Software Development for Mobile Devices

# Submission for Assignment A4.2P

## App Screenshot

|  |  |
| --- | --- |
| Activity | Screen |
| MainActivity | Screenshot_1534399572.png |
| ImageDisplayActivity | Screenshot_1534399575.png |

## Source code

### Main Layout (activity\_main.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="com.example.swinburne.browsing.MainActivity">  
  
 <TableLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:paddingTop="5dp"  
 android:layout\_marginBottom="5dp"  
 android:layout\_marginStart="5dp"  
 android:layout\_marginEnd="5dp">  
 <TableRow android:layout\_marginBottom="5dp">  
 <ImageButton android:id="@+id/imgBtnFirst"  
 android:layout\_height="120dp"  
 android:layout\_width="wrap\_content"  
 android:src="@drawable/image1"  
 android:layout\_marginEnd="5dp"  
 android:onClick="clickFirstButton"  
 android:layout\_weight="1"/>  
  
 <ImageButton android:id="@+id/imgBtnSecond"  
 android:layout\_height="120dp"  
 android:layout\_width="wrap\_content"  
 android:src="@drawable/image2"  
 android:onClick="clickSecondButton"  
 android:layout\_weight="1"/>  
 </TableRow>  
  
 <TableRow>  
 <ImageButton android:id="@+id/imgBtnThird"  
 android:layout\_height="120dp"  
 android:layout\_width="wrap\_content"  
 android:src="@drawable/image3"  
 android:layout\_marginEnd="5dp"  
 android:onClick="clickThirdButton"  
 android:layout\_weight="1"/>  
  
 <ImageButton android:id="@+id/imgBtnFourth"  
 android:layout\_height="120dp"  
 android:layout\_width="wrap\_content"  
 android:onClick="clickFourthButton"  
 android:src="@drawable/image4"  
 android:layout\_weight="1"/>  
 </TableRow>  
  
 </TableLayout>  
  
</android.support.constraint.ConstraintLayout>

### Image Display Layout (activity\_image\_display.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="com.example.swinburne.browsing.ImageDisplayActivity">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:layout\_marginTop="5dp"  
 android:layout\_marginBottom="5dp"  
 android:layout\_marginStart="5dp"  
 android:layout\_marginEnd="5dp">  
  
 <ImageView  
 android:id="@+id/imgView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:scaleType="fitXY"  
 android:adjustViewBounds="true"  
 />  
  
 <TextView  
 android:id="@+id/txtDescription"  
 android:layout\_marginTop="10dp"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="20sp"/>  
  
 </LinearLayout>  
  
  
</android.support.constraint.ConstraintLayout>

### MainActivity

public class MainActivity extends AppCompatActivity {  
  
  
 ImageButton imgBtn1;  
 ImageButton imgBtn2;  
 ImageButton imgBtn3;  
 ImageButton imgBtn4;  
  
 private static int *COMPRESS\_QUALITY* = 50;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 initializeUI();  
 }  
  
 private void initializeUI() {  
 imgBtn1 = findViewById(R.id.*imgBtnFirst*);  
 imgBtn2 = findViewById(R.id.*imgBtnSecond*);  
 imgBtn3 = findViewById(R.id.*imgBtnThird*);  
 imgBtn4 = findViewById(R.id.*imgBtnFourth*);  
  
 }  
  
 public void clickFirstButton(View v) {  
 try {  
 Intent intent = new Intent(this, ImageDisplayActivity.class);  
 byte[] byteArray = convertImageToBytes((BitmapDrawable) imgBtn1.getDrawable(), *COMPRESS\_QUALITY*);  
 intent.putExtra("image", byteArray);  
 intent.putExtra("description", "This is the fourth image");  
 startActivity(intent);  
 } catch (IOException ex) {  
 Log.*e*("Error", "Cannot convert image");  
 }  
 }  
  
 public void clickSecondButton(View v) {  
 try {  
 Intent intent = new Intent(this, ImageDisplayActivity.class);  
 byte[] byteArray = convertImageToBytes((BitmapDrawable) imgBtn2.getDrawable(), *COMPRESS\_QUALITY*);  
 intent.putExtra("image", byteArray);  
 intent.putExtra("description", "This is the fourth image");  
 startActivity(intent);  
 } catch (IOException ex) {  
 Log.*e*("Error", "Cannot convert image");  
 }  
 }  
  
 public void clickThirdButton(View v) {  
 try {  
 Intent intent = new Intent(this, ImageDisplayActivity.class);  
 byte[] byteArray = convertImageToBytes((BitmapDrawable) imgBtn3.getDrawable(), *COMPRESS\_QUALITY*);  
 intent.putExtra("image", byteArray);  
 intent.putExtra("description", "This is the fourth image");  
 startActivity(intent);  
 } catch (IOException ex) {  
 Log.*e*("Error", "Cannot convert image");  
 }  
 }  
  
 public void clickFourthButton(View v) {  
 try {  
 Intent intent = new Intent(this, ImageDisplayActivity.class);  
 byte[] byteArray = convertImageToBytes((BitmapDrawable) imgBtn4.getDrawable(), *COMPRESS\_QUALITY*);  
 intent.putExtra("image", byteArray);  
 intent.putExtra("description", "This is the fourth image");  
 startActivity(intent);  
 } catch (IOException ex) {  
 Log.*e*("Error", "Cannot convert image");  
 }  
  
 }  
  
 */\*\*  
 \* Convert image from drawable to byteArray[]  
 \** ***@param*** *bitmapDrawable resource drawable image  
 \** ***@param*** *quality image quality after scaling  
 \** ***@return*** *byteArray[] with quality  
 \** ***@throws*** *IOException closing exception  
 \*/* private byte[] convertImageToBytes (BitmapDrawable bitmapDrawable, int quality) throws IOException {  
 ByteArrayOutputStream stream = new ByteArrayOutputStream();  
 Bitmap bitmap = bitmapDrawable.getBitmap();  
 bitmap.compress(Bitmap.CompressFormat.*JPEG*,quality, stream);  
 byte[] byteArray = stream.toByteArray();  
 stream.close();  
 return byteArray;  
 }  
  
}

### ImageDisplayActivity

public class ImageDisplayActivity extends AppCompatActivity {  
  
 ImageView imgView;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_image\_display*);  
 byte[] byteArray = getIntent().getByteArrayExtra("image");  
 Bitmap bmp = BitmapFactory.*decodeByteArray*(byteArray, 0, byteArray.length);  
 imgView = findViewById(R.id.*imgView*);  
 imgView.setImageBitmap(bmp);  
 String description = getIntent().getStringExtra("description");  
 TextView txtView = findViewById(R.id.*txtDescription*);  
 txtView.setText(description);  
 }  
}

### string.xml

<resources>  
 <string name="app\_name">Browsing</string>  
 <string name="image\_description\_1">This is the first image</string>  
 <string name="image\_description\_2">This is the second image</string>  
 <string name="image\_description\_3">This is the third image</string>  
 <string name="image\_description\_4">This is the fourth image</string>  
</resources>