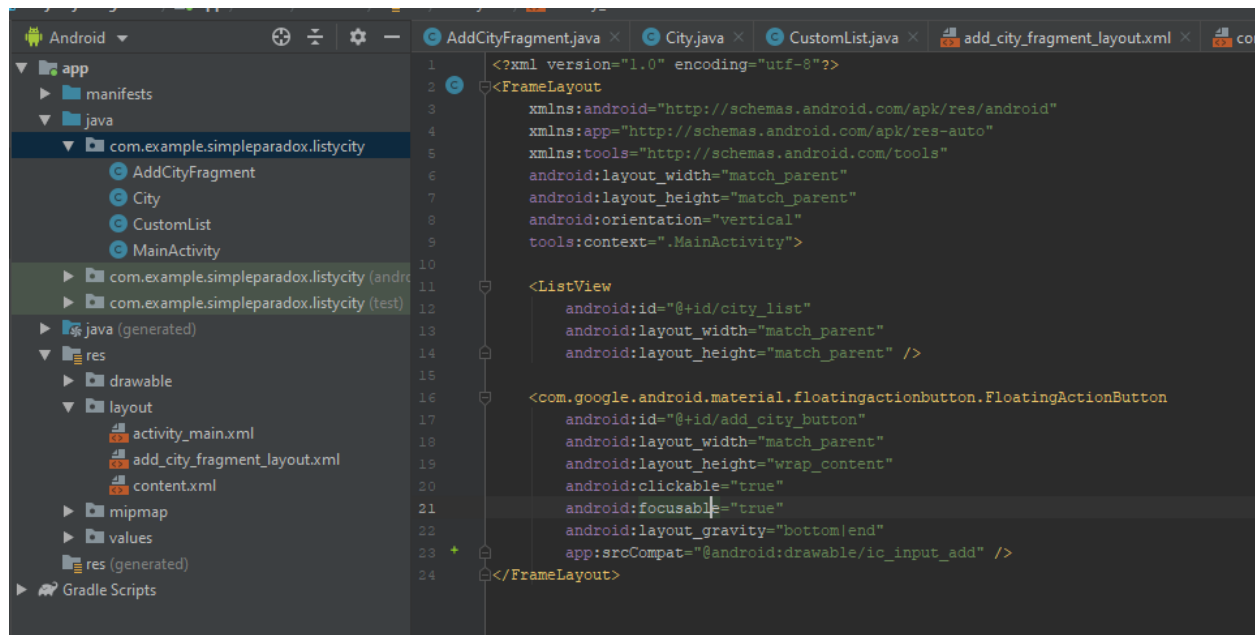


Lab 3 Instructions – Fragment

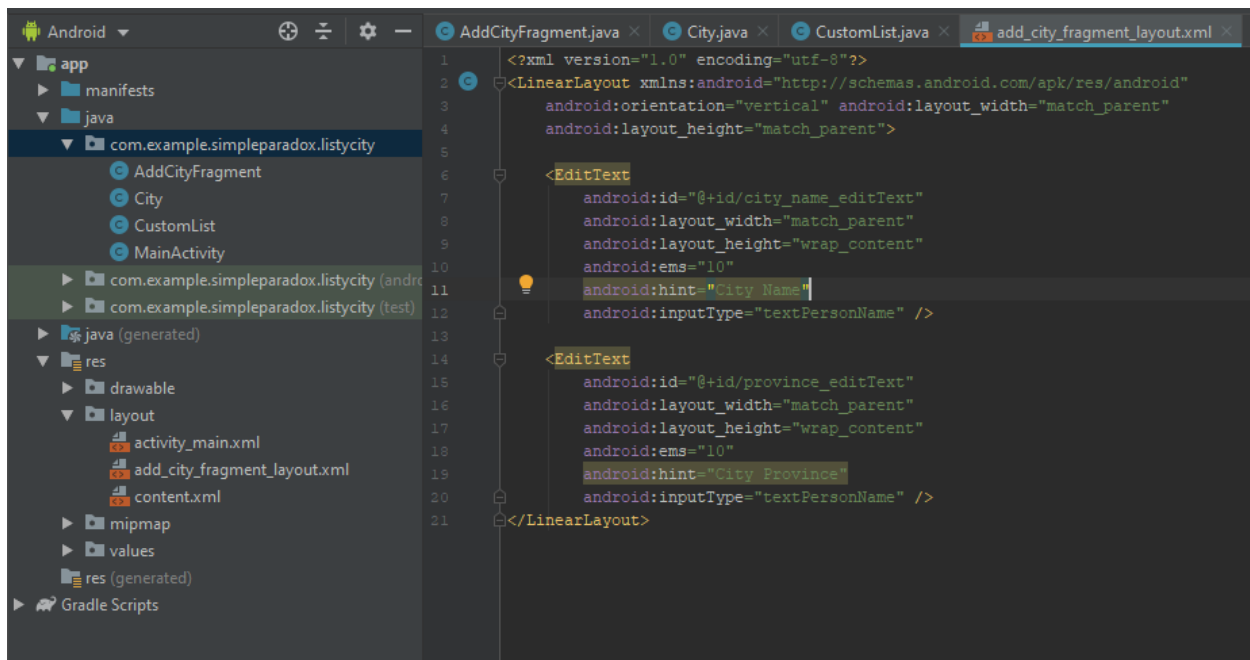
Take the ListyCity project and apply the changes described in “Lab 3 Instructions – CustomList” before proceeding with this demo.

Quick Summary: this demo shows one possible method of adding a fragment to your MainActivity which will be used to receive user input for the addition of new cities.

1. Open the Project in Android Studio and then navigate to the **activity_main.xml** file. Edit the xml so that it has a **FloatingActionButton** as depicted in the screenshot below. The **srcCompat** attribute specifies the appearance of the button thumbnail. Change the **activity_main.xml** to use a **FrameLayout** instead of a **LinearLayout**. Also note the additional **layout_gravity** attributes of the **FloatingActionButton** (to position it in the bottom right corner).



2. Create a layout file for the fragment – we'll call it **add_city_fragment_layout.xml** then add two **editText** fields (1 for the city name and 1 for the province).

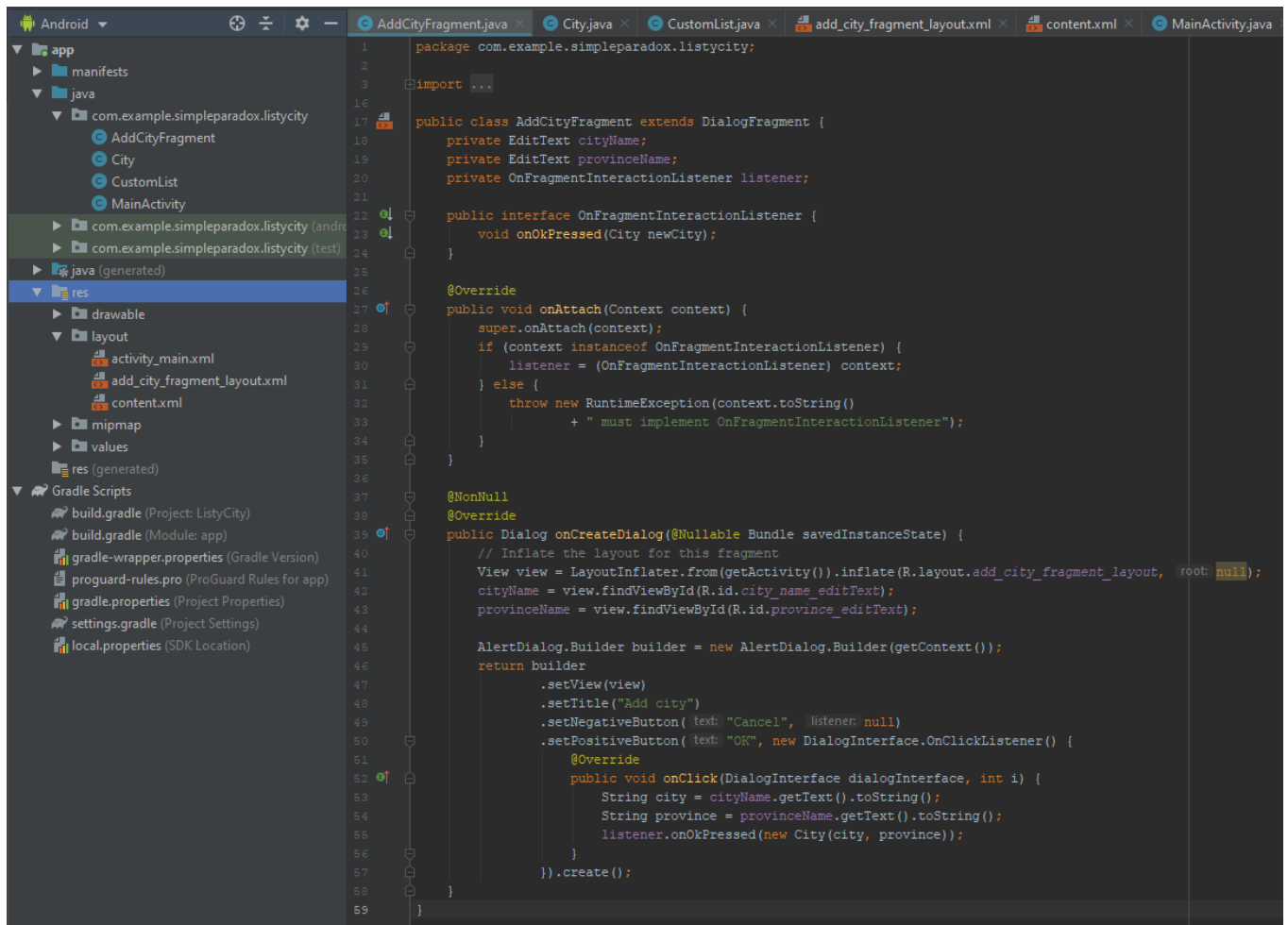


3. Finally, we will create a new fragment object called **AddCityFragment** by extending the **DialogFragment** class. In the class, we will override the **onCreateDialog()** method where we will initialize our AddCityFragment's **editText** fields. Additionally, create the **OnFragmentInteractionListener** interface that will call **onOkPressed** (in **MainActivity**) and pass a new **City** Object as a parameter.

In the **onCreateDialog()** method we will do the following: After initializing the View and the EditText fields we will create a new **AlertDialog** object using its **builder** method.

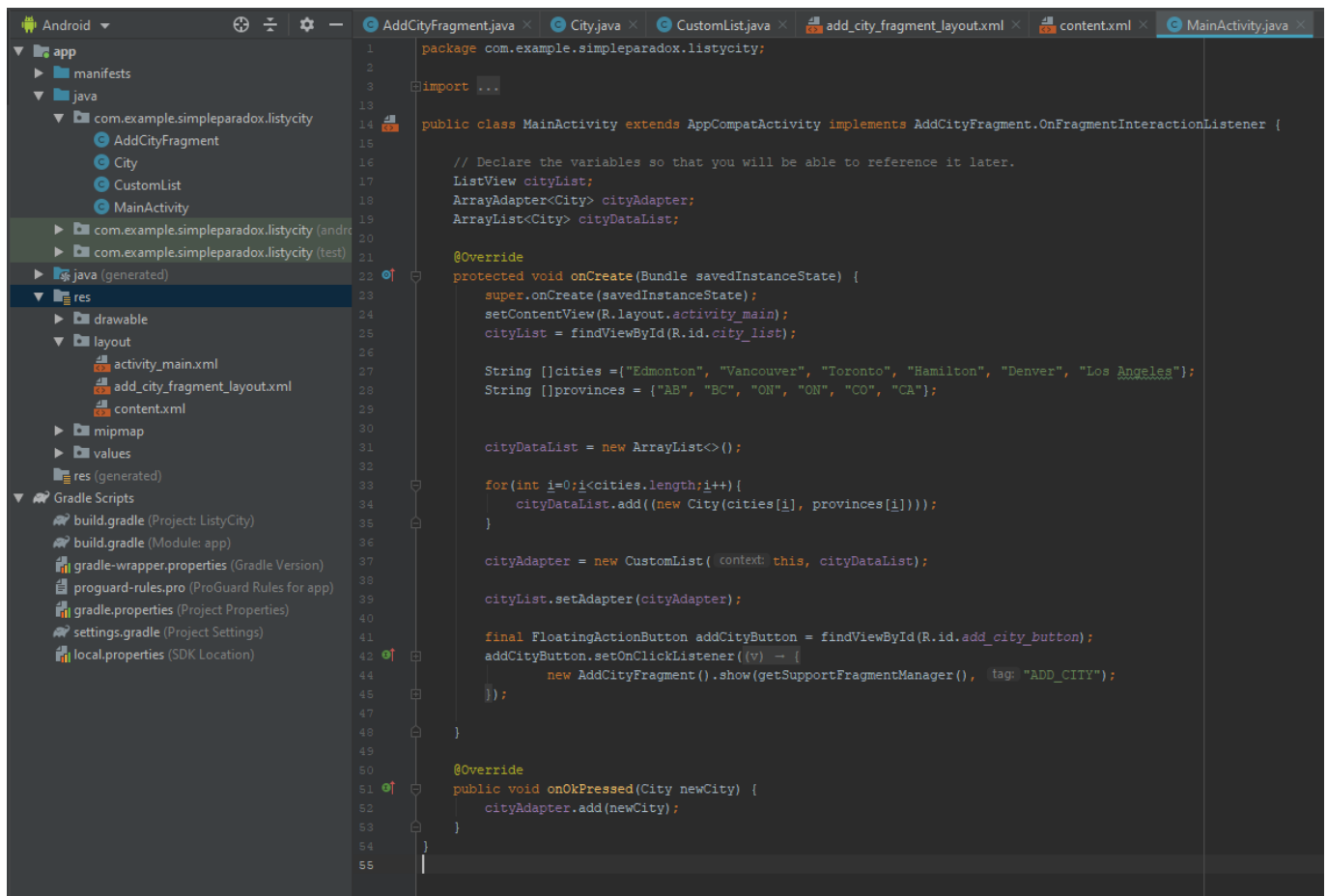
Within the **builder** method we will set the view, set a Title and finally set the OK and Cancel buttons. Note that for the OK button, we will implement the **listener interface** allowing us to pass a new **City** object (created using the entered city name and province name) to the **onOkPressed()** method in **MainActivity**.

Note the boilerplate code for the **onAttach()** method.



```
1 package com.example.simpleparadox.listcity;
2
3 import ...
4
5
6
7
8
9
10
11
12
13
14
15
16
17 public class AddCityFragment extends DialogFragment {
18     private EditText cityName;
19     private EditText provinceName;
20     private OnFragmentInteractionListener listener;
21
22     public interface OnFragmentInteractionListener {
23         void onOkPressed(City newCity);
24     }
25
26     @Override
27     public void onAttach(Context context) {
28         super.onAttach(context);
29         if (context instanceof OnFragmentInteractionListener) {
30             listener = (OnFragmentInteractionListener) context;
31         } else {
32             throw new RuntimeException(context.toString()
33                 + " must implement OnFragmentInteractionListener");
34         }
35     }
36
37     @NonNull
38     @Override
39     public Dialog onCreateDialog(@Nullable Bundle savedInstanceState) {
40         // Inflate the layout for this fragment
41         View view = LayoutInflater.from(getActivity()).inflate(R.layout.add_city_fragment_layout, root: null);
42         cityName = view.findViewById(R.id.city_name_editText);
43         provinceName = view.findViewById(R.id.province_editText);
44
45         AlertDialog.Builder builder = new AlertDialog.Builder(getContext());
46         return builder
47             .setView(view)
48             .setTitle("Add city")
49             .setNegativeButton(text: "Cancel", listener: null)
50             .setPositiveButton(text: "OK", new DialogInterface.OnClickListener() {
51                 @Override
52                 public void onClick(DialogInterface dialogInterface, int i) {
53                     String city = cityName.getText().toString();
54                     String province = provinceName.getText().toString();
55                     listener.onOkPressed(new City(city, province));
56                 }
57             })
58             .create();
59     }
60 }
```

4. Now we will create an **onClickListener()** for the **FloatingActionButton** as well as override the **onOkPressed()** method in the **MainActivity** class. **Additionally, the MainActivity class now implements the AddCityFragment. OnFragmentInteractionListener interface.** The **addCityButton** listener will call the **FragmentManager** to display the **ADD CITY** Fragment while the **onOkPressed()** method will take a **City** object as an argument and then add it to the **listview** by calling **cityAdapter.add(newCity)**



```
1 package com.example.simpleparadox.listcity;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity implements AddCityFragment.OnFragmentInteractionListener {
6
7     // Declare the variables so that you will be able to reference it later.
8     ListView cityList;
9     ArrayAdapter<City> cityAdapter;
10    ArrayList<City> cityDataList;
11
12    @Override
13    protected void onCreate(Bundle savedInstanceState) {
14        super.onCreate(savedInstanceState);
15        setContentView(R.layout.activity_main);
16        cityList = findViewById(R.id.city_list);
17
18        String []cities = {"Edmonton", "Vancouver", "Toronto", "Hamilton", "Denver", "Los Angeles"};
19        String []provinces = {"AB", "BC", "ON", "ON", "CO", "CA"};
20
21        cityDataList = new ArrayList<>();
22
23        for(int i=0;i<cities.length;i++){
24            cityDataList.add(new City(cities[i], provinces[i]));
25        }
26
27        cityAdapter = new CustomList( context: this, cityDataList);
28
29        cityList.setAdapter(cityAdapter);
30
31        final FloatingActionButton addCityButton = findViewById(R.id.add_city_button);
32        addCityButton.setOnClickListener((v) -> {
33            new AddCityFragment().show(getSupportFragmentManager(), tag: "ADD_CITY");
34        });
35
36    }
37
38    @Override
39    public void onOkPressed(City newCity) {
40        cityAdapter.add(newCity);
41    }
42
43 }
```