

Building Your First App

Welcome to Android application development!

Before you start developing your first app, be sure you have your development environment set up. You need to:

1. Download the Android SDK.
2. Install the ADT plugin for Eclipse (if you'll use the Eclipse IDE).
3. Download the latest SDK tools and platforms using the SDK Manager.

Create a Project with Eclipse

1. Click **New** in the toolbar.
2. In the window that appears, open the **Android** folder, select **Android Application Project**, and click **Next**.

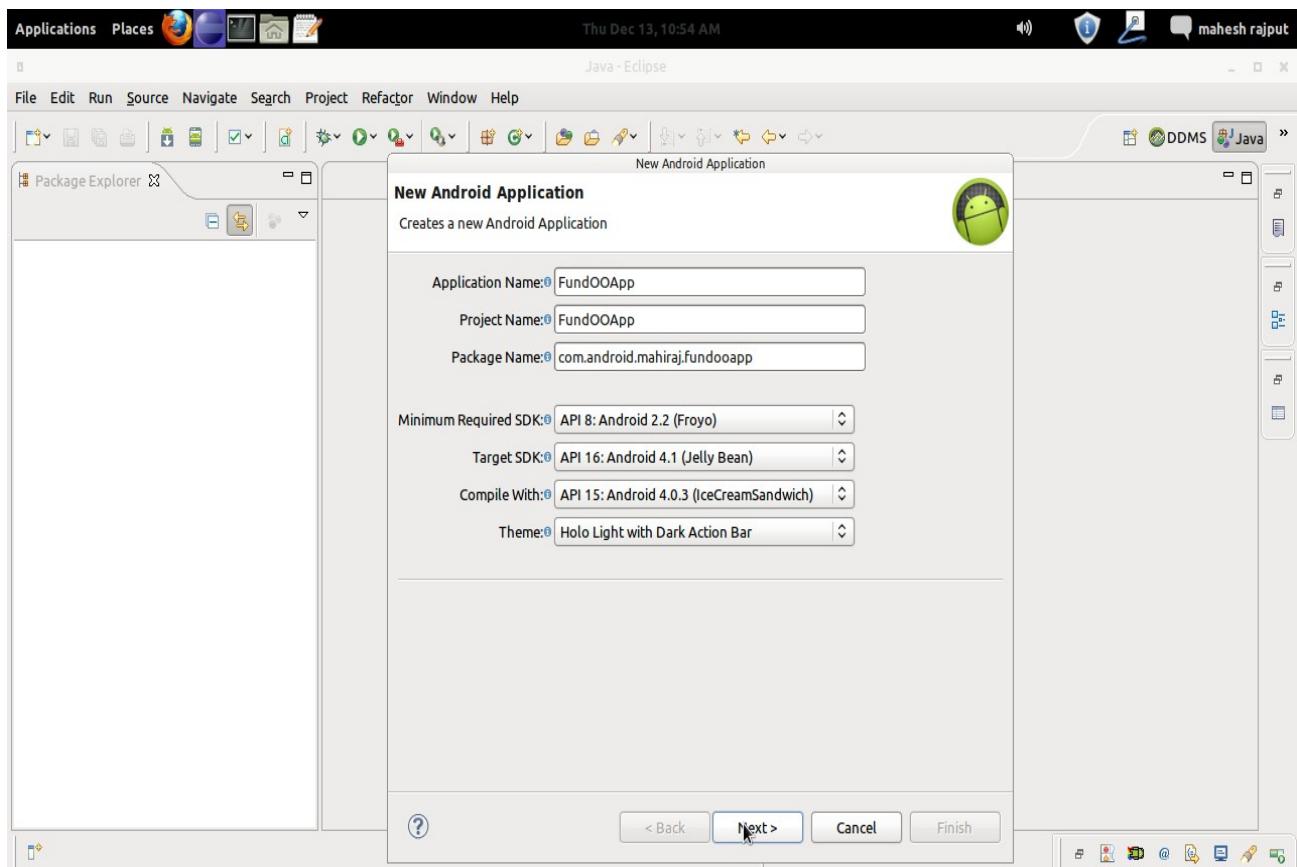


Figure 1. The New Android App Project wizard in Eclipse.

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- Fill in the form that appears:
- **Application Name** is the app name that appears to users. For this project, use "My First App."
- **Project Name** is the name of your project directory and the name visible in Eclipse.
- **Package Name** is the package namespace for your app (following the same rules as packages in the Java programming language). Your package name must be unique across all packages installed on the Android system. For this reason, it's generally best if you use a name that begins with the reverse domain name of your organization or publisher entity. For this project, you can use something like "com.example.myfirstapp." However, you cannot publish your app on Google Play using the "com.example" namespace.
- **Minimum Required SDK** is the lowest version of Android that your app supports, indicated using the [API level](#). To support as many devices as possible, you should set this to the lowest version available that allows your app to provide its core feature set. If any feature of your app is possible only on newer versions of Android and it's not critical to the app's core feature set, you can enable the feature only when running on the versions that support it (as discussed in [Supporting Different Platform Versions](#)). Leave this set to the default value for this project.
- **Target SDK** indicates the highest version of Android (also using the [API level](#)) with which you have tested with your application.

As new versions of Android become available, you should test your app on the new version and update this value to match the latest API level in order to take advantage of new platform features.

- **Compile With** is the platform version against which you will compile your app. By default, this is set to the latest version of Android available in your SDK. (It should be Android 4.1 or greater; if you don't have such a version available, you must install one using the [SDK Manager](#)). You can still build your app to support older versions, but setting the build target to the latest version allows you to enable new features and optimize your app for a great user experience on the latest devices.
- **Theme** specifies the Android UI style to apply for your app. You can leave this alone.

Click **Next**.

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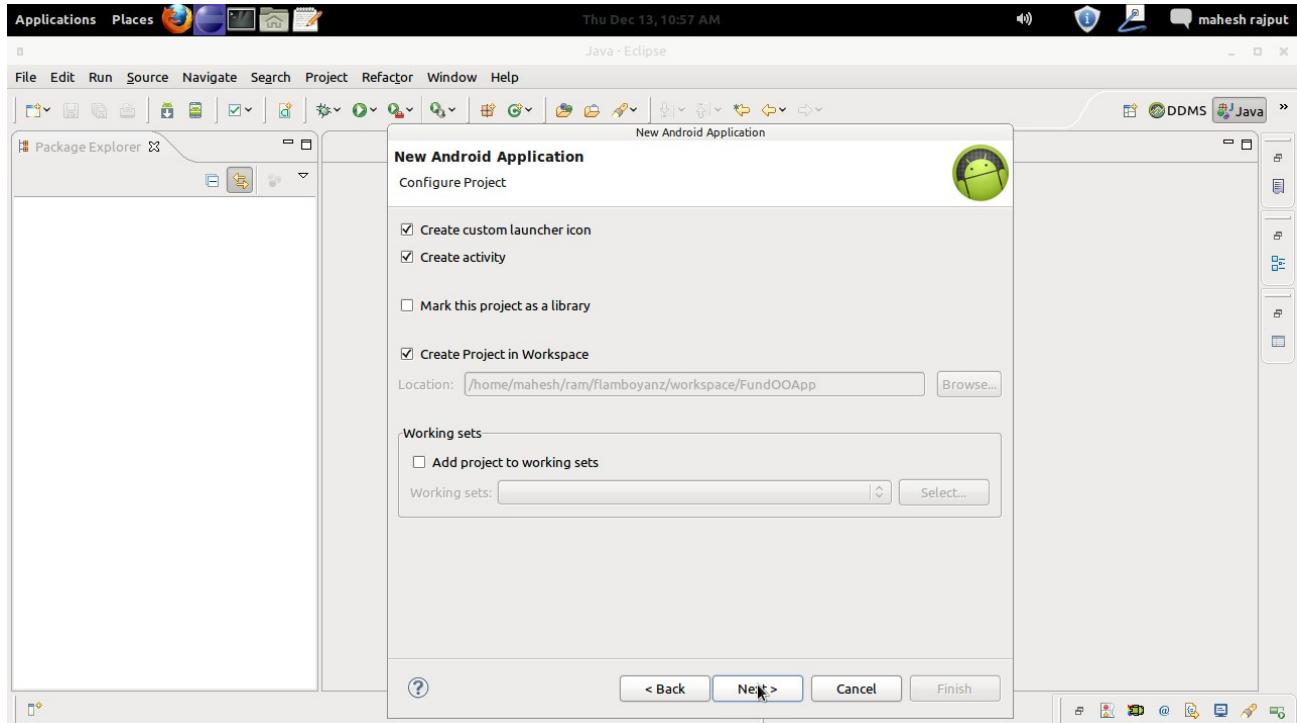


Figure 2.

- On the next screen to configure the project, leave the default selections and click **Next**.
- The next screen can help you create a launcher icon for your app.

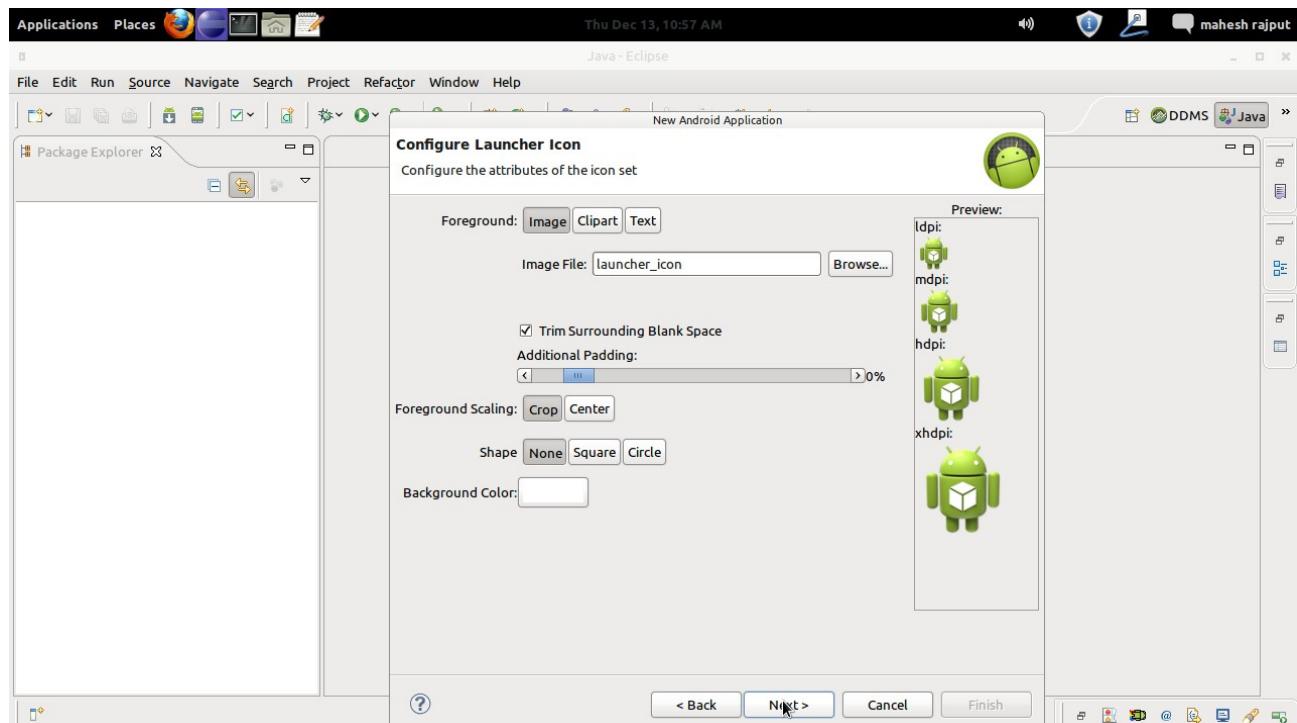


Figure 3.

You can customize an icon in several ways and the tool generates an icon for all screen densities. Before you publish your app, you should be sure your icon meets the specifications defined in the

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Iconography design guide.

Click Next.

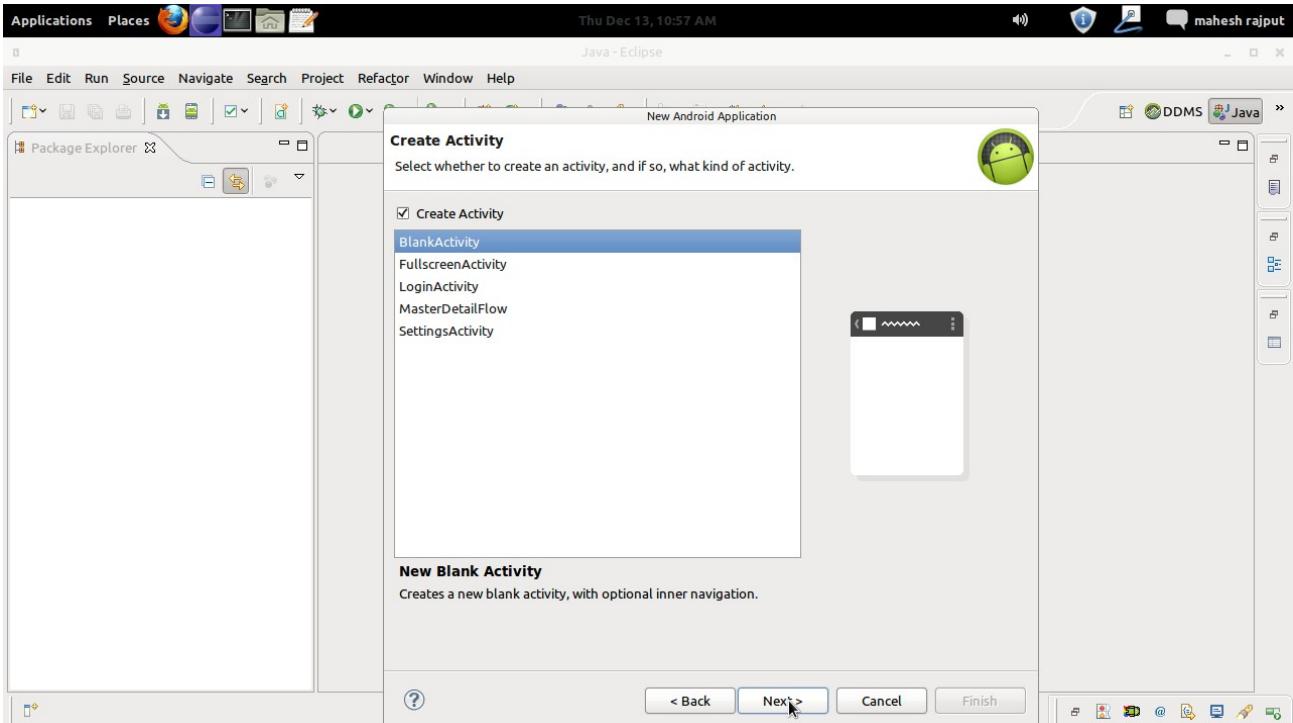


Figure 4.

- Now you can select an activity template from which to begin building your app.

For this project, select **BlankActivity** and click **Next**.

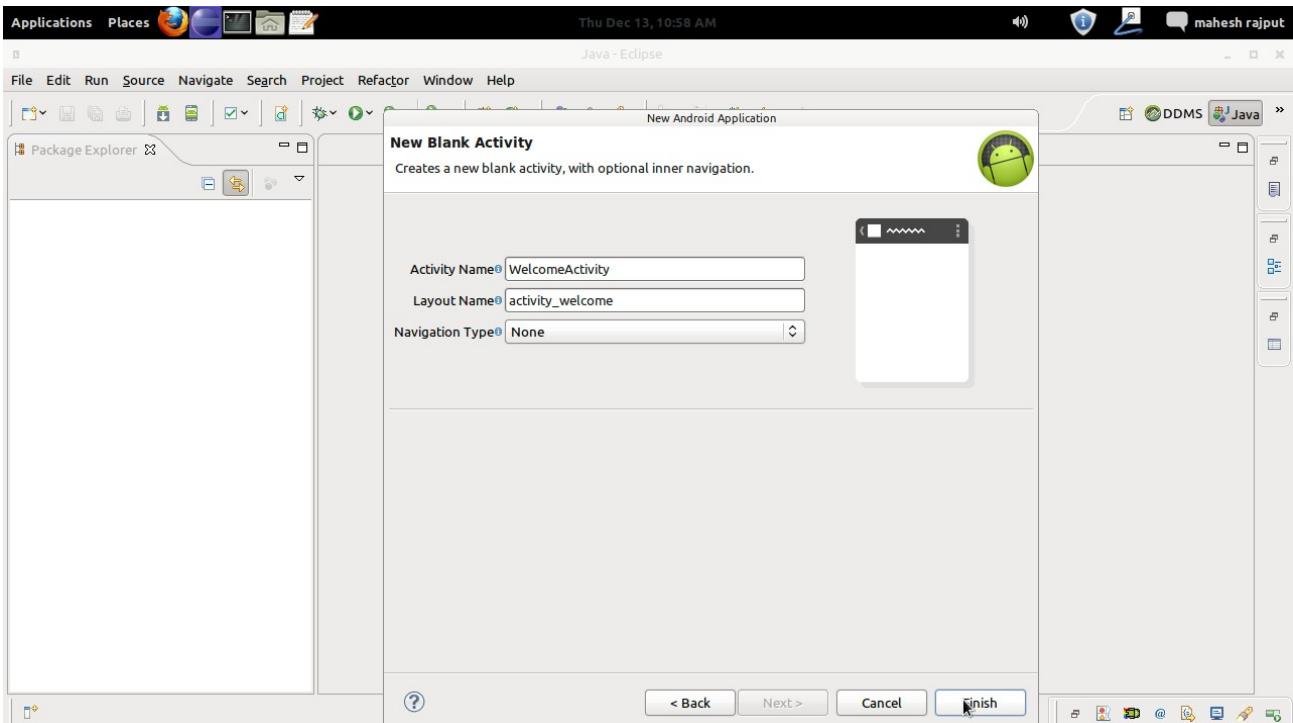
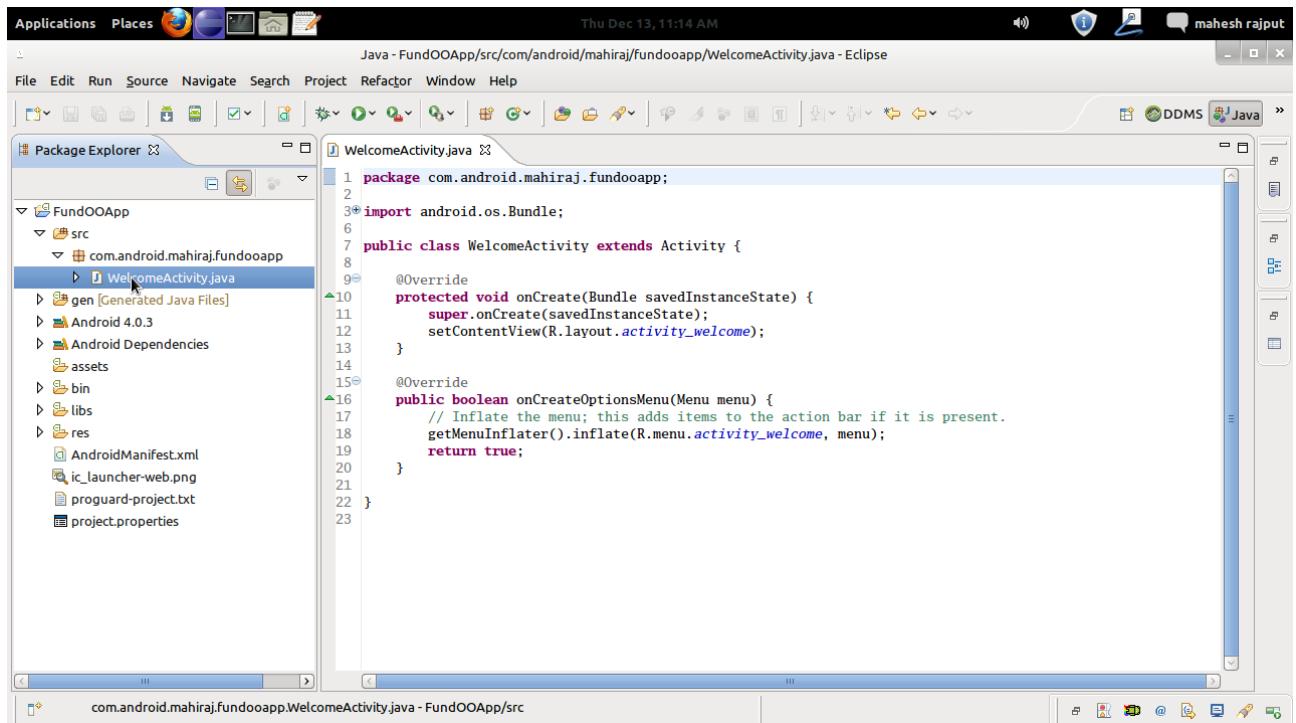


Figure 5.

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- Creating a Activity class name **WelcomeActivity**. or
- Leave all the details for the activity in their default state and click **Finish**.

Your Android project is now set up with some default files and you're ready to begin building the app. Continue to the [next lesson](#).



The screenshot shows the Eclipse IDE interface with the following details:

- Title Bar:** Java - FundOOApp/src/com/android/mahiraj/fundoapp/WelcomeActivity.java - Eclipse
- Toolbar:** Standard Eclipse toolbar with icons for file operations, search, and project navigation.
- Menu Bar:** File, Edit, Run, Source, Navigate, Search, Project, Refactor, Window, Help.
- Package Explorer:** Shows the project structure:
 - FundOOApp
 - src
 - com.android.mahiraj.fundoapp
 - WelcomeActivity.java
 - [Generated Java Files]
 - Android 4.0.3
 - Android Dependencies
 - assets
 - bin
 - libs
 - res
 - AndroidManifest.xml
 - ic_launcher-web.png
 - proguard-project.txt
 - project.properties
- Editor:** Displays the source code for WelcomeActivity.java:

```
1 package com.android.mahiraj.fundoapp;
2
3 import android.os.Bundle;
4
5 public class WelcomeActivity extends Activity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_welcome);
11    }
12
13    @Override
14    public boolean onCreateOptionsMenu(Menu menu) {
15        // Inflate the menu; this adds items to the action bar if it is present.
16        getMenuInflater().inflate(R.menu.activity_welcome, menu);
17        return true;
18    }
19
20
21
22
23 }
```
- Bottom Status Bar:** Shows the current date and time (Thu Dec 13, 11:14 AM) and various system icons.

Figure 6. The above fig 6. shows the source code in the **WelcomeActivity** by default when you create a Activity class through AndroidMenifest.xml file.

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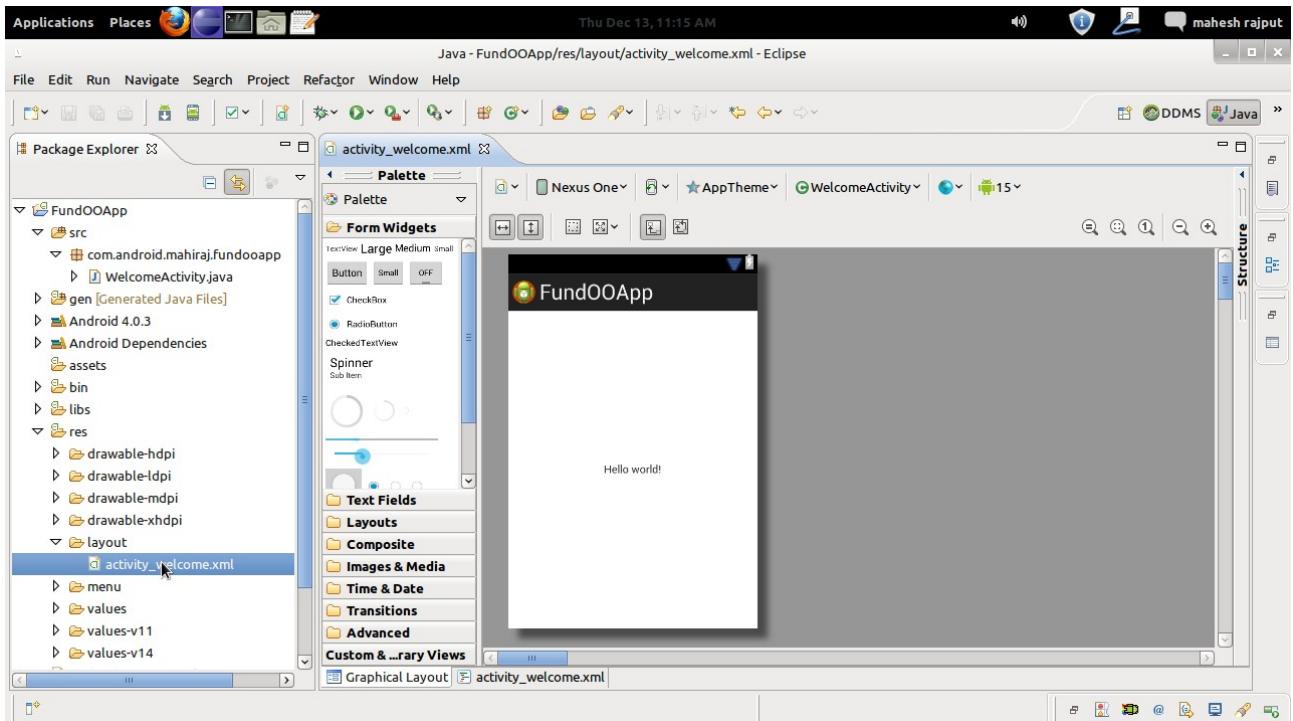


Figure 7. shows the default layout (activity_welcome.xml) xml file created for WelcomeActivity class.

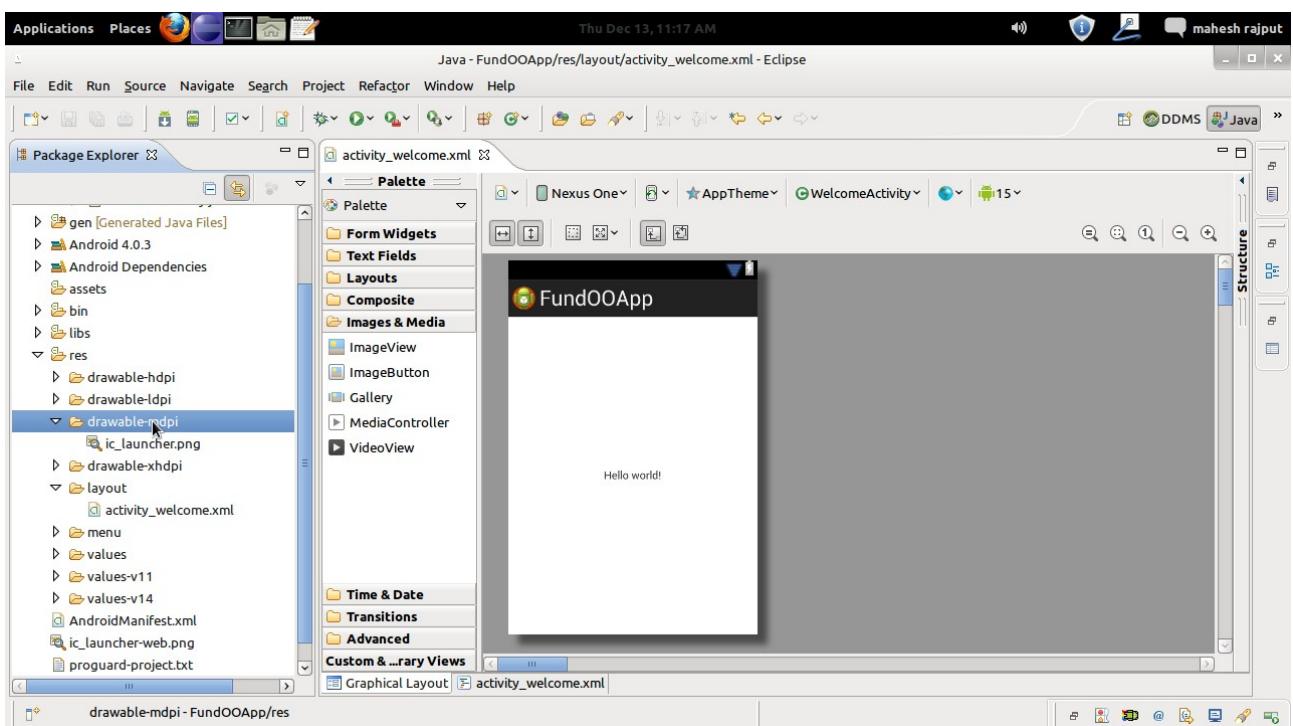


Figure 8. shows adding image files m.png and title_image.png in the drawable folder.

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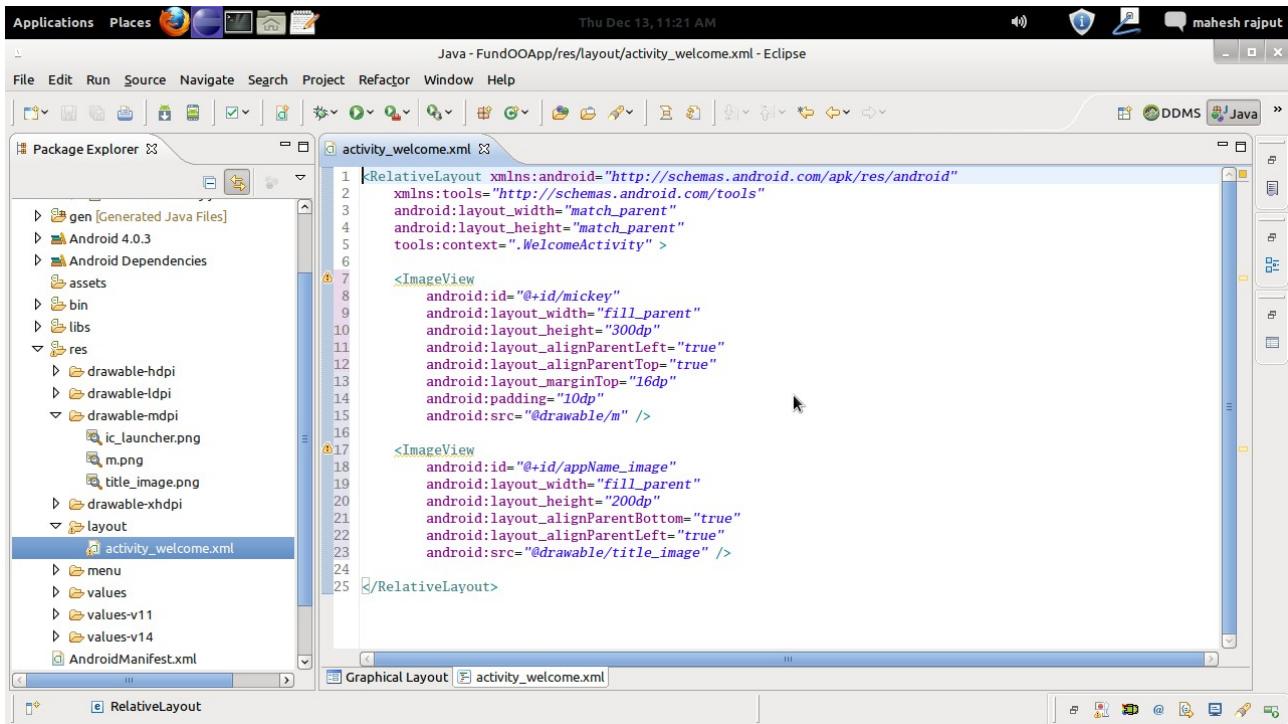


Figure 9. shows adding ImageView in the **activity_welcome.xml**.

activity_welcome.xml

```
<RelativeLayout 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=".WelcomeActivity" >

    <ImageView
        android:id="@+id/mickey"
        android:layout_width="fill_parent"
        android:layout_height="300dp"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginTop="16dp"
        android:padding="10dp"
        android:src="@drawable/m" />

    <ImageView
        android:id="@+id/appName_image"
        android:layout_width="fill_parent"
        android:layout_height="200dp"
        android:layout_alignParentBottom="true"
        android:layout_alignParentLeft="true"
        android:src="@drawable/title_image" />

</RelativeLayout>
```

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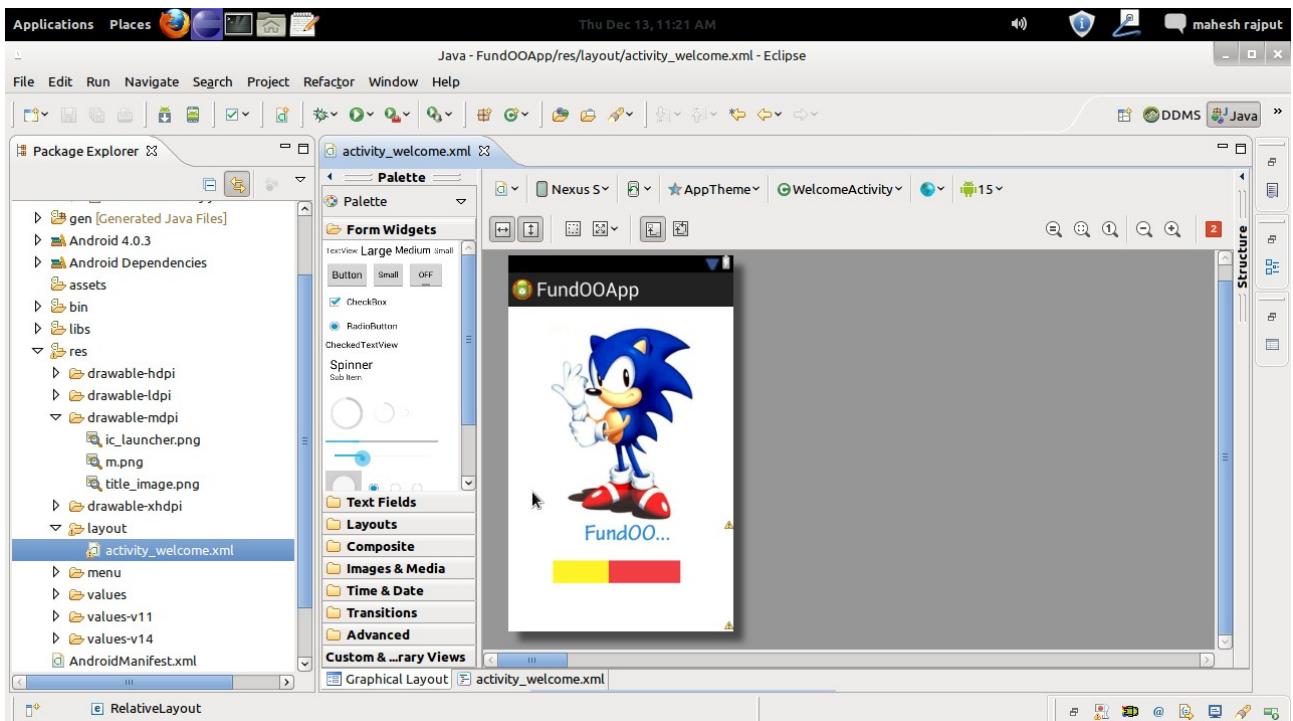


Figure 10. shows 2 ImageView in the `activity_welcome.xml`. One is micky and another one is Title with a color bar.

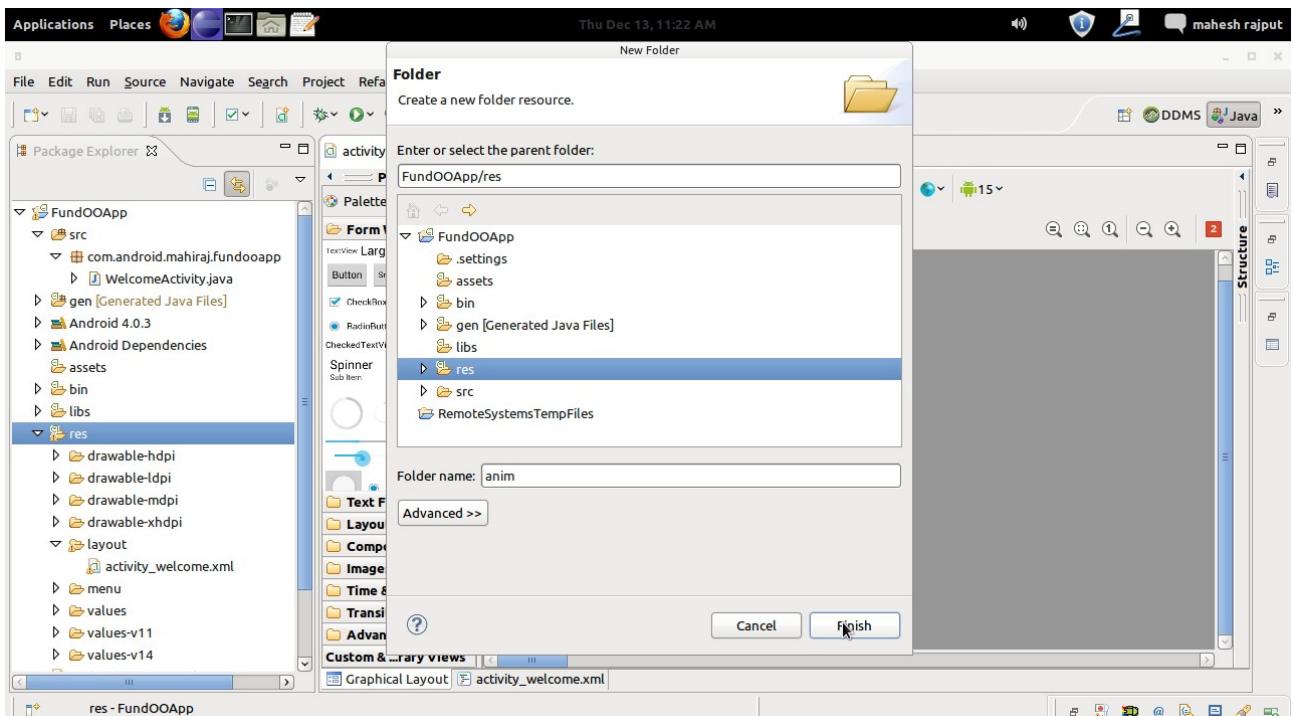
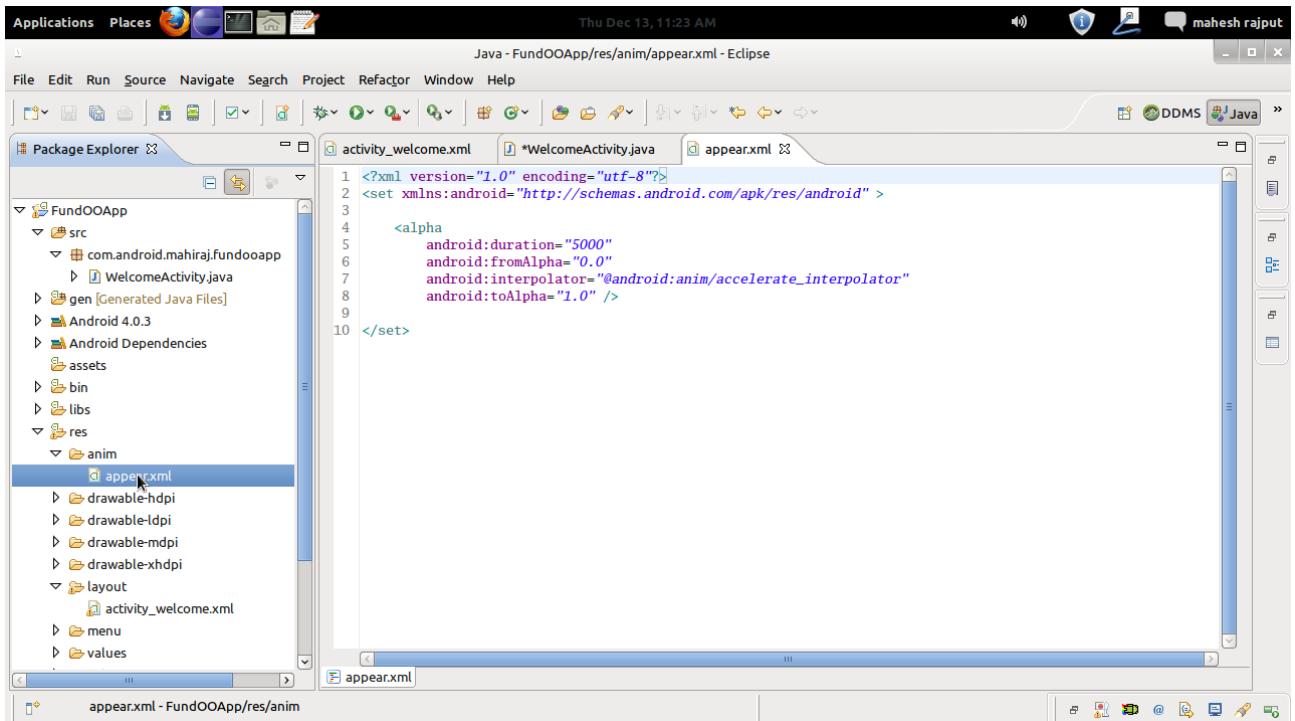


Figure 11. shows creating a `anim` folder under the `res` folder. In this `anim` folder adding the animation xml resource files...

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```
1 <?xml version="1.0" encoding="utf-8"?>
2 <set xmlns:android="http://schemas.android.com/apk/res/android" >
3
4     <alpha
5         android:duration="5000"
6         android:fromAlpha="0.0"
7         android:interpolator="@android:anim/accelerate_interpolator"
8         android:toAlpha="1.0" />
9
10 </set>
```

Figure 12. shows In this anim folder adding the animation xml resource files...

The title image ie **title_image.png** is having the alpha animation effect. Which gives fading effect in the WelcomeActivity.

Put the following code to the **WelcomeActivity.java** class

```
package com.android.mahiraj.fundooapp;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.animation.Animation;
import android.view.animation.Animation.AnimationListener;
import android.view.animation.AnimationUtils;
import android.widget.ImageView;

public class WelcomeActivity extends Activity {
    ImageView mickey;
    ImageView app_name;

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

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```
    getResourceIDs();

}

private void getResourceIDs() {
    mickey = (ImageView) findViewById(R.id.mickey);
    app_name = (ImageView) findViewById(R.id.appName_image);
    setAnimation();
}

private void setAnimation() {
    Animation animation = AnimationUtils.loadAnimation(this, R.anim.appear);
    app_name.setAnimation(animation);
    animation.setAnimationListener(new AnimationListener() {

        @Override
        public void onAnimationStart(Animation animation) {
            // TODO Auto-generated method stub
        }

        @Override
        public void onAnimationRepeat(Animation animation) {
            // TODO Auto-generated method stub
        }

        @Override
        public void onAnimationEnd(Animation animation) {
            Intent intent = new Intent(WelcomeActivity.this,
                MainActivity.class);
            startActivity(intent);
            finish();
        }
    });
}

@Override
public boolean onCreateOptionsMenu(Menu menu) {
    // Inflate the menu; this adds items to the action bar if it is present.
    getMenuInflater().inflate(R.menu.activity_welcome, menu);
    return true;
}
```

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Now your first page ie WelcomeActivity is created. After the Animation effect I'm navigating or invoking second Activity called **MainActivity** which is going to display list of category for eg: jokes, love, greeting, news.

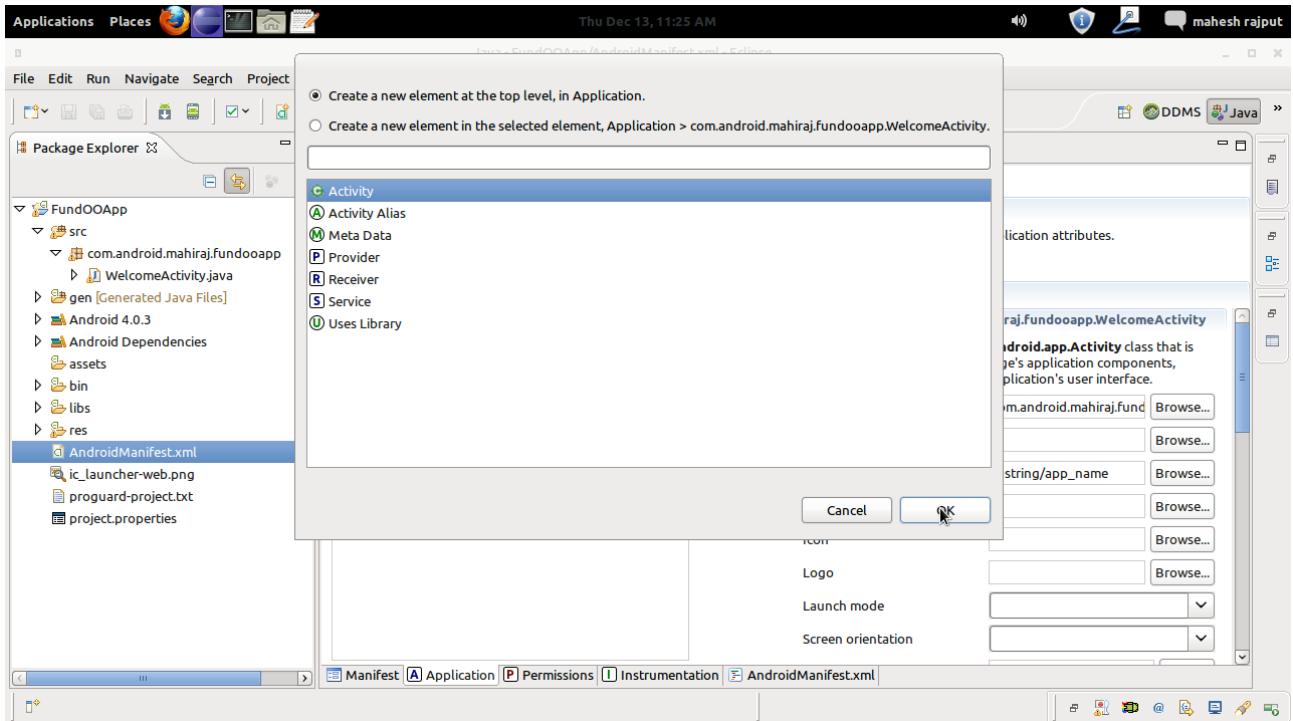


Figure 12. Creating second Activity class.

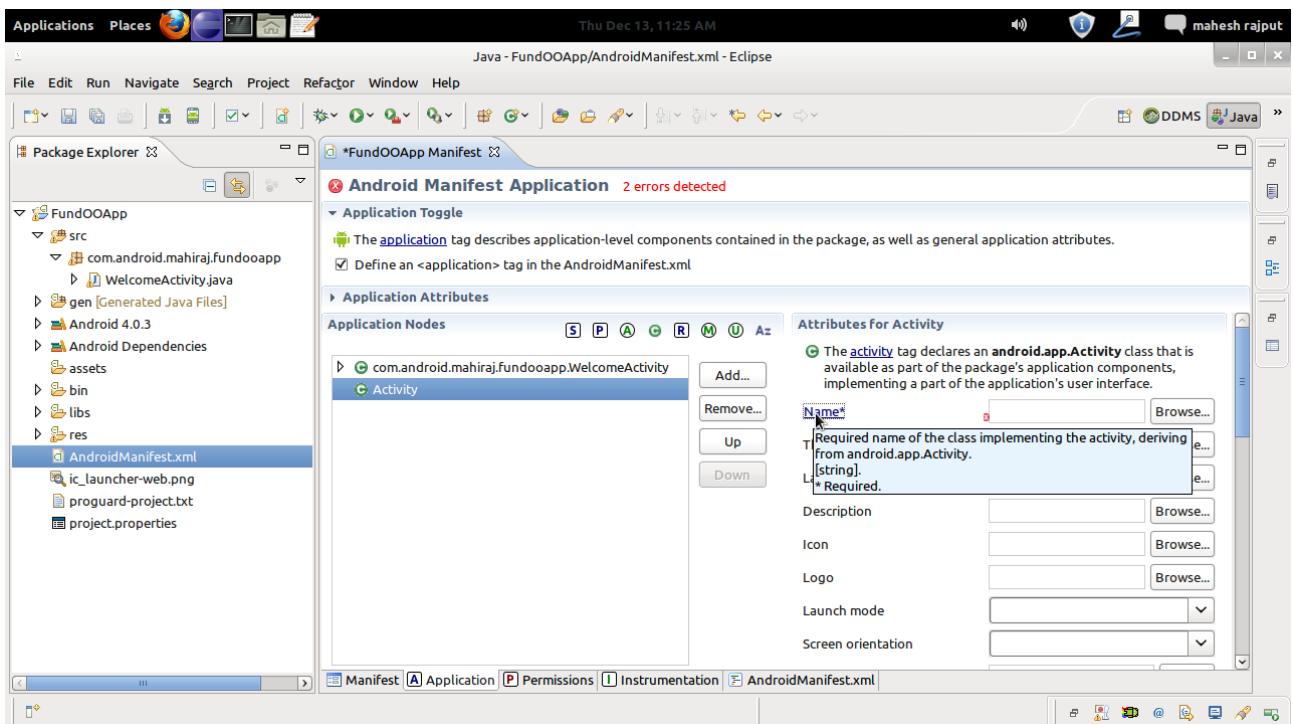


Figure 13. Creating second Activity class. Click on **Add** select Activity and click on Name as

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shown in the fig 13.

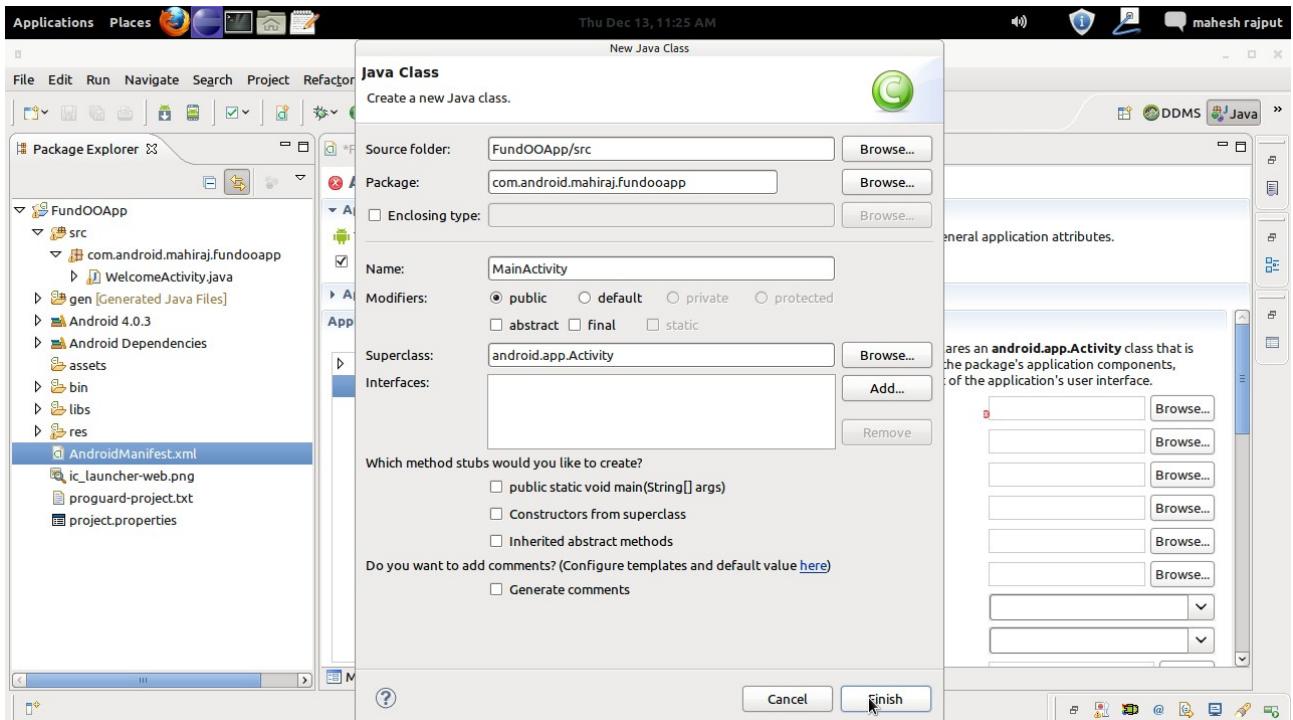


Figure 14. Name: **MainActivity** and just click on **finish**.

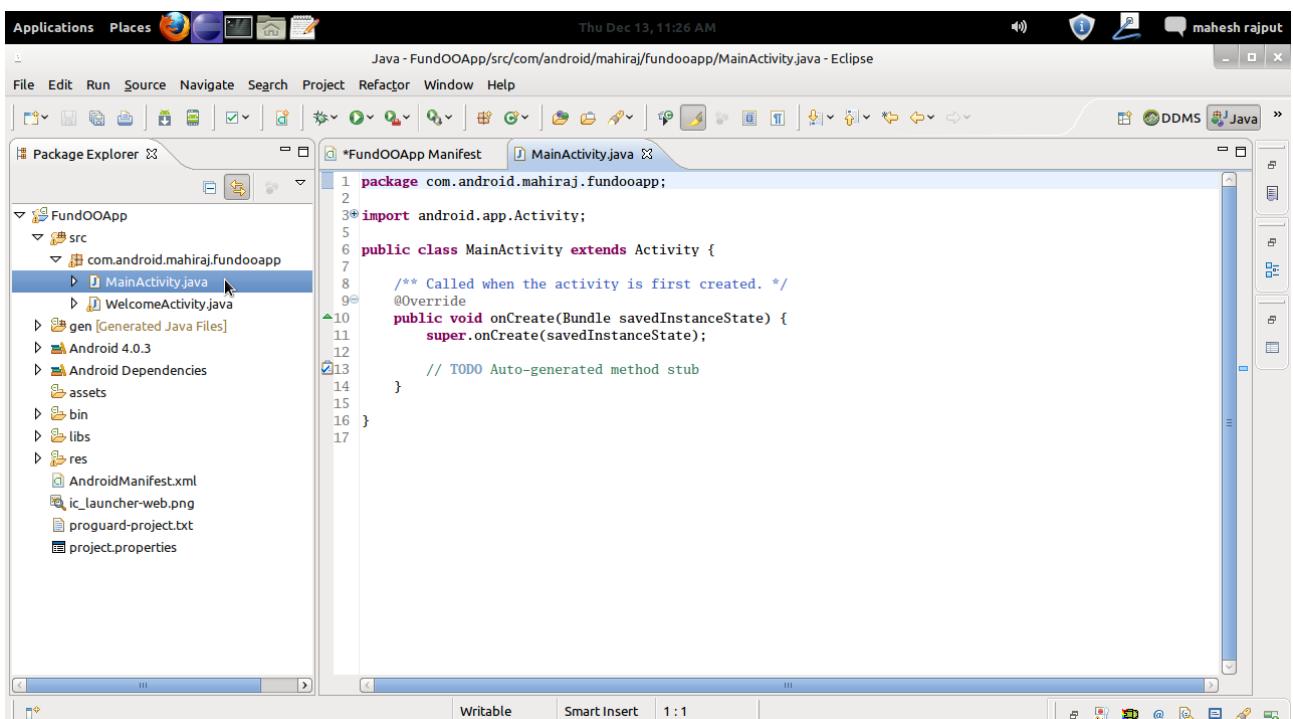


Figure 15. shows Default code in seconcond Activity class ie **MainActivity**.

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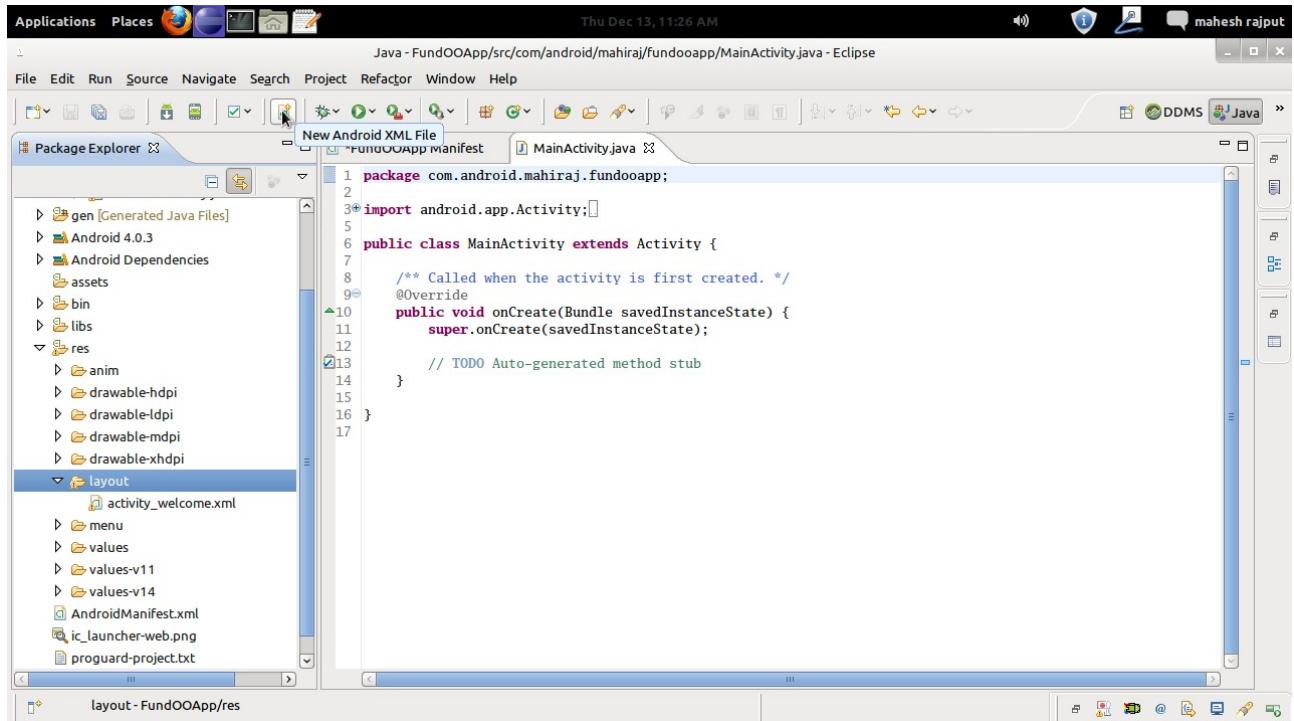


Figure 16. shows creaing a new layout xml file for MainActivity class.

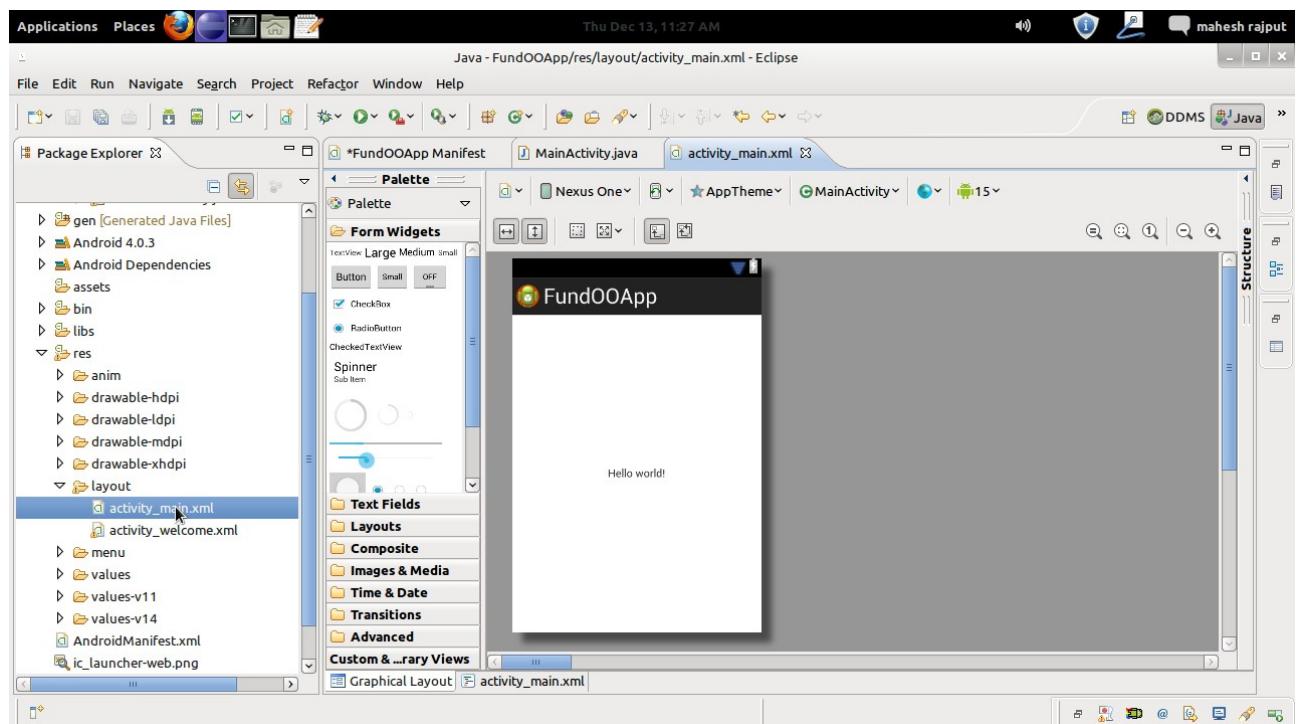


Figure 17. shows defult layout created for **activity_main.xml**. Now edit this xml file put ImageView in it.

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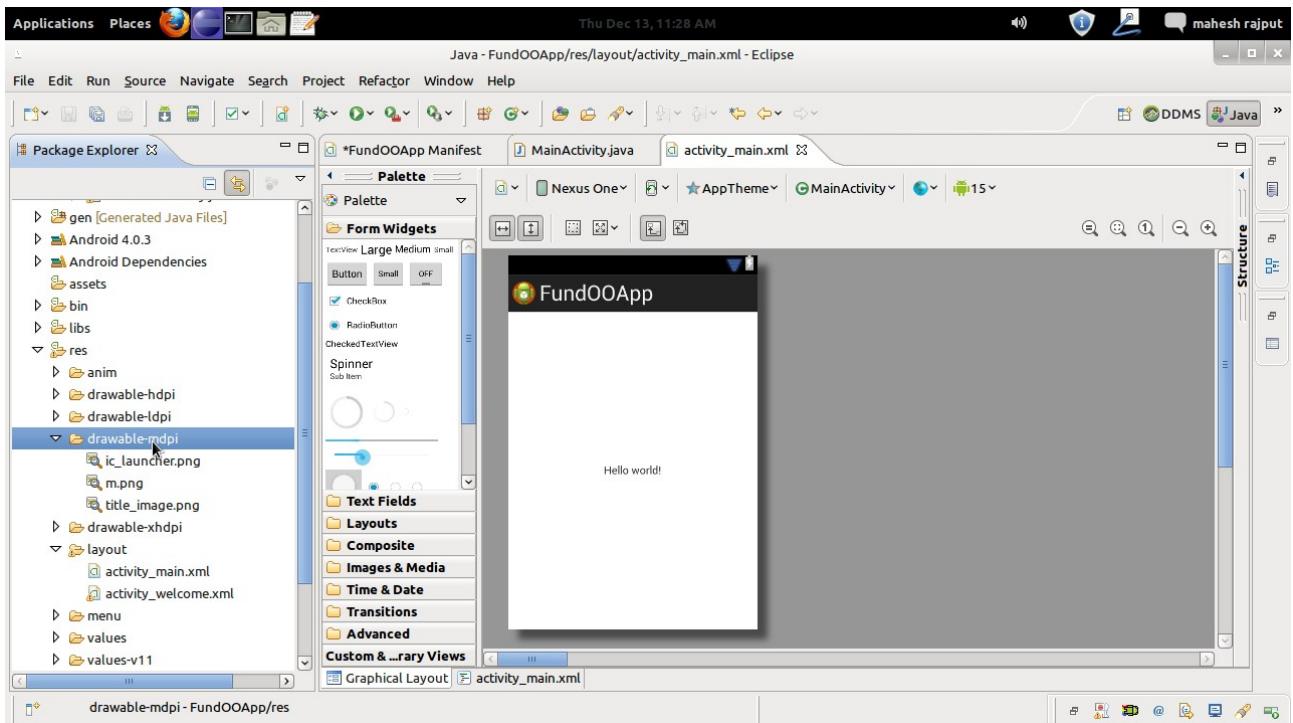


Figure 18. shows adding image files in the drawable folder which are going to display on the second page ie on MainActivity.

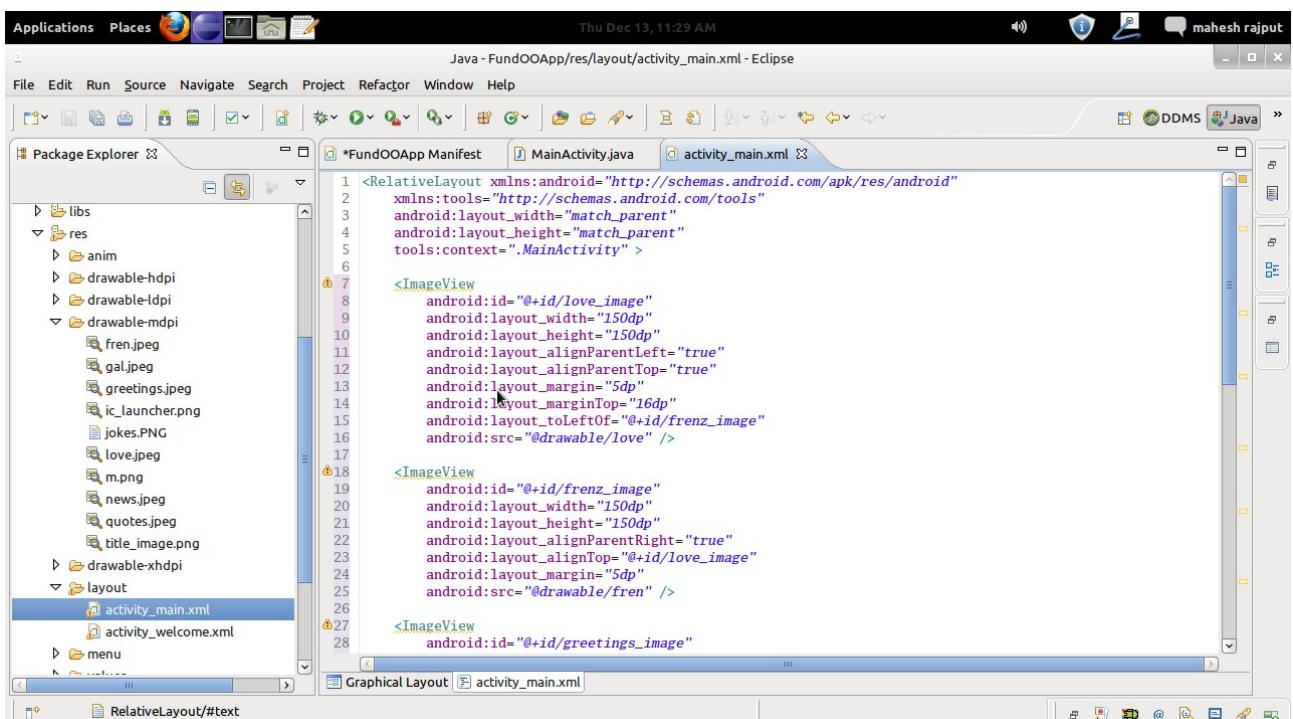


Figure 19. shows adding image files in the drawable folder which are going to display on the second page ie on MainActivity. Refer image file in the ImageView of MainActivity class layout file activity_main.xml.

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activity_main.xml

```
<RelativeLayout 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=".MainActivity" >

    <ImageView
        android:id="@+id/love_image"
        android:layout_width="150dp"
        android:layout_height="150dp"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_margin="5dp"
        android:layout_marginTop="16dp"
        android:layout_toLeftOf="@+id/frenz_image"
        android:src="@drawable/love" />

    <ImageView
        android:id="@+id/frenz_image"
        android:layout_width="150dp"
        android:layout_height="150dp"
        android:layout_alignParentRight="true"
        android:layout_alignTop="@+id/love_image"
        android:layout_margin="5dp"
        android:src="@drawable/fren" />

    <ImageView
        android:id="@+id/greetings_image"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:layout_alignLeft="@+id/love_image"
        android:layout_below="@+id/jokes_image"
        android:layout_marginLeft="24dp"
        android:layout_marginTop="40dp"
        android:src="@drawable/greetings" />

    <ImageView
        android:id="@+id/news_image"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:layout_alignLeft="@+id/greetings_image"
        android:layout_below="@+id/love_image"
        android:layout_margin="5dp"
        android:src="@drawable/news" />

    <ImageView
        android:id="@+id/jokes_image"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:layout_alignRight="@+id/frenz_image"
        android:layout_alignTop="@+id/news_image"
        android:layout_margin="5dp"
        android:layout_marginRight="16dp"
        android:src="@drawable/jokes" />
```

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```
<ImageView  
    android:id="@+id/quotes_image"  
    android:layout_width="100dp"  
    android:layout_height="100dp"  
    android:layout_alignLeft="@+id/jokes_image"  
    android:layout_alignTop="@+id/greetings_image"  
    android:src="@drawable/quotes" />  
  
</RelativeLayout>
```

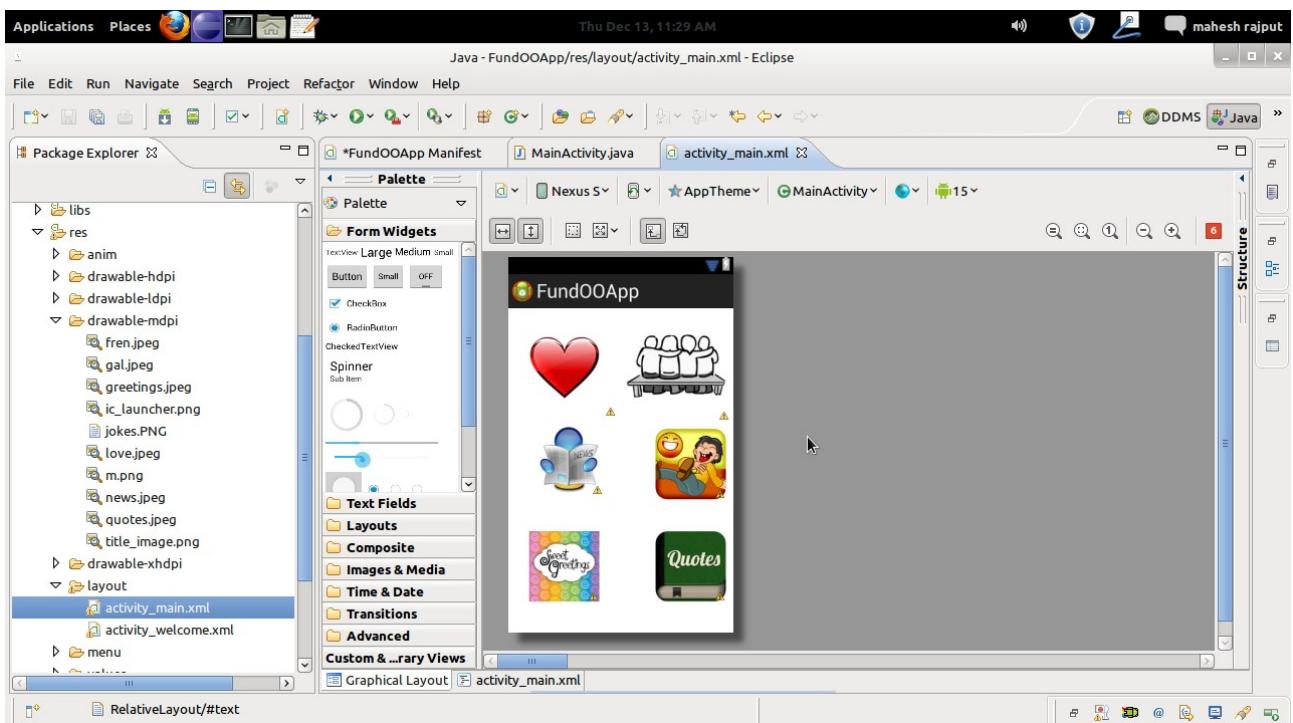


Figure 20. After adding ImageView to activity_main.xml looks like as in fig 20. Total 6 ImageView are there.

Write the below code in **MainActivity.java** class

```
package com.android.mahiraj.fundooapp;  
/**  
 * @author Mahesh Rajput  
 *  
 */  
import android.app.Activity;  
import android.content.Intent;  
import android.os.Bundle;  
import android.util.Log;  
import android.view.View;  
import android.view.View.OnClickListener;  
import android.widget.ImageView;
```

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```
public class MainActivity extends Activity {

    private static final String TAG = "MainActivity";
    ImageView love;
    ImageView frenz;
    ImageView puzzle;
    ImageView jokes;
    ImageView greetings;
    ImageView quotes;

    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        getResourceIDs();

        // Setting onClick event handling Listener to the images...
        setOnClickListener();

        log("onCreate()");
    }

    private void getResourceIDs() {

        love = (ImageView) findViewById(R.id.love_image);
        frenz = (ImageView) findViewById(R.id.frenz_image);
        puzzle = (ImageView) findViewById(R.id.puzzle_image);
        jokes = (ImageView) findViewById(R.id.jokes_image);
        greetings = (ImageView) findViewById(R.id.greetings_image);
        quotes = (ImageView) findViewById(R.id.quotes_image);

        log("getResourceIDs()");
    }

    private void setOnClickListener() {

        log("setOnClickListener()");
        love.setOnClickListener(new OnClickListener() {

            @Override
            public void onClick(View v) {
                Intent i = new Intent(MainActivity.this,
                        CategoryListActivity.class);
                i.putExtra("ImageView", v.getId());
                startActivity(i);
            }
        });
    }
}
```

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```
});  
frenz.setOnClickListener(new OnClickListener() {  
  
    @Override  
    public void onClick(View v) {  
        Intent i = new Intent(MainActivity.this,  
                            CategoryListActivity.class);  
        i.putExtra("ImageView", v.getId());  
        startActivity(i);  
    }  
});  
  
puzzle.setOnClickListener(new OnClickListener() {  
  
    @Override  
    public void onClick(View v) {  
        Intent i = new Intent(MainActivity.this,  
                            CategoryListActivity.class);  
        i.putExtra("ImageView", v.getId());  
        startActivity(i);  
    }  
});  
  
jokes.setOnClickListener(new OnClickListener() {  
  
    @Override  
    public void onClick(View v) {  
        Intent i = new Intent(MainActivity.this,  
                            CategoryListActivity.class);  
        i.putExtra("ImageView", v.getId());  
        startActivity(i);  
    }  
});  
  
greetings.setOnClickListener(new OnClickListener() {  
  
    @Override  
    public void onClick(View v) {  
        Intent i = new Intent(MainActivity.this,  
                            CategoryListActivity.class);  
        i.putExtra("ImageView", v.getId());  
        startActivity(i);  
    }  
});  
  
quotes.setOnClickListener(new OnClickListener() {  
  
    @Override  
    public void onClick(View v) {  
        Intent i = new Intent(MainActivity.this,
```

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```
        CategoryListActivity.class);
        i.putExtra("ImageView", v.getId());
        startActivity(i);
    }
});

}

public void log(String msg) {
    Log.d(TAG, msg);
}

}
```

Now after WelcomeActivity and mainActivity class, create a new custom Application class which extends **android.app.Application**.

This class is to hold or to share the common data to the whole Application. ie All components(Activity, Service, BraoadCast Reciever) present in the Application can share the data.

FundOOApplication class extends Application class.

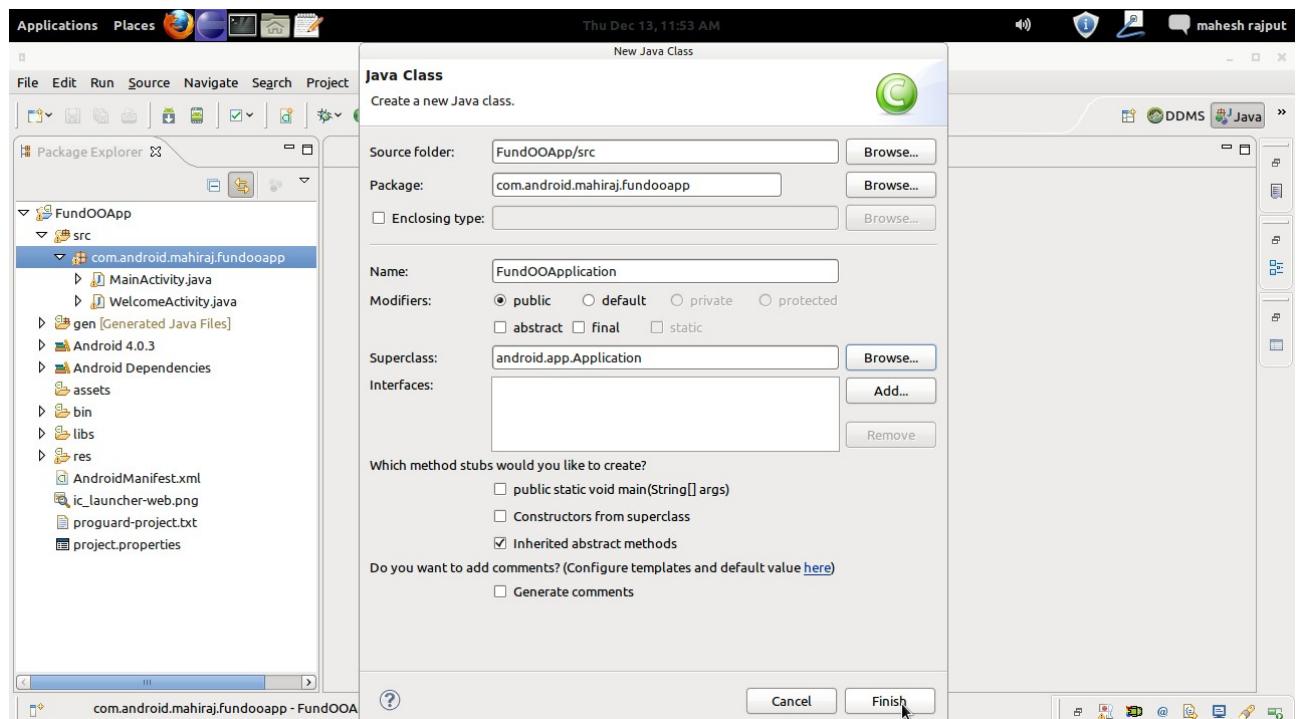


Figure 21. shows creating a class called **FundOOApp** extends the super class called **Application**.

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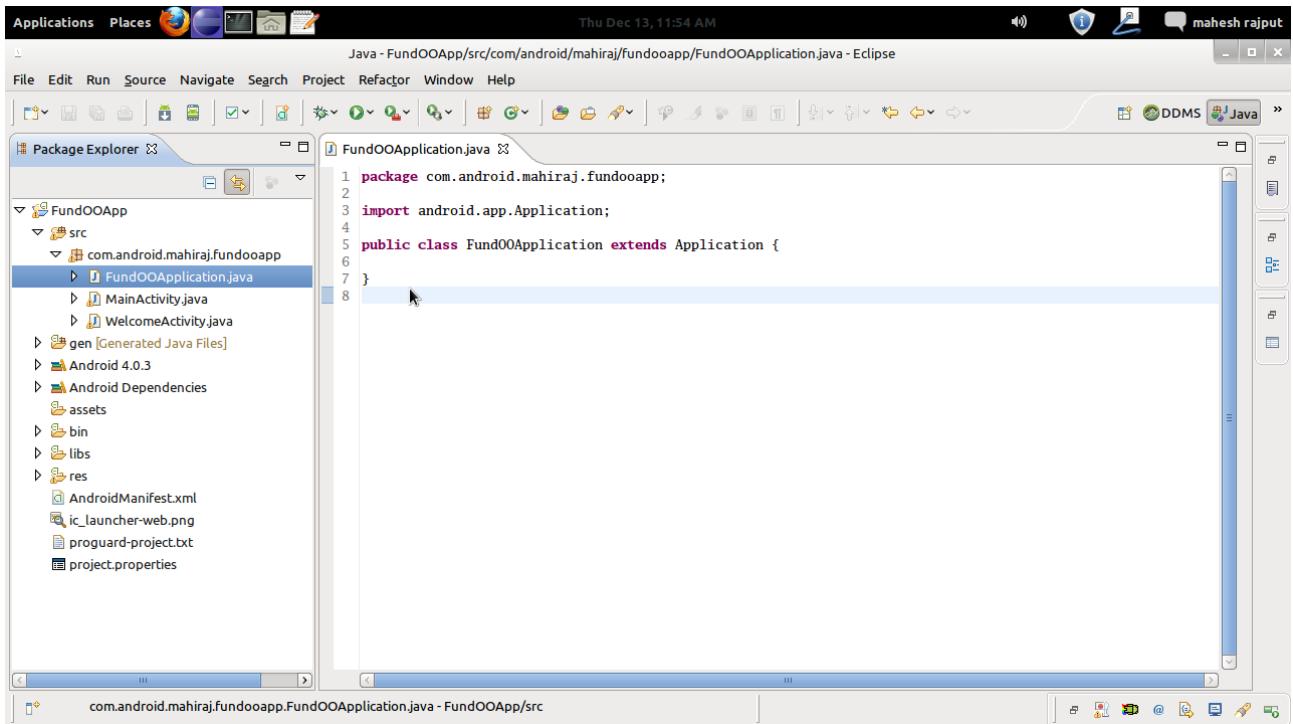


Figure 22. shows default class called **FundOOApplication** extends the super class called **Application**.

Now, add new package **com.android.mahiraj.metadata** under **src** folder. Add 2 classes named **Category** and **CategoryContents** respectively.

Category class having setter and getter methods to hold data value for different categories like jokes, love, news, quotes and so on.

CategoryContents class having setter and getter methods to hold contents of different categories like jokes, love, news, quotes and so on.

After creating these two classes, In Application class cache data values by using the core java concept called Collection framework. Ie By using List and Map cache the data values which is coming from the server.

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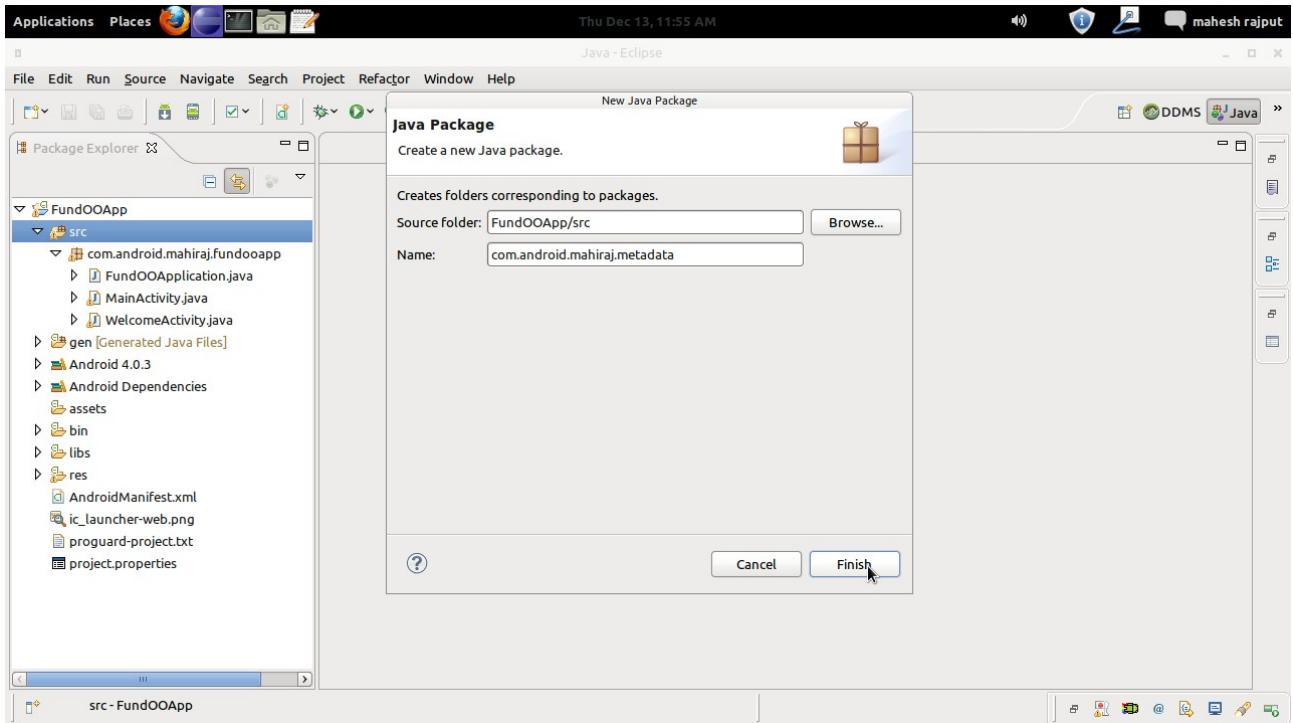


Figure 23. shows creating new package **com.android.mahiraj.metadata**

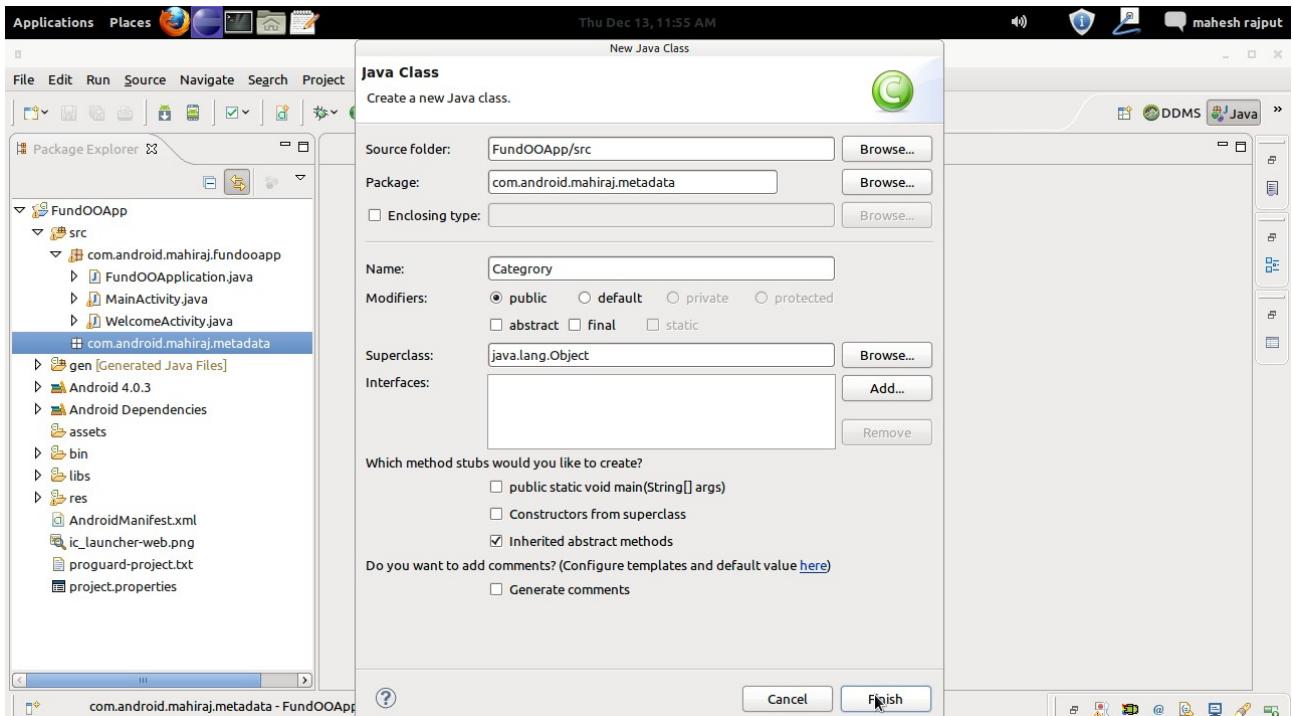


Figure 24. shows creating new Category class in **com.android.mahiraj.metadata** package.

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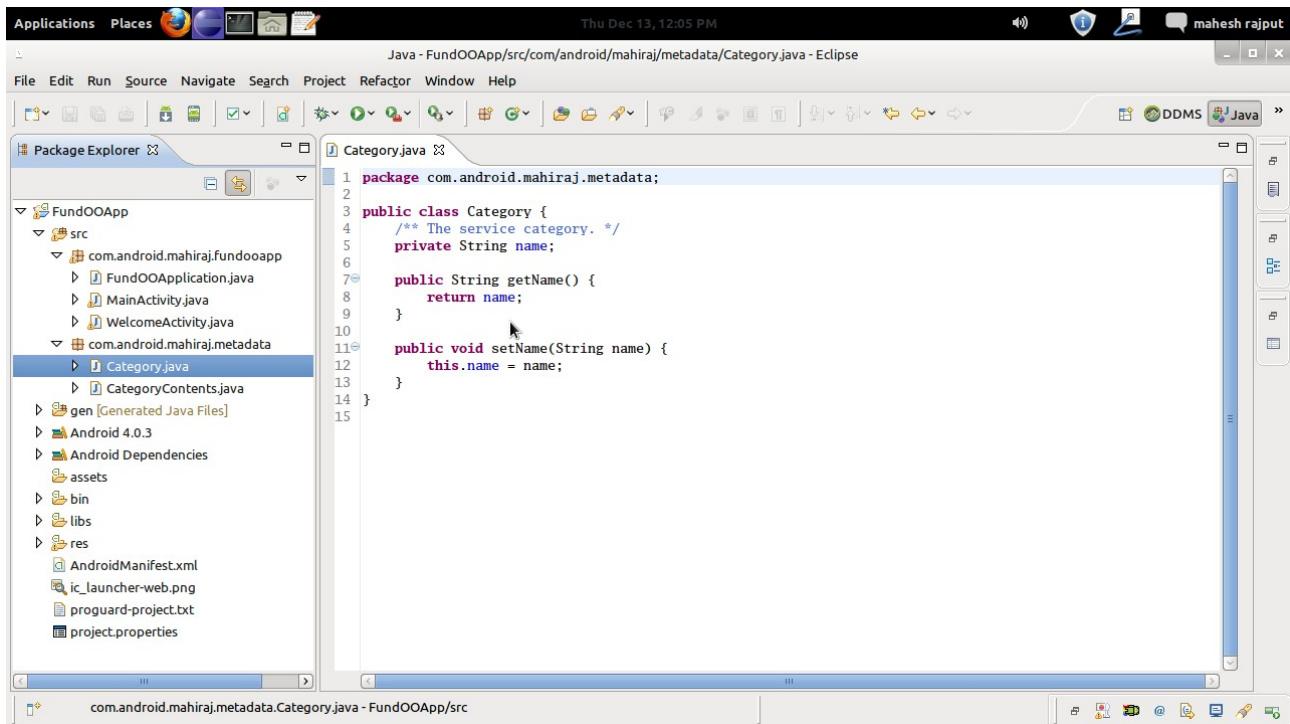


Figure 25. Category.java

Category.java

```
package com.android.mahiraj.metadata;
```

```
public class Category {
```

```
    /** The service category. */
```

```
    private String name;
```

```
    public String getName() {
```

```
        return name;
```

```
}
```

```
    public void setName(String name) {
```

```
        this.name = name;
```

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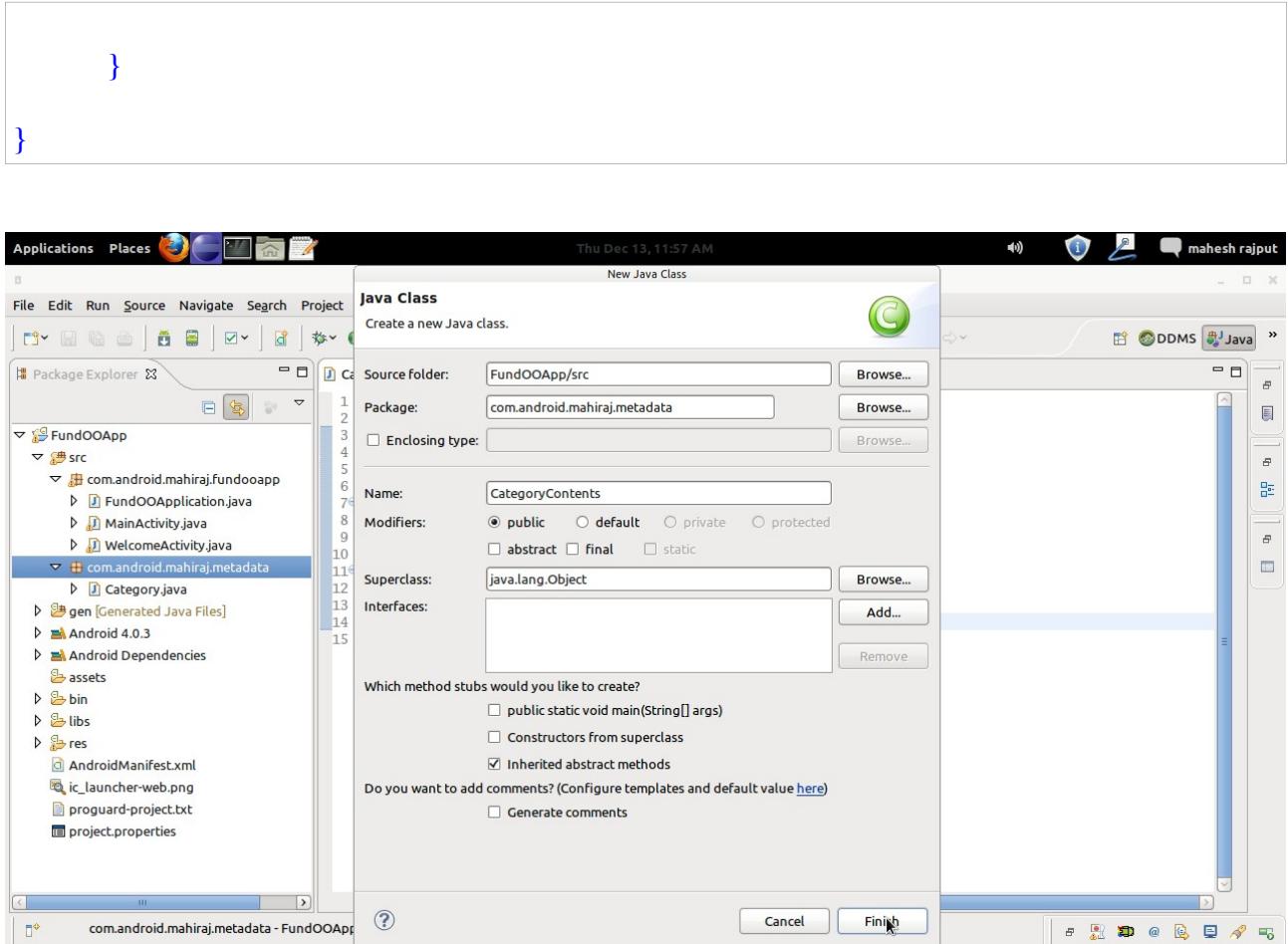


Figure 26. shows creating new CategoryContents class in com.android.mahiraj.metadata package.

CategoryContents.java

```
package com.android.mahiraj.metadata;\n\n/**\n * @author Mahesh Rajput\n *\n */\n\npublic class CategoryContents {\n    private String mCategoryContents;
```

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```
public String getmCategoryContents() {  
  
    return mCategoryContents;  
  
}  
  
  
public void setmCategoryContents(String mCategoryContents) {  
  
    this.mCategoryContents = mCategoryContents;  
  
}  
  
}
```

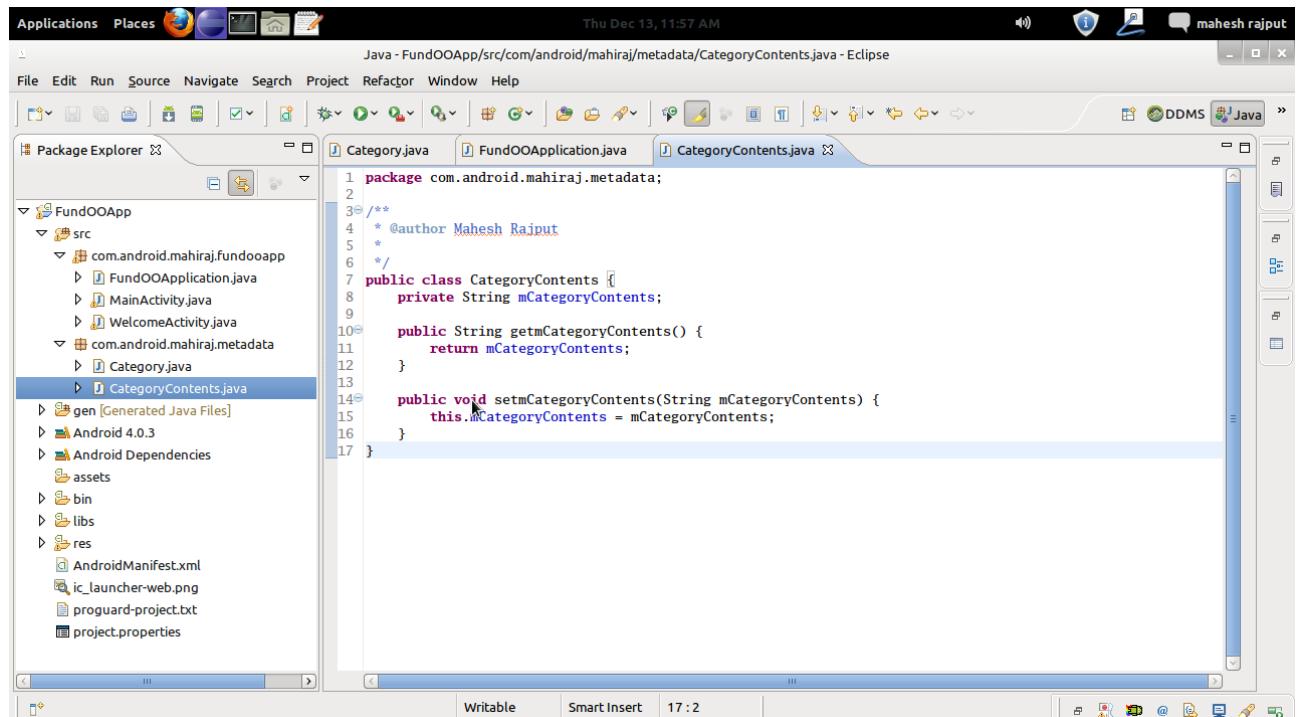


Figure 27. CategoryContents.java

Write below code in **FundOOApplication** to cache the data which is coming from server.

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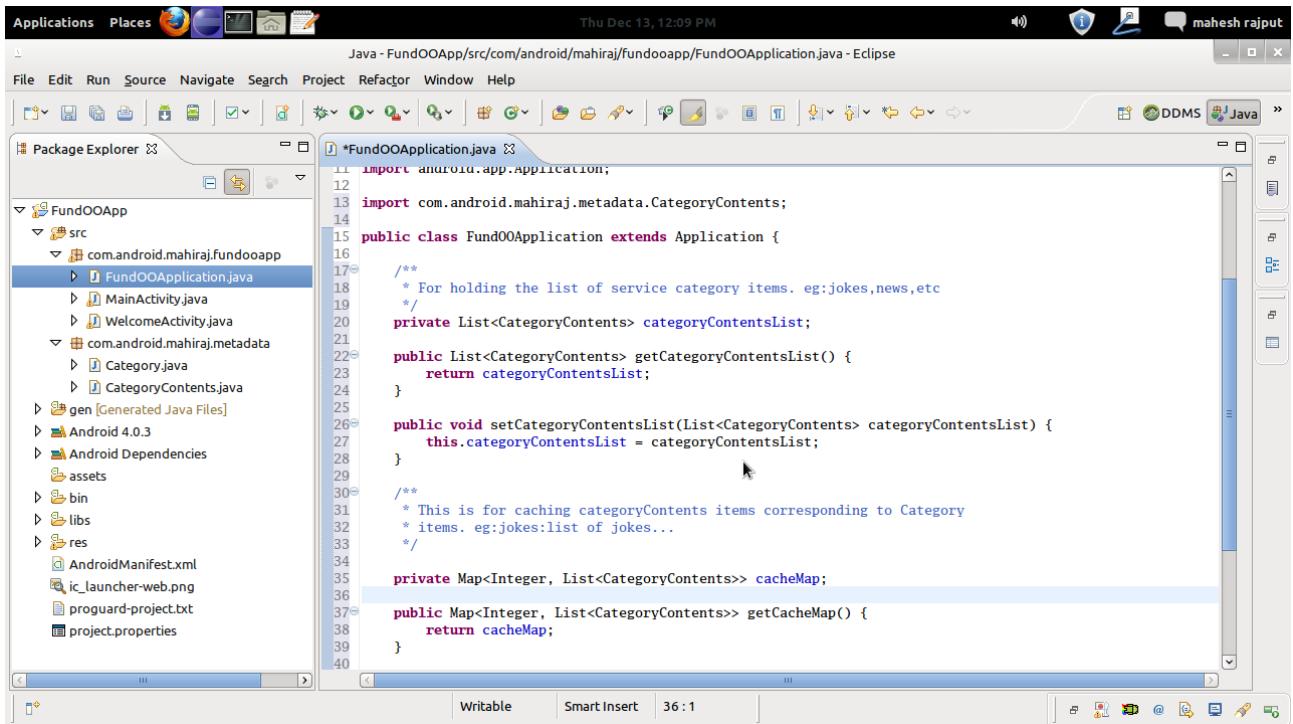


Figure 28.FundOOApplication.java

```
package com.android.mahiraj.fundoapp;

/**
 * @author Mahesh Rajput
 */
import java.util.ArrayList;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import android.app.Application;

import com.android.mahiraj.metadata.CategoryContents;

public class FundOOApplication extends Application {

    /**
     * For holding the list of service category items. eg:jokes,news,etc
     */
    private List<CategoryContents> categoryContentsList;

    public List<CategoryContents> getCategoryContentsList() {
        return categoryContentsList;
    }

    public void setCategoryContentsList(List<CategoryContents> categoryContentsList) {
        this.categoryContentsList = categoryContentsList;
    }
}
```

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```
}

/**
 * This is for caching categoryContents items corresponding to Category
 * items. eg:jokes:list of jokes...
 */

private Map<Integer, List<CategoryContents>> cacheMap;

public Map<Integer, List<CategoryContents>> getCacheMap() {
    return cacheMap;
}

public void setCacheMap(Map<Integer, List<CategoryContents>> cacheMap) {
    this.cacheMap = cacheMap;
}

@Override
public void onCreate() {
    super.onCreate();
    this.categoryContentsList = new ArrayList<CategoryContents>();
    this.cacheMap = new HashMap<Integer, List<CategoryContents>>();
}
}
```

Now in our Application the following classes are present:

package com.android.mahiraj.fundooapp

--WelcomeActivity class

--MainActivity class

--FundOOApplication class

package com.android.mahiraj.metadata

--Category class

--CategoryContents class

Create one more Activity class ie **CategoryListActivity**. Which is going to display the list of jokes, love mgs, quotes, news etc individually.

Figure 29-33 :shows how to open the `AndroidManifest.xml` file and add an Activity class in our Application ie `CategoryListActivity` class.

FundOOApp

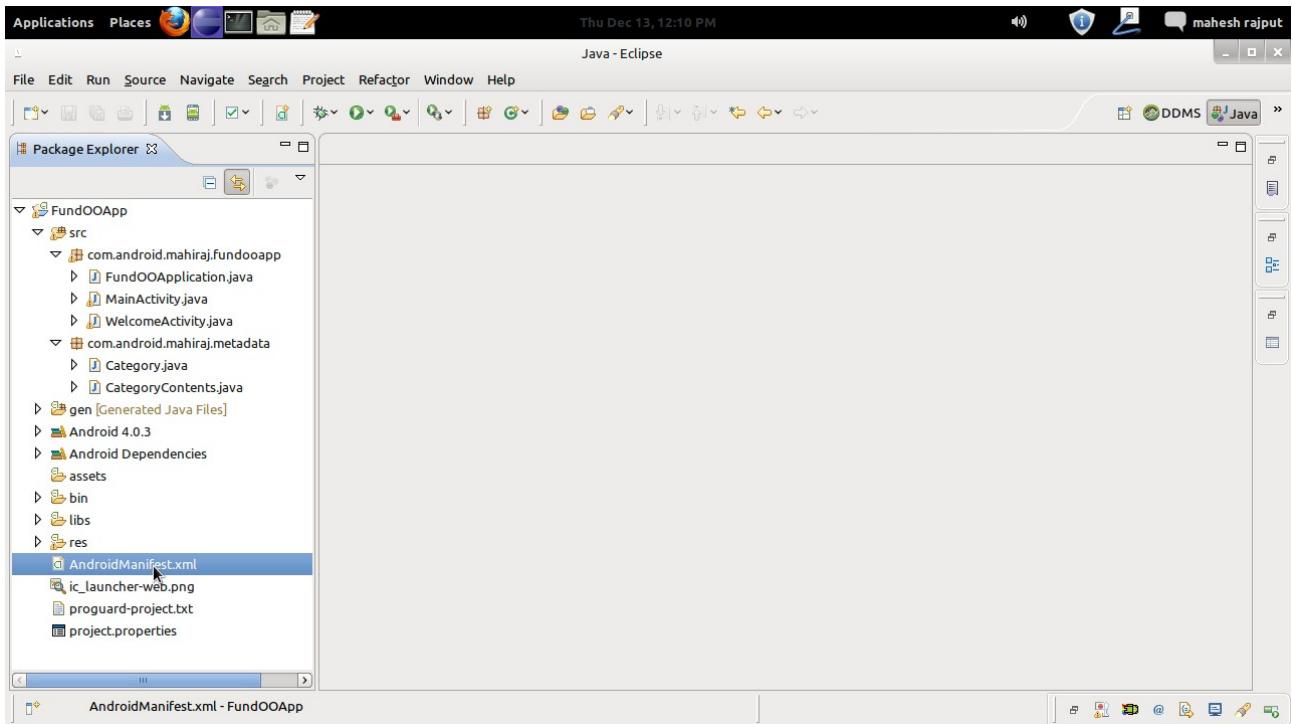


Figure 29.

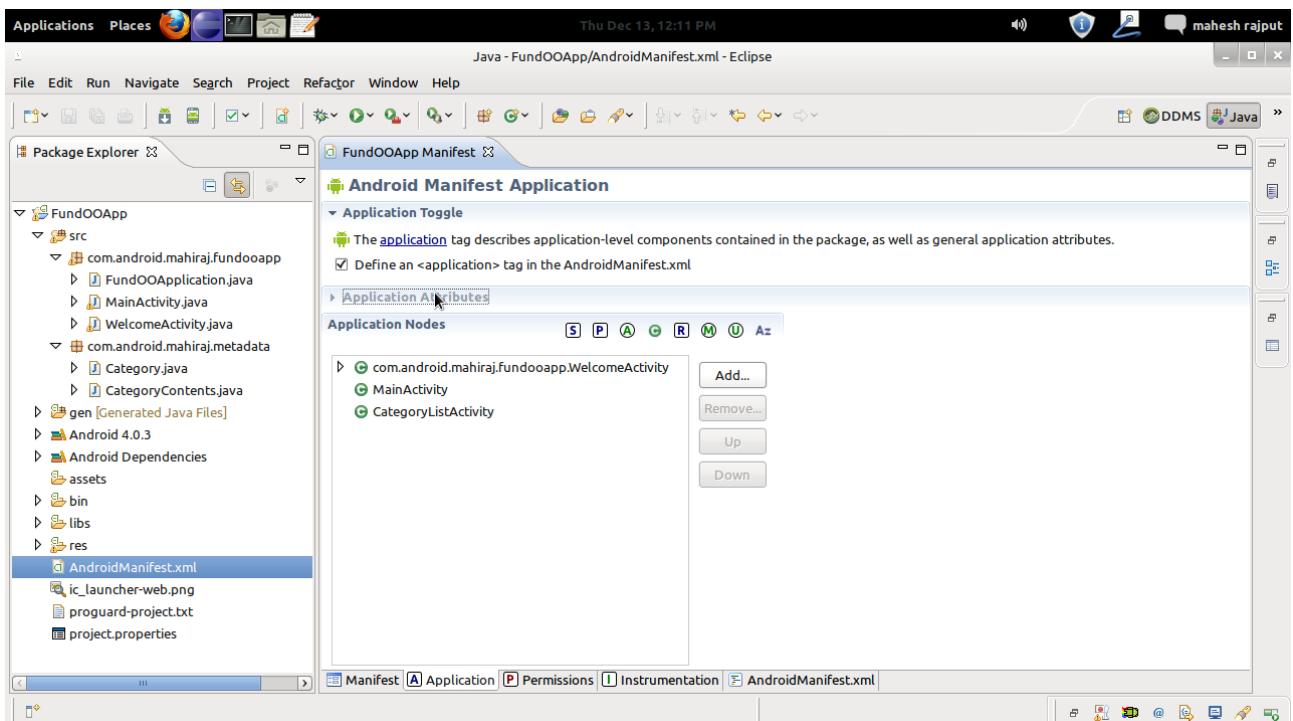


Figure 30.

FundOOApp

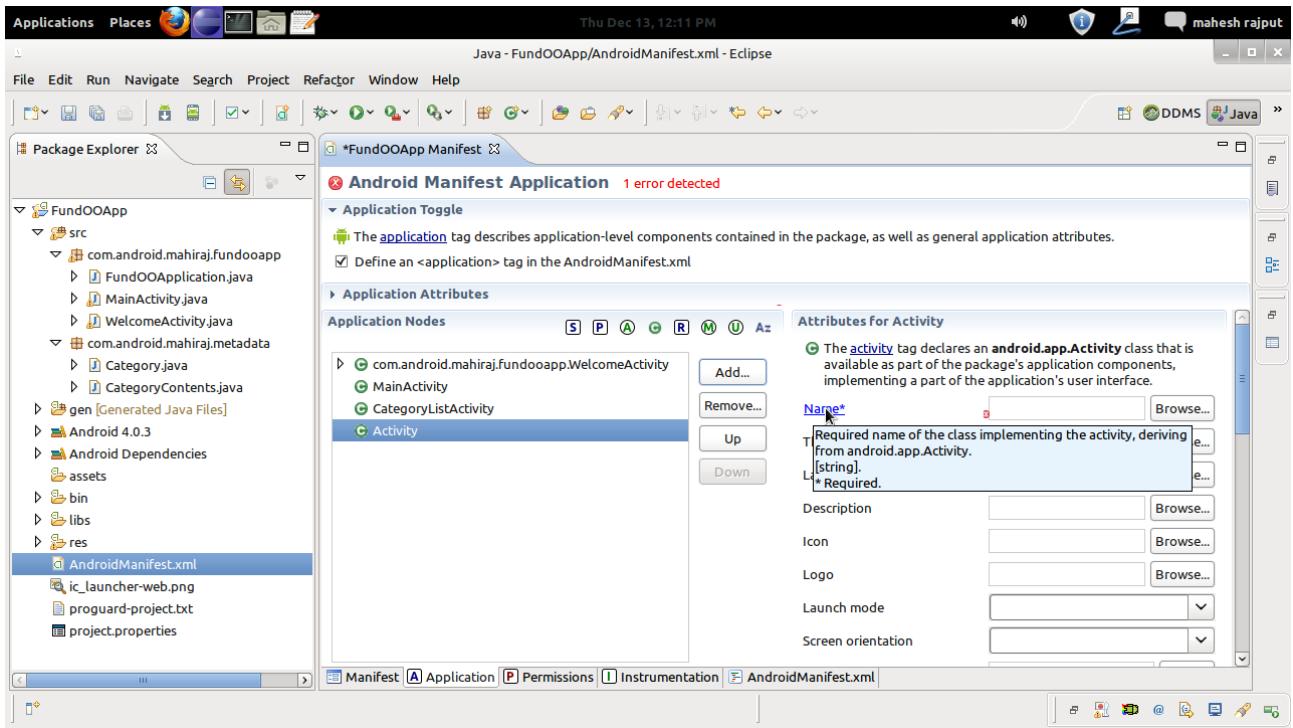


Figure 31. click on [Name.](#)

FundOOApp

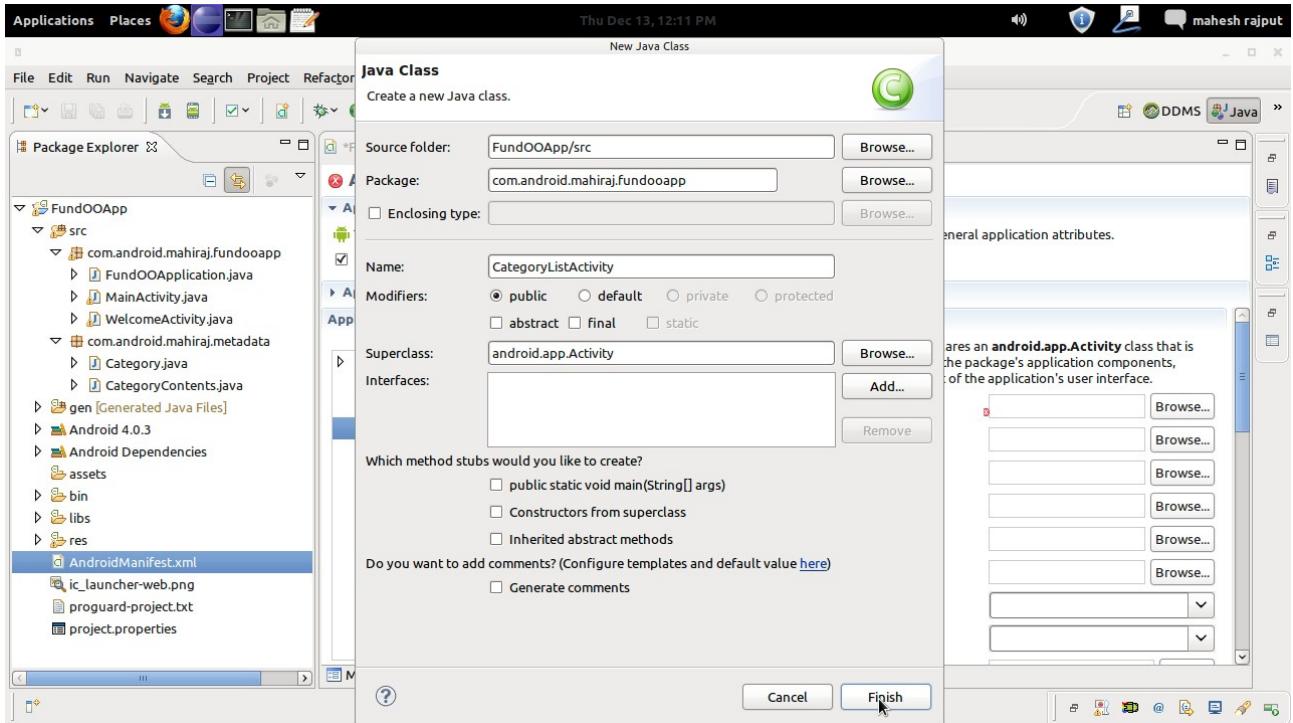


Figure 32. enter the Activity class name.

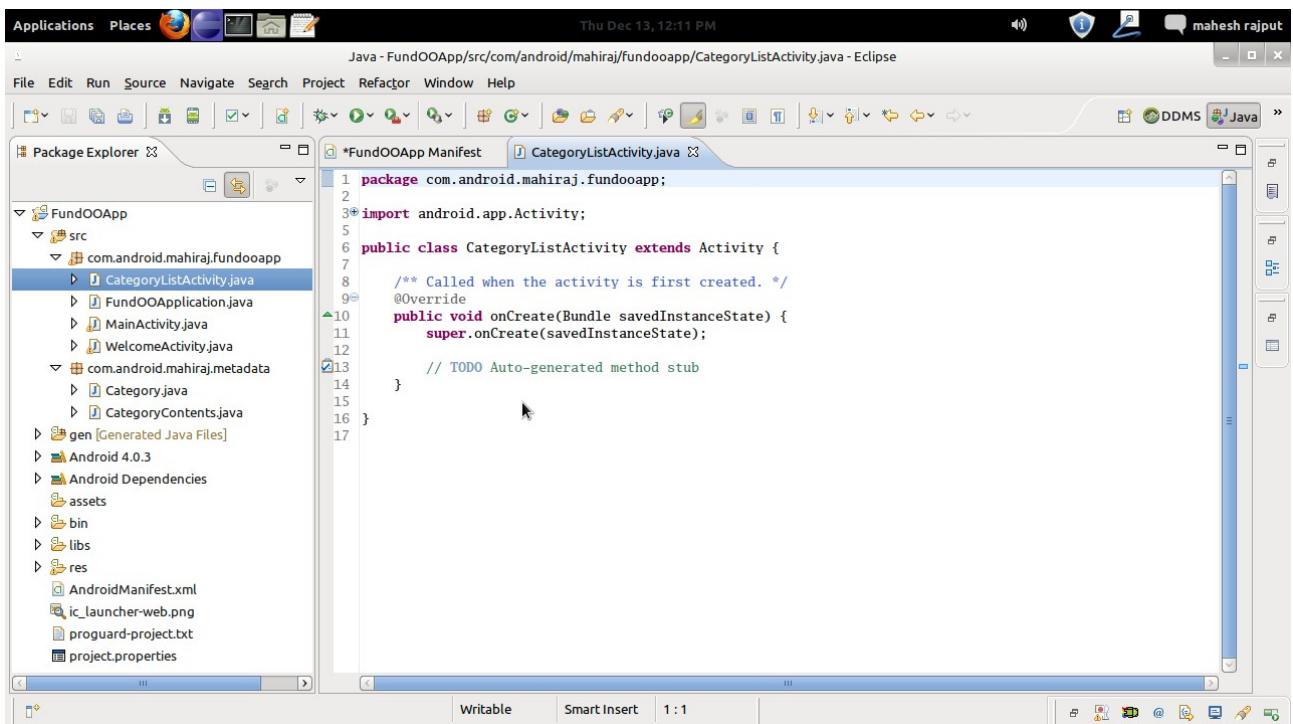


Figure 33.shows default Activity class code.

CategoryListActivity.java:

In this class there is logic to get the data from the server and placing data values in the ListView. Used **AsyncTask** class(creating separate thread for background web service) to get data from the server in the form of **json objects**.

FundOOApp

By using **gson API's** which is already included in the Android SDK we can parse the json objects. There separate custom class called **JSONParser.java** which is actually doing the background process and giving json Objects to CategoryListActivity class. Parsing json Objects into string format is taken care by the CategoryListActivity class.

CategoryListActivity.java

```
package com.android.mahiraj.fundooapp;
/**
 * @author Mahesh Rajput
 *
 */
import java.util.ArrayList;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import org.json.JSONArray;
import org.json.JSONException;
import org.json.JSONObject;

import android.annotation.SuppressLint;
import android.app.ListActivity;
import android.app.ProgressDialog;
import android.content.Context;
import android.content.Intent;
import android.net.ConnectivityManager;
import android.net.NetworkInfo;
import android.os.AsyncTask;
import android.os.Bundle;
import android.provider.Settings;
import android.util.DisplayMetrics;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

import com.android.mahiraj.metadata.CategoryContents;

/**
 * @author mahesh rajput
 */
// TODO: Auto-generated Javadoc
/**
 * The Class CategoryListActivity.
 */
```

FundOOApp

```
/*
public class CategoryListActivity extends ListActivity {

    /** The list view.*/
    ListView listView;

    /** The metrics.*/
    private DisplayMetrics metrics;

    /** The progress dialog.*/
    private ProgressDialog progressDialog;

    /** The json.*/
    JSONObject json;

    /** The app.*/
    FundOOApplication app;

    /** The category contents.*/
    private List<CategoryContents> categoryContents;

    /** The cache map_category.*/
    private Map<String, List<CategoryContents>> cacheMap_category;

    /** The puzzle ans.*/
    private List<String> puzzleAns;
    // contacts JSONArray
    /** The json array obj.*/
    JSONArray jsonArrayObj = null;

    /** The view id.*/
    int viewID;

    /** The intent.*/
    Intent intent;

    /** The con mgr.*/
    ConnectivityManager conMgr;

    /** The active network.*/
    NetworkInfo activeNetwork;

    /**
     * Called when the activity is first created.
     *
     * @param savedInstanceState the saved instance state
     */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

FundOOApp

```
// for animation...
metrics = new DisplayMetrics();
getWindowManager().getDefaultDisplay().getMetrics(metrics);

intent = getIntent();
viewID = intent.getIntExtra("ImageView", 0);

categoryContents = new ArrayList<CategoryContents>();
cacheMap_category = new HashMap<String, List<CategoryContents>>();
puzzleAns = new ArrayList<String>();
app = (FundOOApplication) this.getApplication();
progressDialog = new ProgressDialog(CategoryListActivity.this);
progressDialog.setCancelable(false);
progressDialog
        .setMessage("Getting data from the server, please wait...");

conMgr = (ConnectivityManager)
getSystemService(Context.CONNECTIVITY_SERVICE);
activeNetwork = conMgr.getActiveNetworkInfo();

if (app.getCacheMap().size() == 0) {

    chechNetworkConnection();
} else {

    displayCachedData();
}

/***
 * Chech network connection.
 */
private void chechNetworkConnection() {

    if (activeNetwork != null && activeNetwork.isConnected()) {
        // notify user you are online
        new CategoryContentsTask().execute();
    } else {
        // notify user you are not online
        callMobileNetworkSettings();
    }
}

/***
 * Call mobile network settings.
 */
private void callMobileNetworkSettings() {
```

FundOOApp

```
Intent i = new Intent(Settings.ACTION_WIRELESS_SETTINGS);
startActivity(i);
Toast.makeText(
        CategoryListActivity.this,
        "User you are not online. Please enable data access over mobile
network... ",
        Toast.LENGTH_LONG).show();

}

/***
 * Display cached data.
 */
private void displayCachedData() {

    if (getMapKeyContents() == null) {
        checkNetworkConnection();
    } else {
        resetContents(getMapKeyContents());
    }

}

/***
 * Gets the map key contents.
 *
 * @return the map key contents
 */
private List<CategoryContents> getMapKeyContents() {

    List<CategoryContents> categoryContent = null;
    switch (viewID) {
        case R.id.love_image:
            cacheMap_category = app.getCacheMap();
            categoryContent = cacheMap_category.get("LOVE");
            break;

        case R.id.frenz_image:
            cacheMap_category = app.getCacheMap();
            categoryContent = cacheMap_category.get("FRENZ");
            break;

        case R.id.greetings_image:
            cacheMap_category = app.getCacheMap();
            categoryContent = cacheMap_category.get("GREETINGS");
            break;

        case R.id.puzzle_image:
            cacheMap_category = app.getCacheMap();
            categoryContent = cacheMap_category.get("PUZZLE");
            break;
    }
}
```

FundOOApp

```
        break;

    case R.id.quotes_image:
        cacheMap_category = app.getCacheMap();
        categoryContent = cacheMap_category.get("QUOTES");
        break;

    case R.id.jokes_image:
        cacheMap_category = app.getCacheMap();
        categoryContent = cacheMap_category.get("JOKES");
        break;

    default:
        Toast.makeText(getApplicationContext(),
                "ImageView reference incorrect..!!!",
        Toast.LENGTH_SHORT)
                .show();
        break;
    }
    return categoryContent;
}

/***
 * Reset contents.
 *
 * @param categoryContents the category contents
 */
private void resetContents(List<CategoryContents> categoryContents) {

    setListAdapter(new CustomListAdapter(CategoryListActivity.this,
            metrics, categoryContents));
    listView = getListView();
    listView.setTextFilterEnabled(true);
    listView.setBackgroundResource(R.drawable.gal);
    listView.setOnItemClickListener(new OnItemClickListener() {

        @Override
        public void onItemClick(AdapterView<?> parent, View view,
                int position, long id) {

            TextView tv = (TextView) view.findViewById(R.id.listItemText);
            if (viewID == R.id.puzzle_image) {
                Intent i = new Intent(CategoryListActivity.this,
                        PuzzleActivity.class);
                i.putExtra("position", position);
                i.putExtra("puzzle", tv.getText());
                startActivity(i);
            } else {
                Intent i = new Intent(CategoryListActivity.this,
```

FundOOApp

```
        ItemDetailsActivity.class);
        i.putExtra("text", tv.getText());
        startActivity(i);
    }
}

/**
 * The Class CategoryContentsTask.
 */
@SuppressWarnings("UseValueOf")
private class CategoryContentsTask extends
    AsyncTask<String, Void, List<CategoryContents>> {

    /* (non-Javadoc)
     * @see android.os.AsyncTask#onPreExecute()
     */
    @Override
    protected void onPreExecute() {
        progressDialog.show();

    }

    /* (non-Javadoc)
     * @see android.os.AsyncTask#doInBackground(Params[])
     */
    @Override
    protected List<CategoryContents> doInBackground(String... params) {
        // Creating JSON Parser instance
        JSONParser jParser = new JSONParser();

        switch (viewID) {

            case R.id.love_image:
                // url to make request
                String love = "http://192.168.1.11/love.json";
                // getting JSON string from URL
                json = jParser.getJSONFromUrl(love);

                // Getting Array of Contents
                try {
                    jsonArrayObj = json.getJSONArray("love");
                } catch (JSONException e1) {
                    e1.printStackTrace();
                }
                break;

            case R.id.frenz_image:
                String frenz = "http://192.168.1.11/frenz.json";
                break;
        }
    }
}
```

FundOOApp

```
        json = jParser.getJSONFromUrl(frenz);

        try {
            jsonArrayObj = json.getJSONArray("frenz");
        } catch (JSONException e1) {
            e1.printStackTrace();
        }
        break;

    case R.id.greetings_image:
        String greetings = "http://192.168.1.11/greetings.json";
        json = jParser.getJSONFromUrl(greetings);

        try {
            jsonArrayObj = json.getJSONArray("greets");
        } catch (JSONException e1) {
            e1.printStackTrace();
        }
        break;

    case R.id.puzzle_image:
        String puzzle = "http://192.168.1.11/puzzle.json";
        json = jParser.getJSONFromUrl(puzzle);

        try {
            jsonArrayObj = json.getJSONArray("puzzle");
            // looping through All Contents
            for (int i = 0; i < jsonArrayObj.length(); i++) {

                JSONArray jArray = jsonArrayObj.getJSONArray(i);
                CategoryContents cc = new CategoryContents();
                cc.setmCategoryContents(jArray.getJSONObject(0)
                        .getString("ques"));
                categoryContents.add(cc);

            puzzleAns.add(jArray.getJSONObject(1).getString("ans"));
            app.setPuzzleAns(puzzleAns);

        }
        return categoryContents;

    } catch (JSONException e1) {

        e1.printStackTrace();
    }
    break;

    case R.id.quotes_image:
        String quotes = "http://192.168.1.11/quotes.json";
        json = jParser.getJSONFromUrl(quotes);
```

FundOOApp

```
try {
    jsonArrayObj = json.getJSONArray("quotes");
} catch (JSONException e1) {

    e1.printStackTrace();
}
break;

case R.id.jokes_image:
    String jokes = "http://192.168.1.11/jokes.json";
    json = jParser.getJSONFromUrl(jokes);

    try {
        jsonArrayObj = json.getJSONArray("jokes");
    } catch (JSONException e1) {
        e1.printStackTrace();
    }
    break;

default:
    Toast.makeText(getApplicationContext(), "Clik on the image..!!!",
        Toast.LENGTH_SHORT).show();
    break;
}

try {

    // looping through All Contents
    for (int i = 0; i < jsonArrayObj.length(); i++) {

        JSONObject jObj = jsonArrayObj.getJSONObject(i);
        CategoryContents cc = new CategoryContents();
        cc.setmCategoryContents(jObj.getString("content"));
        categoryContents.add(cc);
    }
} catch (JSONException e) {
    e.printStackTrace();
}
return categoryContents;
}

/* (non-Javadoc)
 * @see android.os.AsyncTask#onPostExecute(java.lang.Object)
 */
@Override
protected void onPostExecute(List<CategoryContents> categoryContents) {
    if (progressDialog.isShowing()) {
        progressDialog.dismiss();
    }
}
```

FundOOApp

```
if (!categoryContents.isEmpty()) {
    app.setCategoryContentsList(categoryContents);
    switch (viewID) {
        case R.id.love_image:
            cacheMap_category.put("LOVE", categoryContents);
            app.setCacheMap(cacheMap_category);
            break;
        case R.id.frenz_image:
            cacheMap_category.put("FRENZ", categoryContents);
            app.setCacheMap(cacheMap_category);
            break;
        case R.id.greetings_image:
            cacheMap_category.put("GREETINGS", categoryContents);
            app.setCacheMap(cacheMap_category);
            break;
        case R.id.puzzle_image:
            cacheMap_category.put("PUZZLE", categoryContents);
            app.setCacheMap(cacheMap_category);
            break;
        case R.id.quotes_image:
            cacheMap_category.put("QUOTES", categoryContents);
            app.setCacheMap(cacheMap_category);
            break;
        case R.id.jokes_image:
            cacheMap_category.put("JOKES", categoryContents);
            app.setCacheMap(cacheMap_category);
            break;
        default:
            Toast.makeText(getApplicationContext(),
                    "Image reference invalid..!!!",
                    Toast.LENGTH_SHORT)
                .show();
            break;
    }
    resetContents(categoryContents);
}
}
```

FundOOApp

JSONParser.java

```
package com.android.mahiraj.fundooapp;
/**
 * @author Mahesh Rajput
 *
 */
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.UnsupportedEncodingException;

import org.apache.http.HttpEntity;
import org.apache.http.HttpResponse;
import org.apache.http.client.ClientProtocolException;
import org.apache.http.client.methods.HttpPost;
import org.apache.http.impl.client.DefaultHttpClient;
import org.json.JSONException;
import org.json.JSONObject;

import android.util.Log;

public class JSONParser {

    static InputStream is = null;
    static JSONObject jObj = null;
    static String json = "";

    // constructor
    public JSONParser() {

    }

    public JSONObject getJSONFromUrl(String url) {

        // Making HTTP request
        try {
            // defaultHttpClient
            DefaultHttpClient httpClient = new DefaultHttpClient();
            HttpPost httpPost = new HttpPost(url);

            HttpResponse httpResponse = httpClient.execute(httpPost);
            HttpEntity httpEntity = httpResponse.getEntity();
            is = httpEntity.getContent();

        } catch (UnsupportedEncodingException e) {
            e.printStackTrace();
        } catch (ClientProtocolException e) {
            e.printStackTrace();
        }
    }
}
```

FundOOApp

```
        } catch (IOException e) {
            e.printStackTrace();
        }

        try {
            BufferedReader reader = new BufferedReader(new InputStreamReader(
                is, "iso-8859-1"), 8);
            StringBuilder sb = new StringBuilder();
            String line = null;
            while ((line = reader.readLine()) != null) {
                sb.append(line + "\n");
            }
            is.close();
            json = sb.toString();
        } catch (Exception e) {
            Log.e("Buffer Error", "Error converting result " + e.toString());
        }

        // try parse the string to a JSON object
        try {
            jObj = new JSONObject(json);
        } catch (JSONException e) {
            Log.e("JSON Parser", "Error parsing data " + e.toString());
        }

        // return JSON String
        return jObj;
    }
}
```

CategoryListActivity which is displaying list of data/information for six categories ie

1. **Love** messages.
2. **Friendship** messages.
3. **Puzzles**.
4. **Jokes**.
5. **Greetings** messages.
6. **Quotes**.

Now I have created 2 Activity classes which is going to display individual item from the list and integrating to the **FaceBook by using Facebook integration API's which is provided by Facebook developer people** to update status wall, liking uploading images, videos etc. And Integrating to **Messing Application** which is built in Android device. So that user can edit and forward the messages to their contacts.

FundOOApp

ItemDetailsActivity.java(Having Integration to Facebook and Messaging) → for → **Love** messages, **Friendship** messages, **Jokes**, **Greetings** messages, **Quotes**.

PuzzleActivity.java (Integration only for messaging) → for → **Puzzles**.

ItemDetailsActivity.java

```
package com.android.mahiraj.fundooapp;

/**
 * @author Mahesh Rajput
 *
 */
import java.io.FileNotFoundException;
import java.io.IOException;
import java.net.MalformedURLException;

import android.app.Activity;
import android.app.ProgressDialog;
import android.content.Context;
import android.content.Intent;
import android.net.ConnectivityManager;
import android.net.NetworkInfo;
import android.os.Bundle;
import android.os.Handler;
import android.provider.Settings;
import android.util.Log;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

import com.facebook.android.AsyncFacebookRunner;
import com.facebook.android.AsyncFacebookRunner.RequestListener;
import com.facebook.android.DialogError;
import com.facebook.android.Facebook;
import com.facebook.android.Facebook.DialogListener;
import com.facebook.android.FacebookError;
import com.facebook.android.SessionStore;

public class ItemDetailsActivity extends Activity {
    TextView textView;
    Button btn_fb;
    ImageView share;
    String text;
    private static final String APP_ID = "440372259361917";
    private static final String[] PERMISSIONS = new String[] {
```

FundOOApp

```
"publish_stream", "read_stream", "offline_access" };  
Facebook mFacebook;  
ProgressDialog mProgress;  
Handler runonUI;  
/** The con mgr. */  
ConnectivityManager conMgr;  
  
/** The active network. */  
NetworkInfo activeNetwork;  
  
/** Called when the activity is first created. */  
@SuppressWarnings("deprecation")  
@Override  
public void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
  
    setContentView(R.layout.item_detail_layout);  
    getResourceIDs();  
  
    conMgr = (ConnectivityManager)  
getSystemService(Context.CONNECTIVITY_SERVICE);  
    activeNetwork = conMgr.getActiveNetworkInfo();  
  
    mFacebook = new Facebook(APP_ID);  
    mProgress = new ProgressDialog(this);  
    runonUI = new Handler();  
  
    Intent intent = getIntent();  
    text = (String) intent.getCharSequenceExtra("text");  
    textView.setText(text);  
  
    // Button onClick event handling....  
    doClickEventHandling();  
}  
  
private void getResourceIDs() {  
    textView = (TextView) findViewById(R.id.item_detail);  
    btn_fb = (Button) findViewById(R.id.fb);  
    share = (ImageView) findViewById(R.id.share);  
}  
  
private void doClickEventHandling() {  
    btn_fb.setOnClickListener(new OnClickListener() {  
  
        @SuppressWarnings("deprecation")  
        @Override  
        public void onClick(View v) {  
            if (mFacebook.isSessionValid()) {  
                SessionStore.restore(mFacebook, getApplicationContext());  
            }  
        }  
    });  
}
```

FundOOApp

```
        postTofacebook(text);
        Log.d("SESSION", "VALID");
    } else {

        if (activeNetwork != null && activeNetwork.isConnected()) {
            toast("Please LogIn to Facebook...");
            shareClick();
            SessionStore.save(mFacebook,
getApplicationContext());
        } else {
            Intent i = new
Intent(Settings.ACTION_WIRELESS_SETTINGS);
            startActivity(i);
            Toast.makeText(
                ItemDetailsActivity.this,
                "User you are not online. Please enable
data access over mobile network... ",
                Toast.LENGTH_LONG).show();
        }
    });
}

share.setOnClickListener(new OnClickListener() {

    @Override
    public void onClick(View v) {
        Intent intent = new Intent(Intent.ACTION_VIEW);
        intent.setType("vnd.android-dir/mms-sms");
        intent.putExtra("sms_body", text);
        startActivity(intent);

    }
});

}

@SuppressLint("NewApi")
private void postTofacebook(String review) {
    mProgress.setMessage("Posting ...");
    mProgress.show();
    @SuppressLint("NewApi")
    AsyncFacebookRunner asycnkRunner = new AsyncFacebookRunner(mFacebook);
    Bundle params = new Bundle();

    params.putString("message", review);

    asycnkRunner.request("me/feed", params, "POST", new RequestListener() {
```

FundOOApp

```
@Override
public void onComplete(final String response, Object state) {
    runOnUiThread(new Runnable() {

        @Override
        public void run() {
            mProgress.cancel();
            toast("Posted to Facebook Successfully..!");
            Log.i("RESPONSE", response);
        }
    });
}

@Override
public void onIOException(IOException e, Object state) {
    // TODO Auto-generated method stub
}

@Override
public void onFileNotFoundException(FileNotFoundException e,
        Object state) {
    // TODO Auto-generated method stub
}

@Override
public void onMalformedURLException(MalformedURLException e,
        Object state) {
    // TODO Auto-generated method stub
}

@Override
public void onFacebookError(FacebookError e, Object state) {
    // TODO Auto-generated method stub
}

}, null);

}

@SuppressWarnings("deprecation")
private void shareClick() {

    mFacebook.authorize(ItemDetailsActivity.this, PERMISSIONS, -1,
        new DialogListener() {
```

FundOOApp

```
    @Override
    public void onFacebookError(FacebookError e) {
        // TODO Auto-generated method stub
    }

    @Override
    public void onError(DialogError e) {
        // TODO Auto-generated method stub
    }

    @Override
    public void onComplete(Bundle values) {
        toast("Logged in Successfully...!");
        Log.d("SESSION", "AUTORIZING-LoggingIn");
    }

    @Override
    public void onCancel() {
        // TODO Auto-generated method stub
    }
});

}

public void toast(String msg) {
    Toast.makeText(ItemDetailsActivity.this, msg, Toast.LENGTH_SHORT)
        .show();
}
}
```

PuzzleActivity.java

```
package com.android.mahiraj.fundooapp;
/**
 * @author Mahesh Rajput
 *
 */
import java.util.List;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.ImageView;
import android.widget.TextView;
```

FundOOApp

```
public class PuzzleActivity extends Activity {  
    TextView ques;  
    TextView ans;  
    ImageView share_puzzle;  
    FundOOApplication app;  
  
    /** Called when the activity is first created. */  
    @Override  
    public void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
  
        setContentView(R.layout.puzzle_layout);  
        app = (FundOOApplication) getApplication();  
        getResourceIDs();  
        Intent intent = getIntent();  
        String puzzle = (String) intent.getCharSequenceExtra("puzzle");  
        ques.setText(puzzle);  
  
        int pos = intent.getIntExtra("position", 0);  
        List<String> ansList = app.getPuzzleAns();  
        final String answer = ansList.get(pos);  
        ans.setText(answer);  
  
        share_puzzle.setOnClickListener(new OnClickListener() {  
  
            @Override  
            public void onClick(View v) {  
                Intent intent = new Intent(Intent.ACTION_VIEW);  
                intent.setType("vnd.android-dir/mms-sms");  
                intent.putExtra("sms_body", answer);  
                startActivity(intent);  
            }  
        });  
    }  
  
    private void getResourceIDs() {  
        ques = (TextView) findViewById(R.id.question);  
        ans = (TextView) findViewById(R.id.answer);  
        share_puzzle = (ImageView) findViewById(R.id.share_puzzle);  
    }  
}
```

FundOOApp

This is the final **AndroidManifest.xml** which includes all uses permissions to access Internet, uses min/target Android sdk version(1.6 to 4.0) supports. All Activity classes must registered inside the **application** elements.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.android.mahiraj.fundooapp"
    android:versionCode="1"
    android:versionName="1.0" >

    <uses-sdk
        android:minSdkVersion="7"
        android:targetSdkVersion="15" />

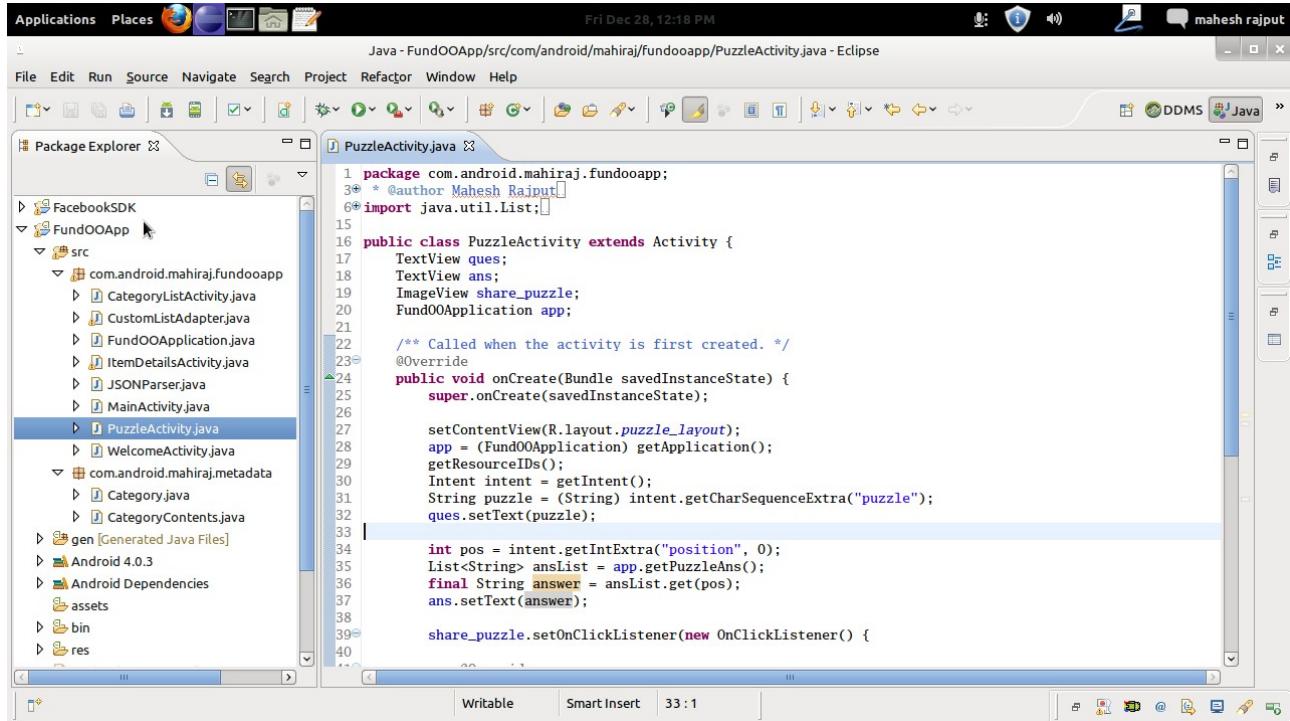
    <uses-permission android:name="android.permission.INTERNET" />
    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE"/>

    <application
        android:name=".FundOOApplication"
        android:allowBackup="true"
        android:icon="@drawable/m"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name=".WelcomeActivity"
            android:label="@string/app_name" ><intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name=".MainActivity" >
        </activity>
        <activity android:name=".CategoryListActivity" >
        </activity>
        <activity android:name=".PuzzleActivity"></activity>
        <activity android:name=".ItemDetailsActivity"></activity>
    </application>

</manifest>
```

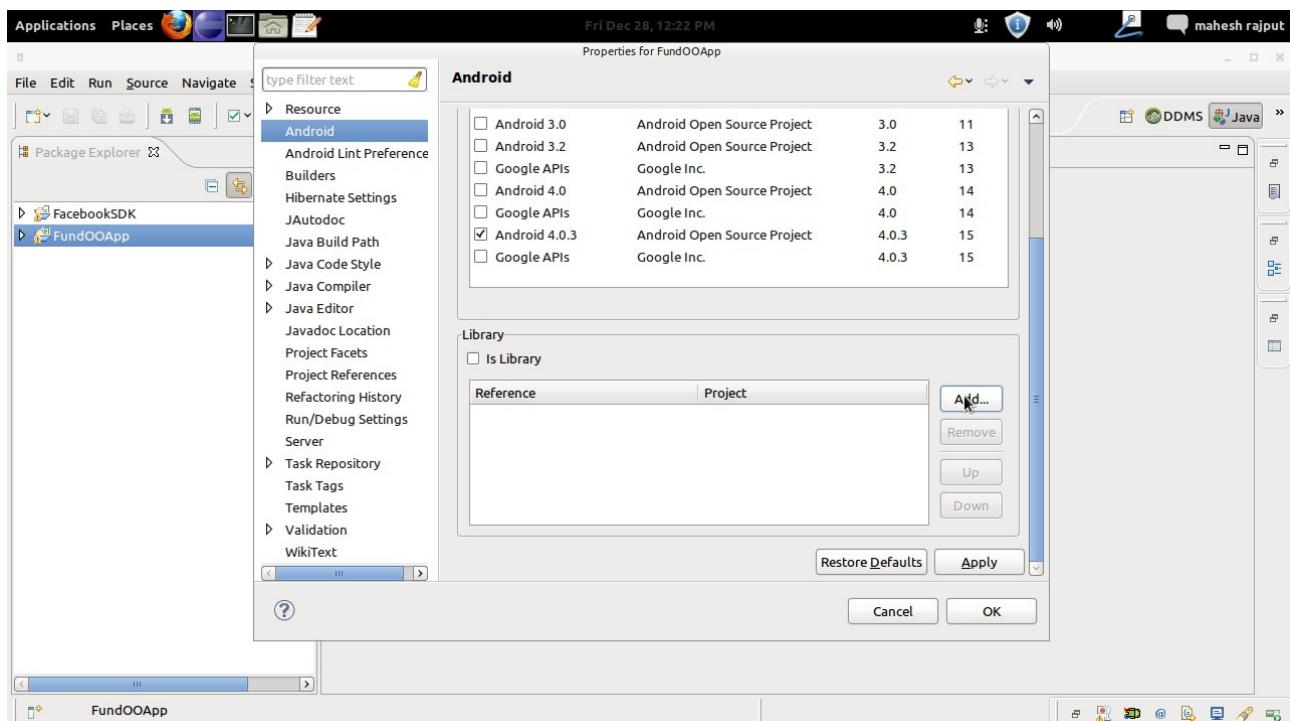
FundOOApp



Download FacebookSDK which is a Library Application and import it to Eclipse workspace.

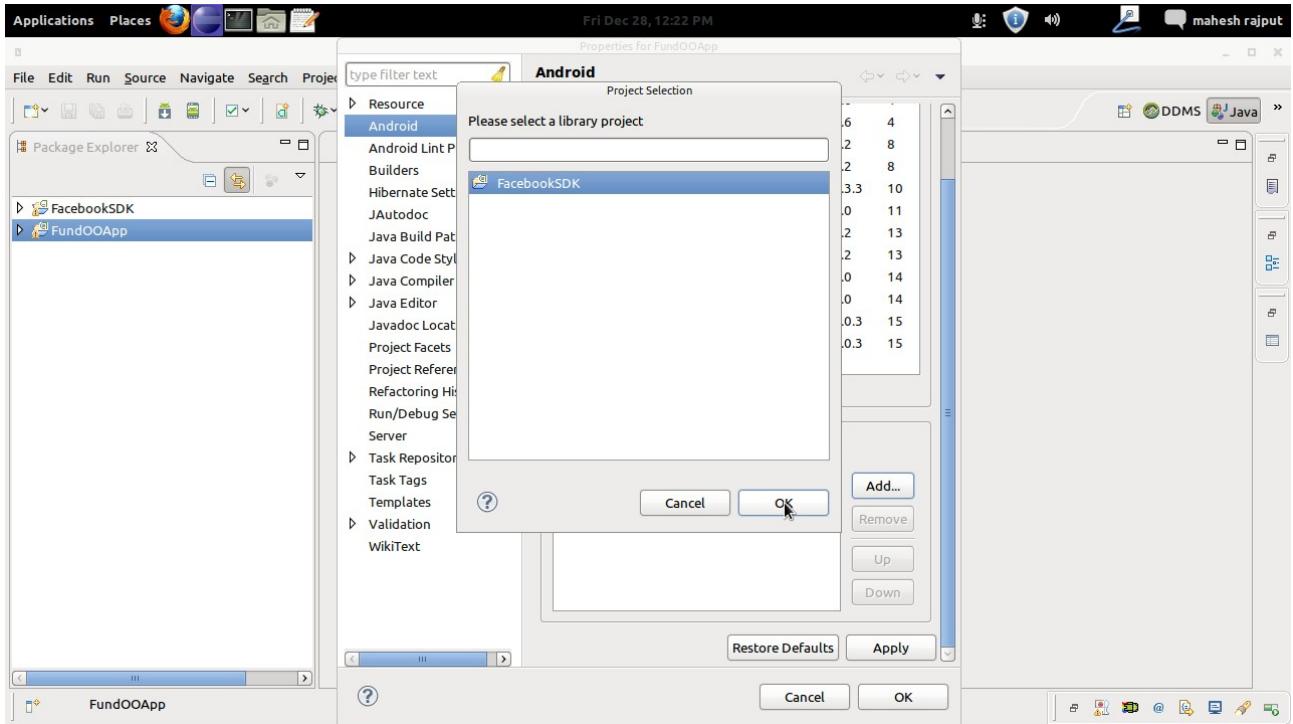
Following Snapshots shows Adding FacebookSDK as library to our Application.

Step 1:

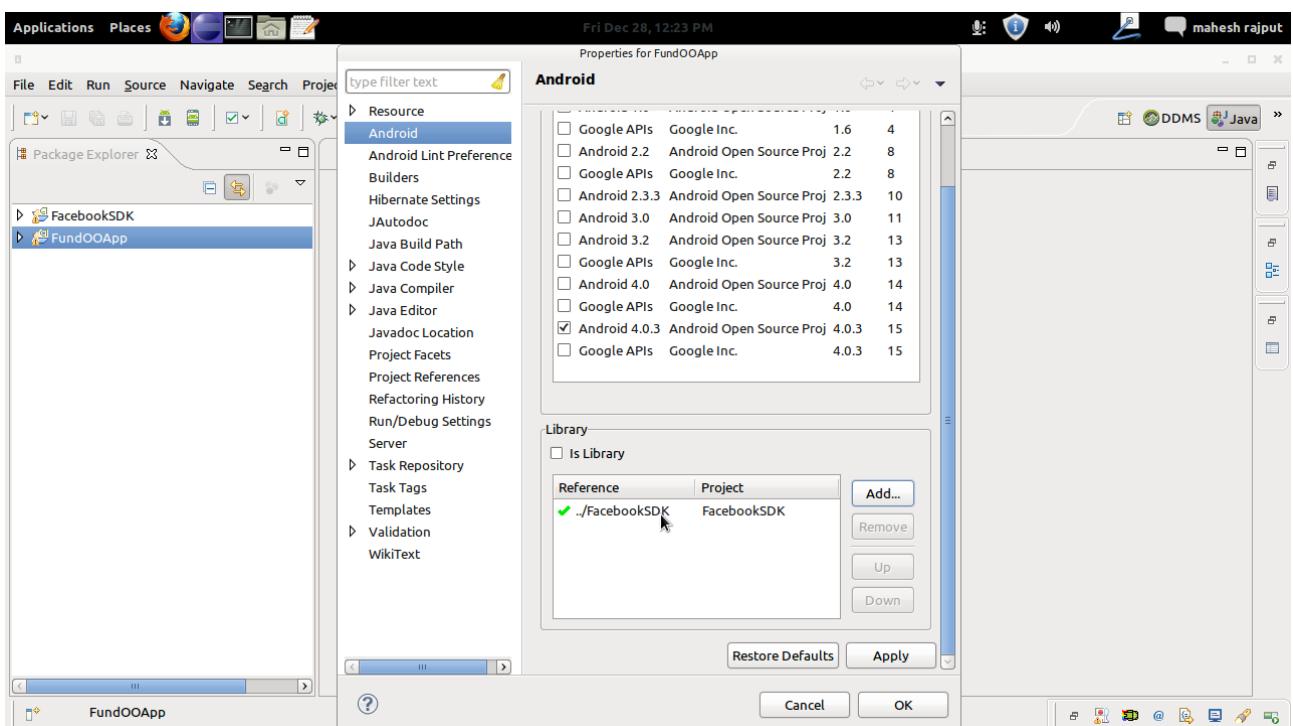


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Step 2:

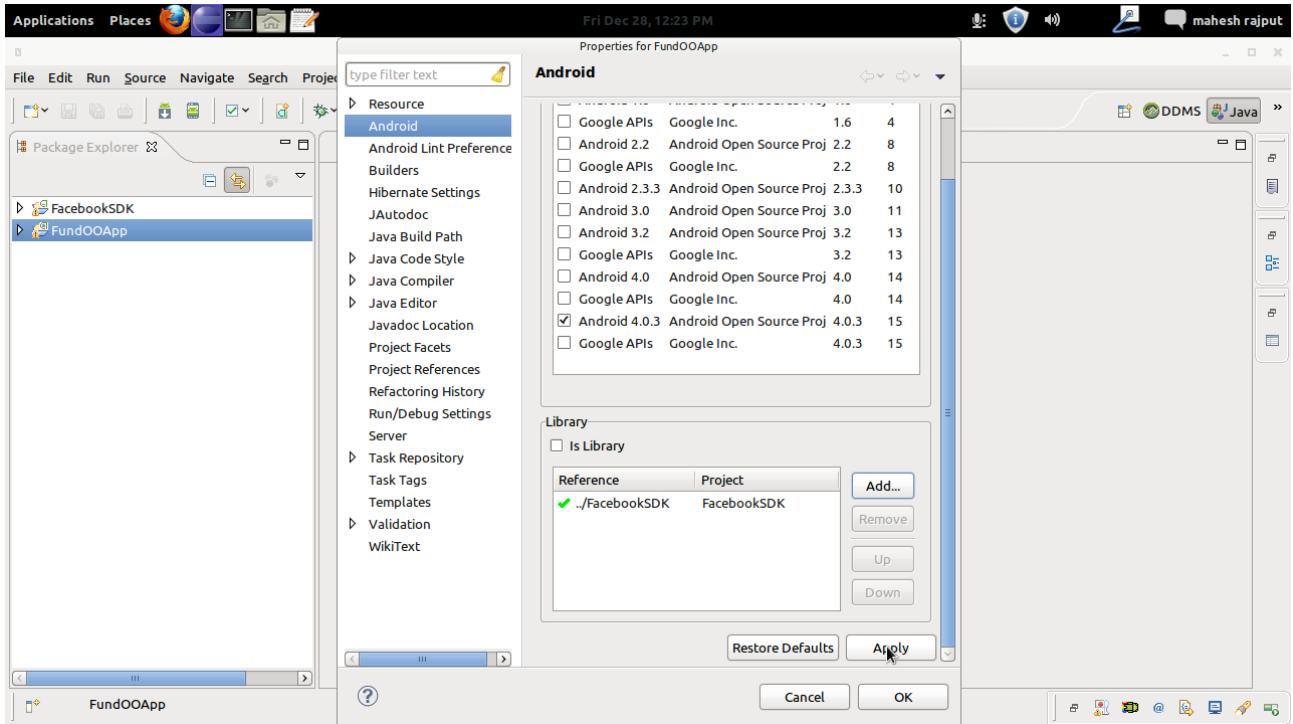


Step 3:



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Step 4:



Step 5:

