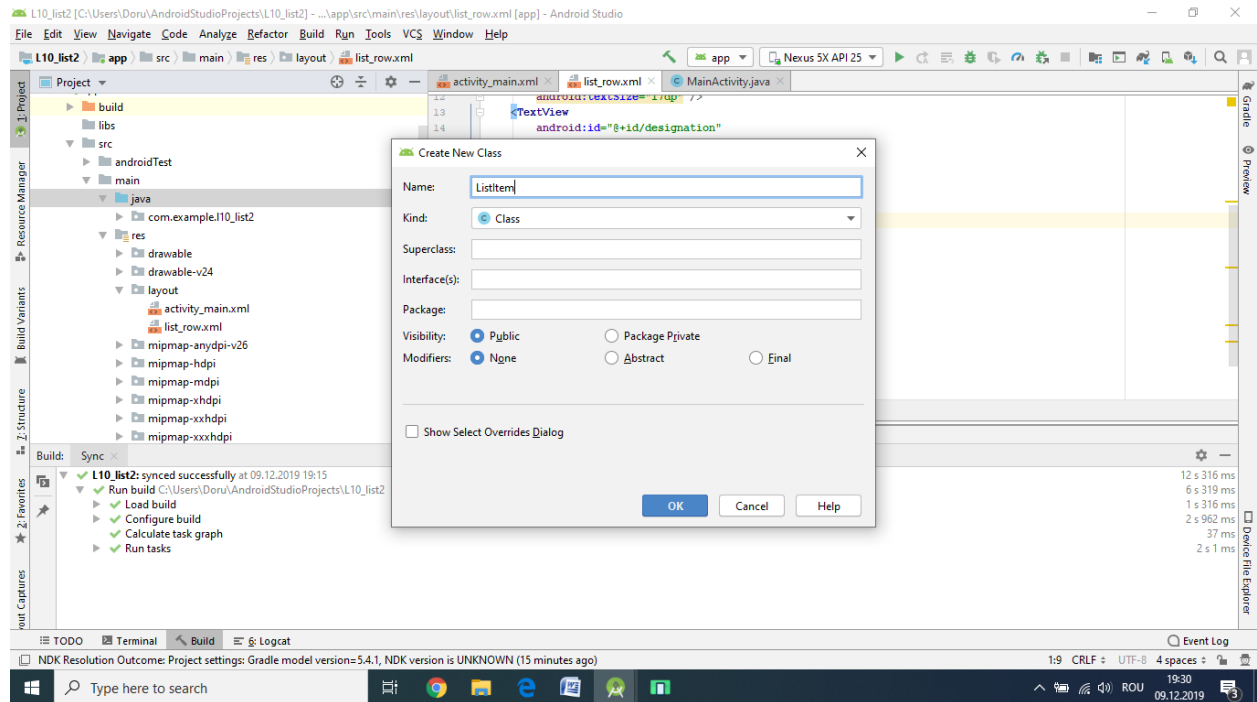
Pas 2. Crearea fisierului list_row.xml:

layouts folder → New → Layout resource file → folositi numele **list_row.xml** si **OK**



```
<?xml version="1.0" encoding="utf-8" ?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:padding="5dip" >
    <TextView
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textStyle="bold"
        android:textSize="17dp" />
    <TextView
        android:id="@+id/designation"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/name"
        android:layout_marginTop="7dp"
        android:textColor="#343434"
        android:textSize="14dp" />
    <TextView
        android:id="@+id/location"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBaseline="@+id/designation"
        android:layout_alignBottom="@+id/designation"
        android:layout_alignParentRight="true"
        android:textColor="#343434"
        android:textSize="14dp" />
</RelativeLayout>
```

Pasul 3. Crearea clasei ListItem in folder → New → Java Class → folositi numele ListItem.java si OK

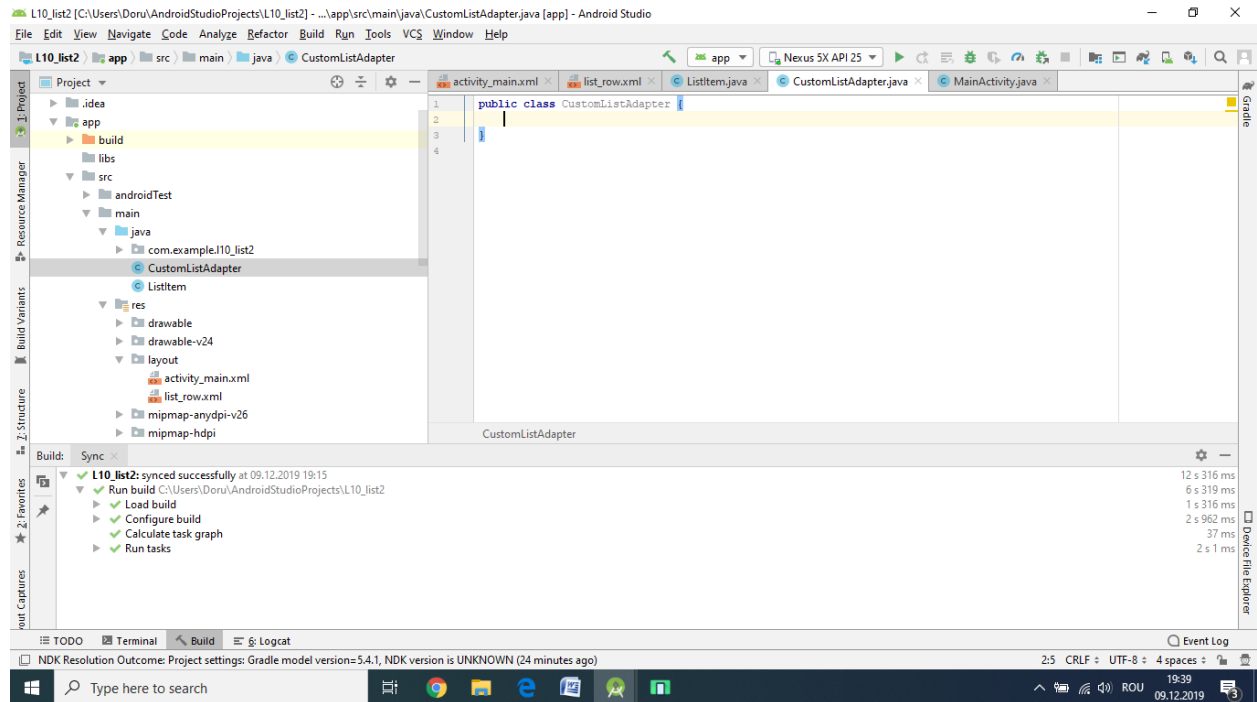


ListItem.java

```
package com.example.l10_list2;

public class ListItem {
    private String name;
    private String designation;
    private String location;
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getDesignation() {
        return designation;
    }
    public void setDesignation(String designation) {
        this.designation = designation;
    }
    public String getLocation() {
        return location;
    }
    public void setLocation(String location) {
        this.location = location;
    }
}
```

Pas 4. Crearea unui adapter in folderul java → select New → Java Class → cu numele CustomListAdapter.java si OK.



CustomListAdapter.java

```
package com.example.l10_list2;

import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.TextView;

import java.util.ArrayList;
public class CustomListAdapter extends BaseAdapter {
    private ArrayList<com.example.l10_list2.ListItem> listData;
    private LayoutInflater layoutInflater;
    public CustomListAdapter(Context aContext,
ArrayList<com.example.l10_list2.ListItem> listData) {
        this.listData = listData;
        layoutInflater = LayoutInflater.from(aContext);
    }
    @Override
    public int getCount() {
        return listData.size();
    }
    @Override
    public Object getItem(int position) {
        return listData.get(position);
    }
}
```

```

    }
    @Override
    public long getItemId(int position) {
        return position;
    }
    public View getView(int position, View v, ViewGroup vg) {
        ViewHolder holder;
        if (v == null) {
            v = inflater.inflate(R.layout.list_row, null);
            holder = new ViewHolder();
            holder.uName = (TextView) v.findViewById(R.id.name);
            holder.uDesignation = (TextView)
v.findViewById(R.id.designation);
            holder.uLocation = (TextView) v.findViewById(R.id.location);
            v.setTag(holder);
        } else {
            holder = (ViewHolder) v.getTag();
        }
        holder.uName.setText(listData.get(position).getName());
        holder.uDesignation.setText(listData.get(position).getDesignation());
        holder.uLocation.setText(listData.get(position).getLocation());
        return v;
    }
    static class ViewHolder {
        TextView uName;
        TextView uDesignation;
        TextView uLocation;
    }
}

```

MainActivity.java

```

package com.example.l10_list2;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.AdapterView.OnItemSelectedListener;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.AdapterView.OnItemSelectedListener;
import android.widget.Toast;

import java.util.ArrayList;

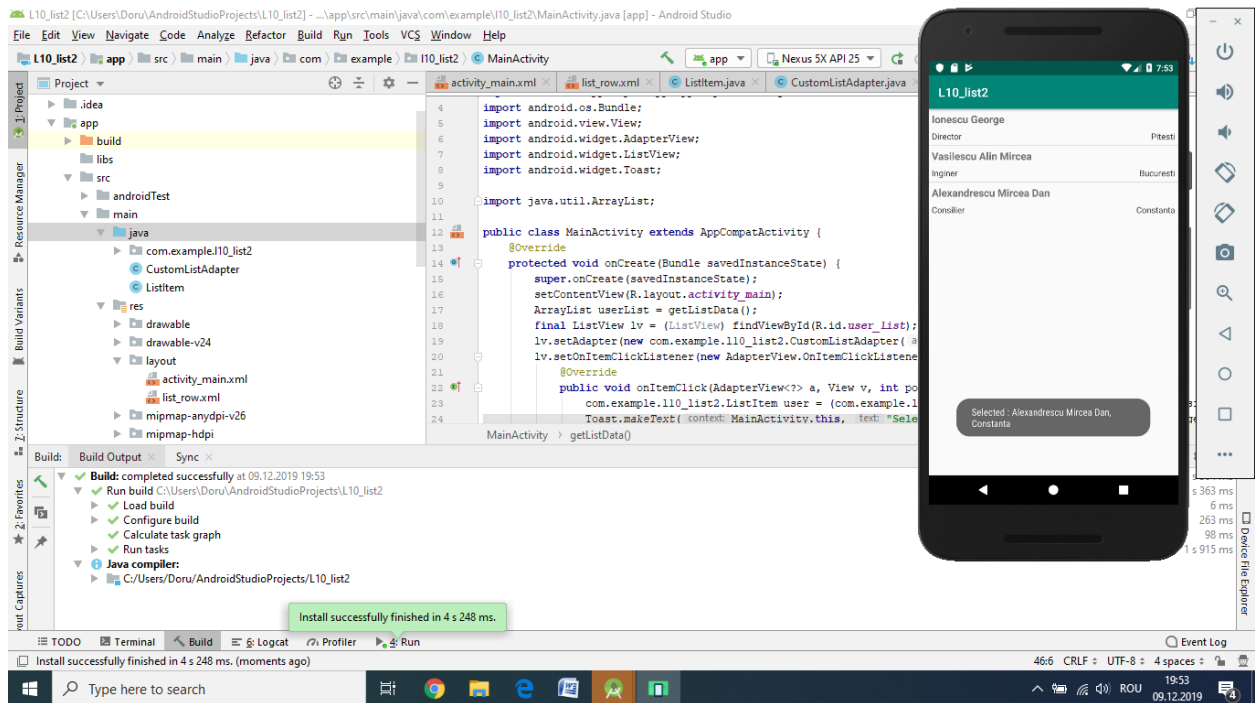
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ArrayList userList = getListData();
        final ListView lv = (ListView) findViewById(R.id.user_list);
        lv.setAdapter(new com.example.l10_list2.CustomListAdapter(this,
userList));
        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> a, View v, int position,

```

```

long id) {
    com.example.l10_list2.ListItem user =
    (com.example.l10_list2.ListItem) lv.getItemAtPosition(position);
    Toast.makeText(MainActivity.this, "Selected : " + " " +
    user.getName()+" , "+ user.getLocation(), Toast.LENGTH_SHORT).show();
    }
    });
}
private ArrayList getListData() {
    ArrayList<com.example.l10_list2.ListItem> results = new
ArrayList<>();
    com.example.l10_list2.ListItem user1 = new
com.example.l10_list2.ListItem();
    user1.setName("Ionescu George");
    user1.setDesignation("Director");
    user1.setLocation("Pitesti");
    results.add(user1);
    com.example.l10_list2.ListItem user2 = new
com.example.l10_list2.ListItem();
    user2.setName("Vasilescu Alin Mircea");
    user2.setDesignation("Inginer");
    user2.setLocation("Bucuresti");
    results.add(user2);
    com.example.l10_list2.ListItem user3 = new
com.example.l10_list2.ListItem();
    user3.setName("Alexandrescu Mircea Dan");
    user3.setDesignation("Consilier");
    user3.setLocation("Constanta");
    results.add(user3);
    return results;
}
}
}

```



Tema

1. Creati o lista cu numele a 10 figuri geometrice (patrat, cerc, triunghi echilateral, ...). Cand se activeaza un item se va afisa aria figurii geometrice.
2. Creati o lista cu cel putin 10 modele de masini si afisati informatii despre ele (inclusiv o imagine).

Bibliografie

<https://www.tutlane.com/tutorial/android/>

<https://developer.android.com/reference/android/widget/ListView?hl=en>