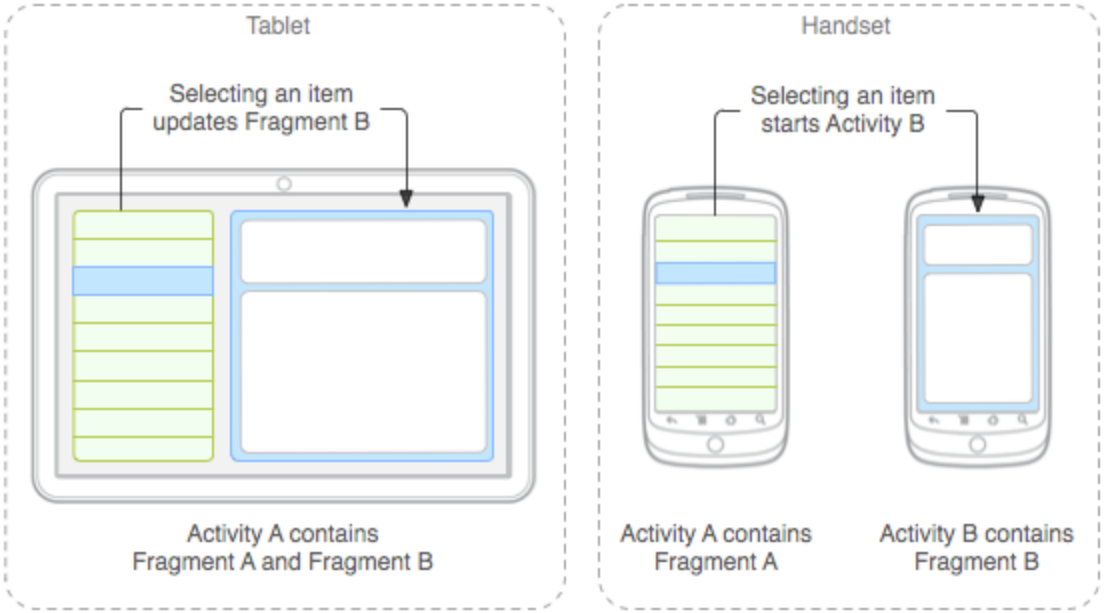
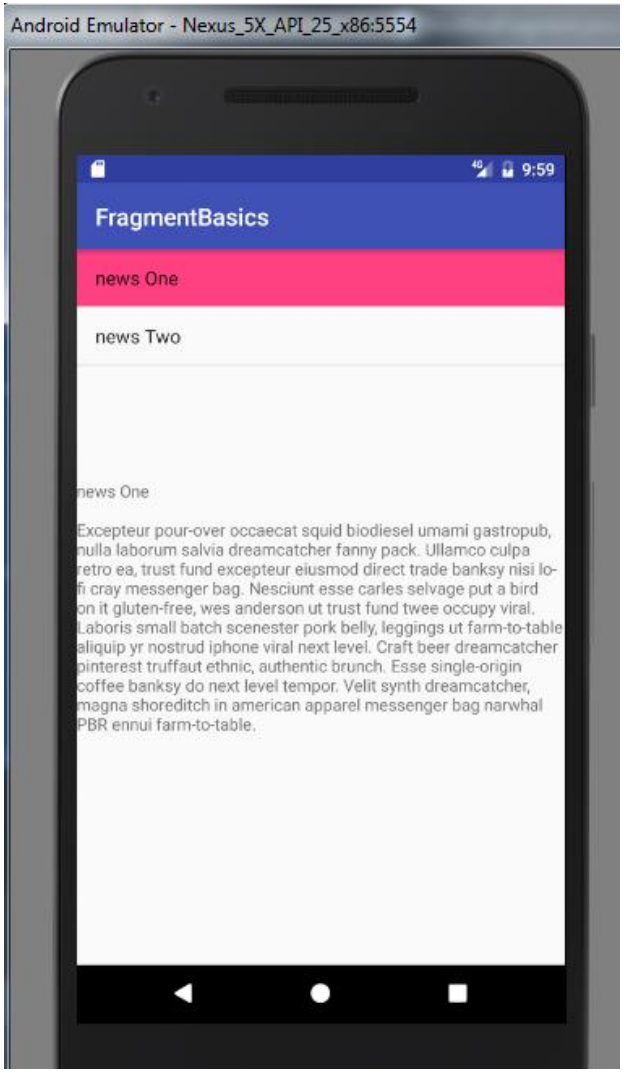
Fragments

- A Fragment represents a portion of user interface in an Activity.
- can combine multiple fragments in a single activity, or reuse a fragment in multiple activities.



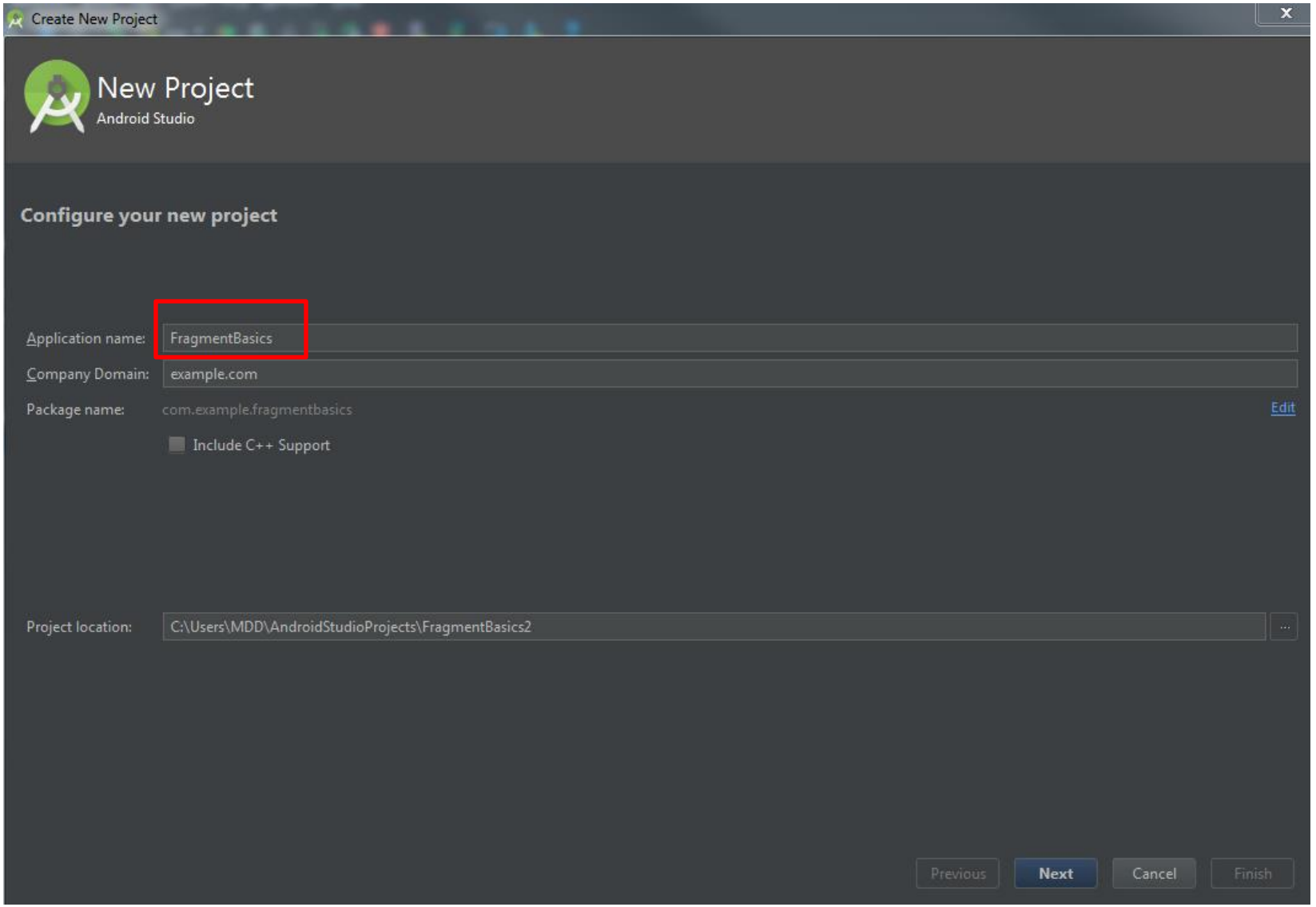
Let’s do this


Android Emulator - Nexus_5X_API_25_x86:5554
9:59
FragmentBasics
news One
news Two
news One
Excepteur pour-over occaecat squid biodiesel umami gastropub, nulla laborum salvia dreamcatcher fanny pack. Ullamco culpa retro ea, trust fund excepteur eiusmod direct trade banksy nisi lo-fi cray messenger bag. Nesciunt esse carles selvage put a bird on it gluten-free, wes anderson ut trust fund twee occupy viral. Laboris small batch scenester pork belly, leggings ut farm-to-table aliquip yr nostrud iphone viral next level. Craft beer dreamcatcher pinterest truffaut ethnic, authentic brunch. Esse single-origin coffee banksy do next level tempor. Velit synth dreamcatcher, magna shoreditch in american apparel messenger bag narwhal PBR ennui farm-to-table.

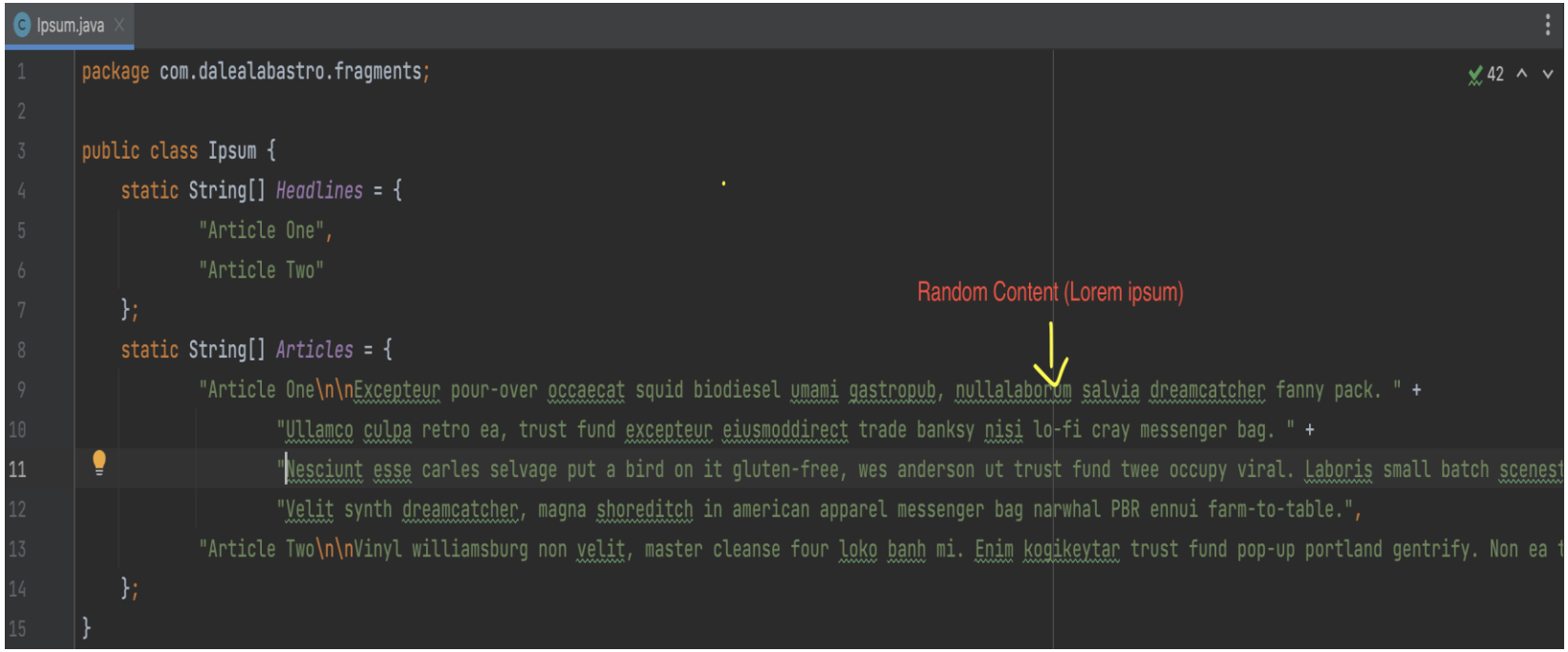
Lab 1.b FragmentBasics

- Create two fragments. One is a list fragment that contains all news headlines, the other is a fragment that displays the news article
- Display the two fragments inside a single activity

Build the first app with fragments

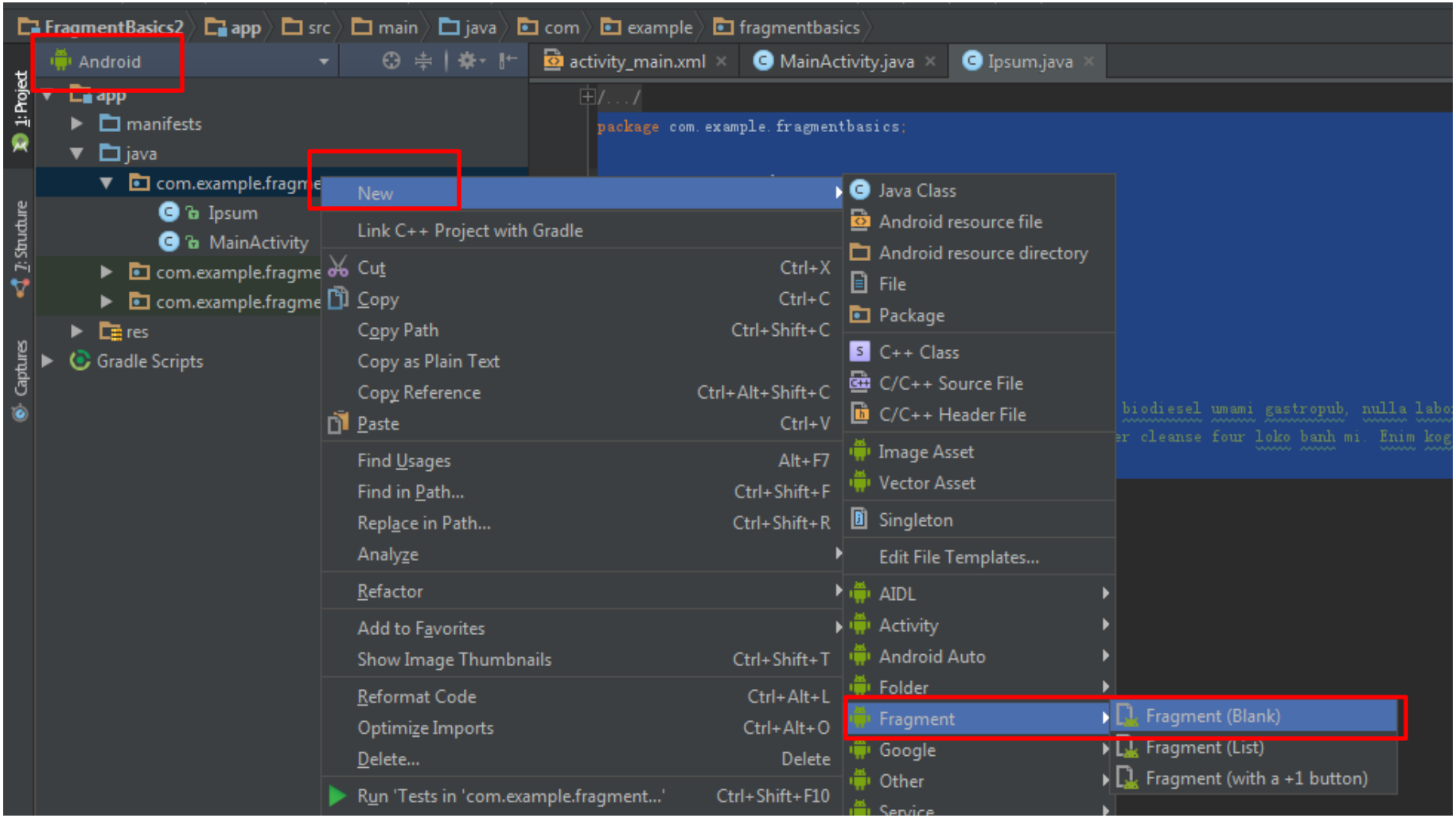


- Create Ipsum.java class, copy and paste lorem ipsum content as the news:

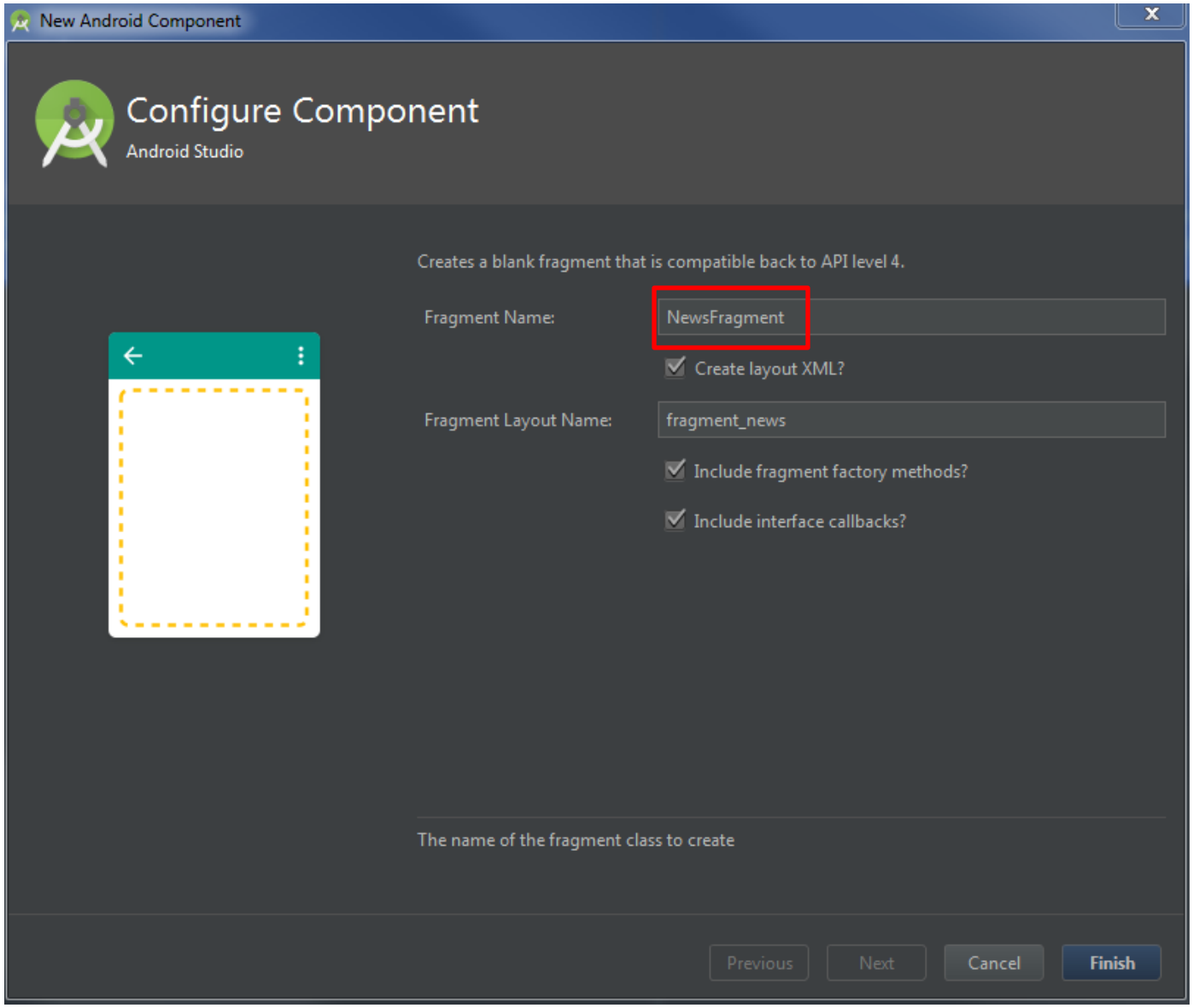



```java
package com.dalealabastro.fragments;

public class Ipsum {
    static String[] Headlines = {
            "Article One",
            "Article Two"
    };
    static String[] Articles = {
            "Article One\n\nExcepteur pour-over occaecat squid biodiesel umami gastropub, nullalaborum salvia dreamcatcher fanny pack. " +
                    "Ullamco culpa retro ea, trust fund excepteur eiusmoddirect trade banksy nisi lo-fi cray messenger bag. " +
                    "Nesciunt esse carles selvage put a bird on it gluten-free, wes anderson ut trust fund twee occupy viral. Laboris small batch scenest
                    "Velit synth dreamcatcher, magna shoreditch in american apparel messenger bag narwhal PBR ennui farm-to-table.",
            "Article Two\n\nVinyl williamsburg non velit, master cleanse four loko banh mi. Enim kogikeytar trust fund pop-up portland gentrify. Non ea t
    };
}
```

- Create a new fragment



- Configure the new fragment

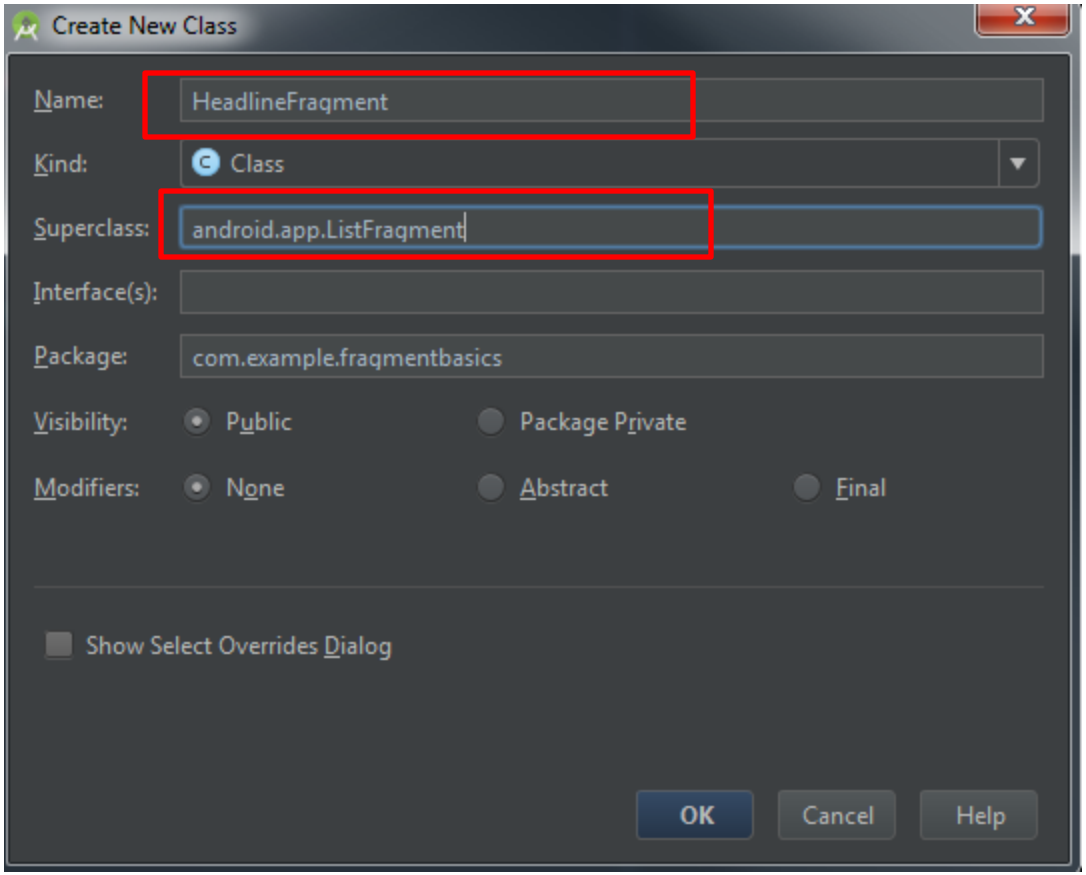


NewsFragment.java

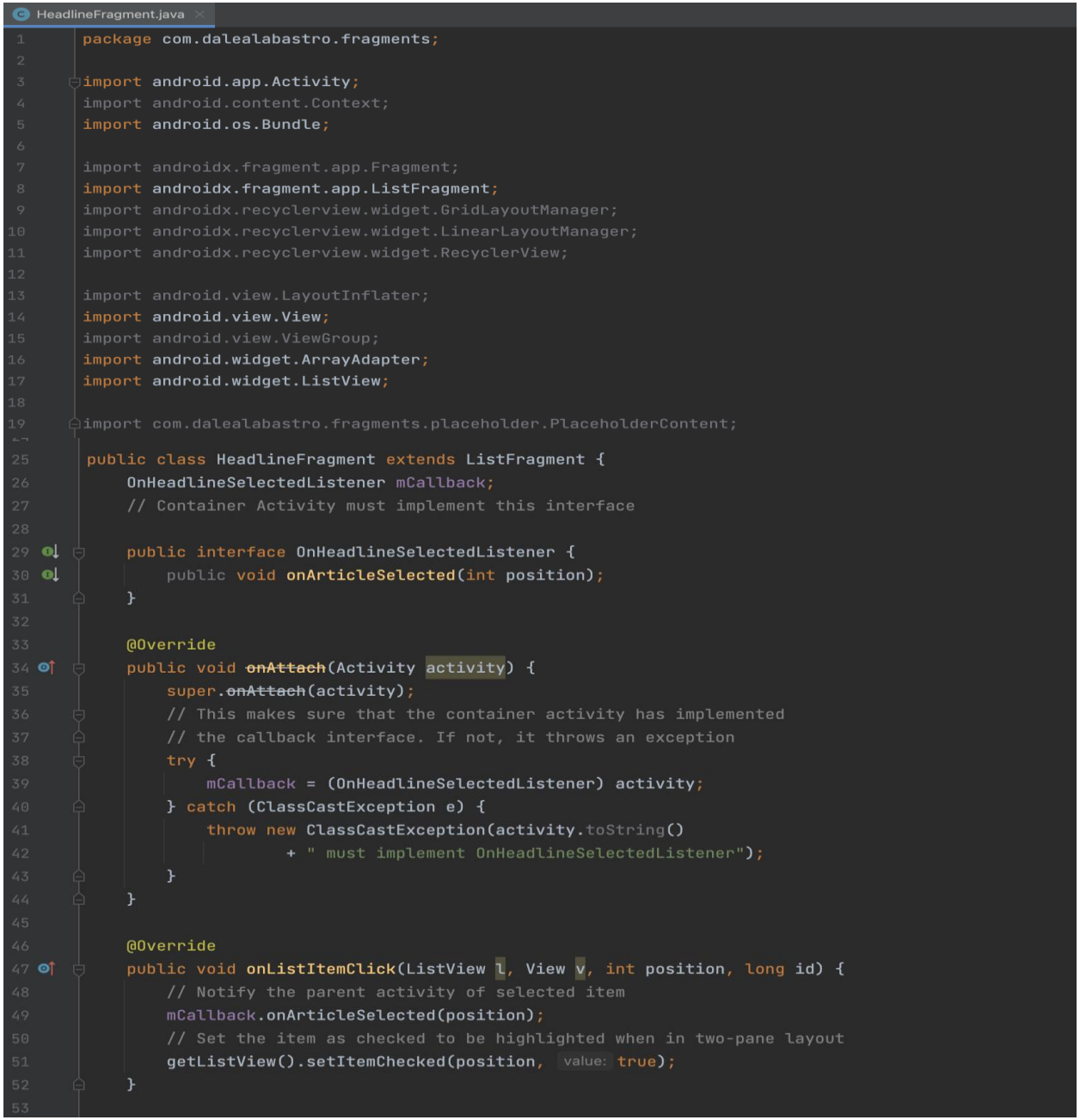
```java
package com.dalealabastro.fragments;

import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;

/**
 * A simple {@link Fragment} subclass.
 * Use the {@link NewsFragment #newInstance} factory method to
 * create an instance of this fragment.
 */

public class NewsFragment extends Fragment {
    final static String ARG_POSITION = "position";
    int mCurrentPosition = -1;

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_news, container, attachToRoot: false);
    }


    @Override
    public void onStart() {
        super.onStart();

        // During startup, check if there are arguments passed to the fragment.
        // onStart is a good place to do this because the layout has already been
        // applied to the fragment at this point so we can safely call the method
        // below that sets the article text.

        Bundle args = getArguments();
        if (args != null) {

            // Set article based on argument passed in
            updateArticleView(args.getInt(ARG_POSITION));

        } else if (mCurrentPosition != -1) {
            // Set article based on saved instance state defined during onCreateView
            updateArticleView(mCurrentPosition);
        }
    }

    public void updateArticleView(int position) {
        TextView article = (TextView) getActivity().findViewById(R.id.news);
        article.setText(Ipsum.Articles[position]);
        mCurrentPosition = position;
    }

    @Override
    public void onSaveInstanceState(Bundle outState) {
        super.onSaveInstanceState(outState);
        //Save the current article selection in case we need to recreate the fragment
        outState.putInt(ARG_POSITION, mCurrentPosition);
    }
}
```

Imports Section

- Create a second list fragment: HeadlineFragment.java



- Define an Interface in HeadlineFragment



- Implement onCreate and onStart for HeadlineFragement class

```
53
54
55      @Override
56      public void onCreate(Bundle savedInstanceState) {
57          super.onCreate(savedInstanceState);
58          int layout = android.R.layout.simple_list_item_activated_1;
59          setListAdapter(new ArrayAdapter<String>(getActivity(), layout, Ipsum.Headlines));
60      }
62      @Override
63      public void onStart() {
64          super.onStart();
65
66          if (getFragmentManager().findFragmentById(R.id.news_fragment) != null) {
67              getListView().setChoiceMode(ListView.CHOICE_MODE_SINGLE);
68          }
69      }
70
71
72
73
74
75  }
```

- In the MainActivity.java, implement the interface for the list fragment

MainActivity.java

```java
package com.dalealabastro.fragments;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity implements HeadlineFragment.OnHeadlineSelectedListener{

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void onArticleSelected(int position) {

        NewsFragment newsFragment = (NewsFragment) getSupportFragmentManager().findFragmentById(R.id.news_fragment);
        newsFragment.updateArticleView(position);

    }
}
```

- Organize these two fragments in activity_main.xml

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:id="@+id/fragment_container"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <fragment android:name="com.dalealabastro.fragments.HeadlineFragment"
        android:id="@+id/headlines_fragment"
        android:layout_weight="1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"  />

    <fragment android:name="com.dalealabastro.fragments.NewsFragment"
        android:id="@+id/news_fragment"
        android:layout_weight="2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"  />

</LinearLayout>
```

- Create the fragment_headline.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/item_number"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:textAppearance="?attr/textAppearanceListItem" />

    <TextView
        android:id="@+id/content"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:textAppearance="?attr/textAppearanceListItem" />
</LinearLayout>
```

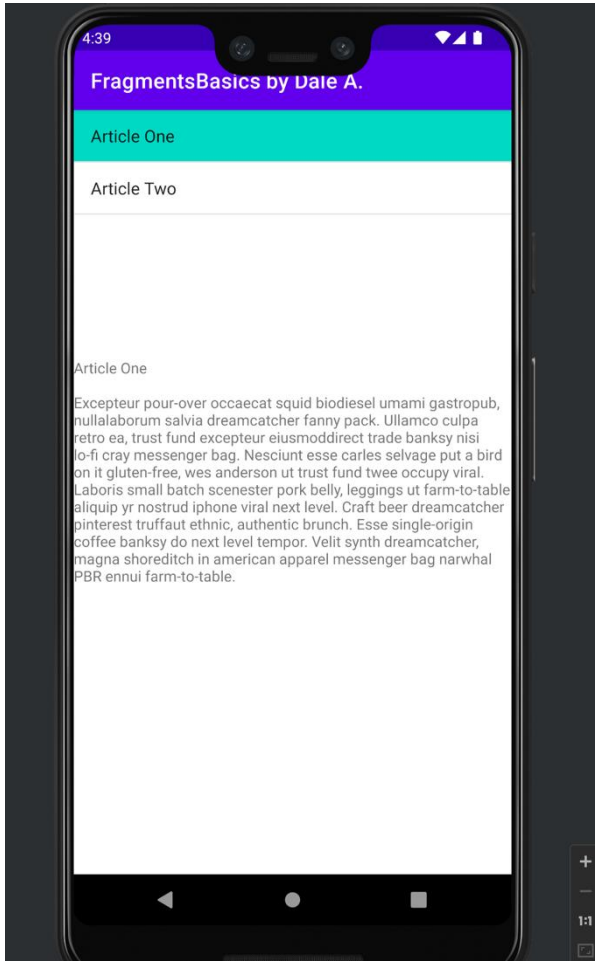
- Create fragment_headline_list.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.recyclerview.widget.RecyclerView 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/list"
    android:name="com.dalealabastro.fragments.HeadlineFragment"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginLeft="16dp"
    android:layout_marginRight="16dp"
    app:layoutManager="LinearLayoutManager"
    tools:context=".HeadlineFragment"
    tools:listitem="@layout/fragment_headline" />
```

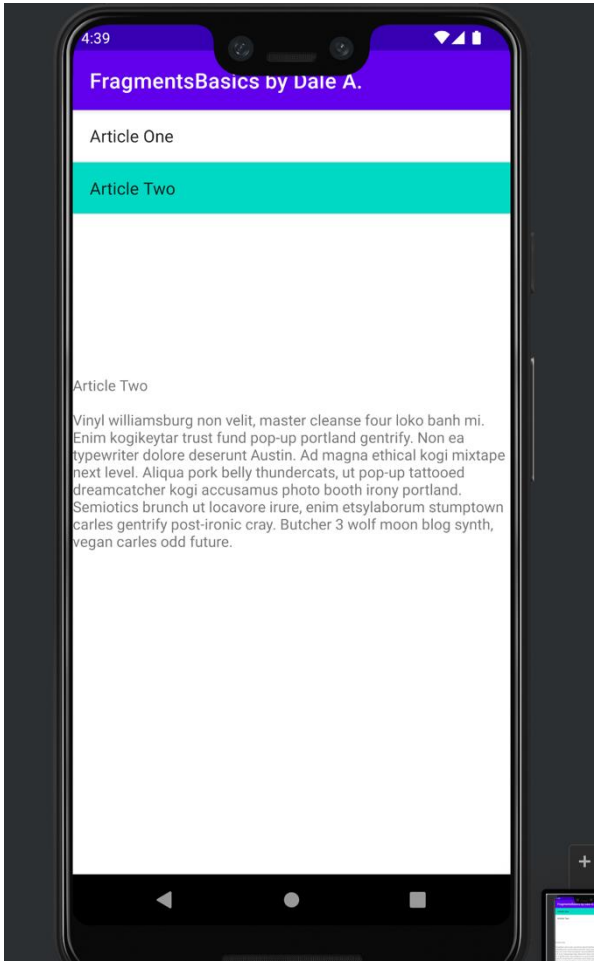
- Create fragment_news.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".NewsFragment">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Fragments"
        android:id="@+id/news" />

</FrameLayout>
```

Run the app



Article 1 Selected



Article 2 Selected

Extra credits

- change of phone orientations. Build an app with two fragments (a headline fragment and a news fragment).
- The app should display only a single fragment when the phone is held in portray position, and display both fragments at the same time when the phone is held in landscape position.