

Collage Making App – Collage Maker

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ABSTRACT:

The rapidly increasing power of personal mobile phones (smart phones, tablets etc.) has led to the advent of many applications that are run to perform various tasks. These tasks can range from ones used on a daily basis (e.g. Gmail, Facebook, Whatsapp etc.) to ones that are not used quite often but yet satisfy the user's momentary need (Photo editing apps etc.). Though the former are used more often, the users tend to have more expectations from the latter and expect them to satisfy their needs. The present day trend turns out to be pictures. People are getting more obsessed towards beautifying their pics, clubbing more than one pics together, and posting these pics in online social media sites etc. In order to fulfil this purpose, many applications are being made to edit, beautify and club pics together.

INTRODUCTION:

In the process of learning development of an android application, I have successfully developed an app called "Collage Maker". I chose this topic in order to explore various aspects in app dev that are related to importing and exporting pictures from an android device.

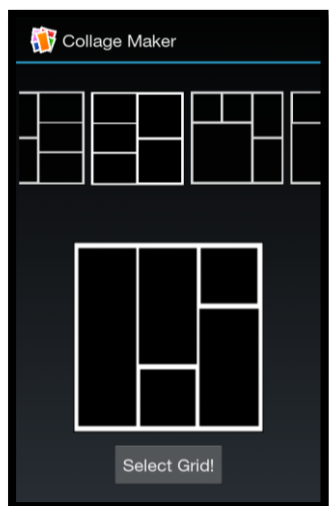
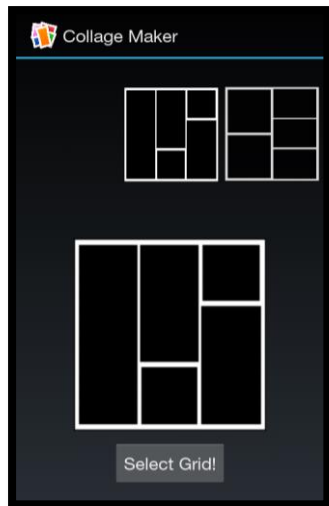
This app gives the user a chance to select a grid pattern of his choice from the given number of grids, into which he would like to insert his pics. After having selected the grid, the user can select different parts of the grid and add pictures of his choice at the position of his choice. Having added all pictures, the user can save this collage of pics into his gallery for further use. Therefore, this app serves the purpose of making collages from pics present in the gallery of the user's android device.

APP INTERFACE:

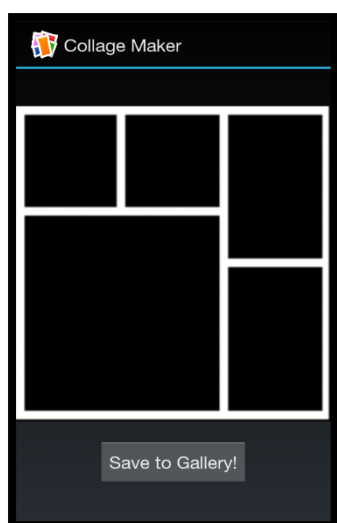
- Introduction Page:

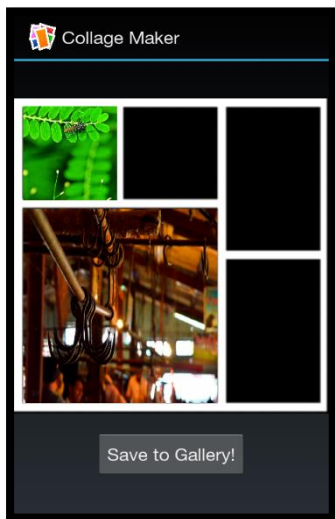


- **Menu Page (To select grid):**



- **Page to add pics into the grid:**





- **Saved image:**



SOURCE CODE:

- Android Manifest:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.myapp.teja"
android:versionCode="1"
android:versionName="1.0" >
<uses-sdk
android:minSdkVersion="8"
android:targetSdkVersion="22" />
<uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE"
android:maxSdkVersion="22"/>
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"
android:maxSdkVersion="22"/>

<application
android:allowBackup="true"
android:icon="@drawable/icon"
android:label="@string/app_name">
<activity
android:name=".Intro"
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=".Menu"
android:label="@string/app_name" >
<intent-filter>
<action android:name="com.myapp.teja.MENU" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
<activity
android:name=".Grid1"
android:label="@string/app_name" >
<intent-filter>
<action android:name="com.myapp.teja.GRID1" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
<activity
android:name=".Grid2"
android:label="@string/app_name" >
<intent-filter>
<action android:name="com.myapp.teja.GRID2" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
<activity
android:name=".Grid3"
android:label="@string/app_name" >
```

```

<intent-filter>
<action android:name="com.myapp.teja.GRID3" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
<activity
android:name=".Grid4"
android:label="@string/app_name" >
<intent-filter>
<action android:name="com.myapp.teja.GRID4" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
<activity
android:name=".Grid5"
android:label="@string/app_name" >
<intent-filter>
<action android:name="com.myapp.teja.GRID5" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
<activity
android:name=".Grid6"
android:label="@string/app_name" >
<intent-filter>
<action android:name="com.myapp.teja.GRID6" />

<category android:name="android.intent.category.DEFAULT" />
</intent-filter>
</activity>
</application>

</manifest>

```

- Intro.java:

```

package com.myapp.teja;

import android.app.Activity;
import android.content.Intent;
import android.os.Bundle;

public class Intro extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_intro);
        Thread timer=new Thread(){
            public void run(){
                try{
                    sleep(8000);
                }catch(InterruptedException e){
                    e.printStackTrace();
                }finally{

```

```

Intent openMenu= new Intent("com.myapp.teja.MENU");
startActivity(openMenu);
}
}
};
timer.start();
}

@Override
protected void onPause() {

super.onPause();
finish();
}
}

```

- Menu.java:

```

package com.myapp.teja;

import android.app.Activity;
import android.content.Context;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.BaseAdapter;
import android.widget.Button;
import android.widget.Gallery;
import android.widget.ImageView;

public class Menu extends Activity{

private Integer[]
pics={R.drawable.a,R.drawable.b,R.drawable.c,R.drawable.d,R.drawable.e,R.dr
awable.f};
private ImageView imageView;
Button go;
int count=0;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_menu);

Gallery gallery=(Gallery) findViewById(R.id.gallery1);
gallery.setAdapter(new ImageAdapter(this));
imageView=(ImageView)findViewById(R.id.imageView1);
gallery.setOnItemClickListener(new OnItemClickListener(){

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

```

```

imageView.setImageResource(pics[position]);
count=position;
}
});

go=(Button) findViewById(R.id.button1);
go.setOnClickListener(new OnClickListener(){

@Override
public void onClick(View v) {

Intent openGrid= new Intent("com.myapp.teja.GRID"+(count+1));
startActivity(openGrid);
}

});
}

public class ImageAdapter extends BaseAdapter{
private Context context;
int imageBackground;

public ImageAdapter(Context context){
this.context=context;
}

@Override
public int getCount() {

return pics.length;
}

@Override
public Object getItem(int position) {

return position;
}

@Override
public long getItemId(int position) {

return position;
}

@Override
public View getView(int position, View convertView, ViewGroup parent) {
ImageView imageView=new ImageView(context);
imageView.setPadding(20, 20, 20, 20);
imageView.setImageResource(pics[position]);
return imageView;
}
}
}

```

- **Grid1.java(same for Grid2,Grid3,Grid4,Grid5 and Grid6):**

```
package com.myapp.teja;

import android.app.Activity;
import android.content.Intent;
import android.database.Cursor;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.graphics.Canvas;
import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.net.Uri;
import android.os.Bundle;
import android.provider.MediaStore;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.Toast;

public class Grid1 extends Activity{

    private static int RESULT_LOAD_IMG = 1;
    String imgDecodableString;
    Bitmap yourSelectedImage = null,bit0,bit1,bit2,bit3,bit4,bit5;
    ImageView imgView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_grid1);

        /* grid1 changes to grid2, grid3, grid4, grid5 or grid6 in their respective
        java files.*/

        Button btn=(Button)findViewById(R.id.button1);
        btn.setOnClickListener(new OnClickListener(){

            @Override
            public void onClick(View v) {

                try{
                    ImageView i0=(ImageView)findViewById(R.id.imageView0);
                    ImageView i1=(ImageView)findViewById(R.id.imageView1);
                    ImageView i2=(ImageView)findViewById(R.id.imageView2);
                    ImageView i3=(ImageView)findViewById(R.id.imageView3);
                    ImageView i4=(ImageView)findViewById(R.id.imageView4);
                    ImageView i5=(ImageView)findViewById(R.id.imageView5);
                    bit0 = ((BitmapDrawable) i0.getBackground()).getBitmap();
                    bit1 = ((BitmapDrawable) i1.getBackground()).getBitmap();
                    bit2 = ((BitmapDrawable) i2.getBackground()).getBitmap();
                    bit3 = ((BitmapDrawable) i3.getBackground()).getBitmap();
                    bit4 = ((BitmapDrawable) i4.getBackground()).getBitmap();
                    bit5 = ((BitmapDrawable) i5.getBackground()).getBitmap();
                    Bitmap b0=Bitmap.createScaledBitmap(bit0, i0.getWidth(),
                    i0.getHeight(),true);
```



```

        Bitmap b1=Bitmap.createScaledBitmap(bit1, i1.getWidth(),
        i1.getHeight(),true);
        Bitmap b2=Bitmap.createScaledBitmap(bit2, i2.getWidth(),
        i2.getHeight(),true);
        Bitmap b3=Bitmap.createScaledBitmap(bit3, i3.getWidth(),
        i3.getHeight(),true);
        Bitmap b4=Bitmap.createScaledBitmap(bit4, i4.getWidth(),
        i4.getHeight(),true);
        Bitmap b5=Bitmap.createScaledBitmap(bit5, i5.getWidth(),
        i5.getHeight(),true);
        combineImages(b0,b1,b2,b3,b4,b5);
    }
    catch(NullPointerException e2){
        Toast.makeText(getApplicationContext(), "Add images before saving!",
        Toast.LENGTH_SHORT).show();
    }

}

});

findViewById(R.id.imageView1).setOnClickListener(new OnClickListener(){
@Override
public void onClick(View v) {

    imgView = (ImageView) findViewById(R.id.imageView1);

    Intent galleryIntent = new Intent(Intent.ACTION_PICK,
    android.provider.MediaStore.Images.Media.EXTERNAL_CONTENT_URI);
    startActivityForResult(galleryIntent, RESULT_LOAD_IMG);
}

});

findViewById(R.id.imageView2).setOnClickListener(new OnClickListener(){
@Override
public void onClick(View v) {

    imgView = (ImageView) findViewById(R.id.imageView2);
    Intent galleryIntent = new Intent(Intent.ACTION_PICK,
    android.provider.MediaStore.Images.Media.EXTERNAL_CONTENT_URI);
    startActivityForResult(galleryIntent, RESULT_LOAD_IMG);
}

});

findViewById(R.id.imageView3).setOnClickListener(new OnClickListener(){
@Override
public void onClick(View v) {

    imgView = (ImageView) findViewById(R.id.imageView3);
    Intent galleryIntent = new Intent(Intent.ACTION_PICK,
    android.provider.MediaStore.Images.Media.EXTERNAL_CONTENT_URI);
    startActivityForResult(galleryIntent, RESULT_LOAD_IMG);
}

});

```

```

findViewById(R.id.imageView4).setOnClickListener(new OnClickListener(){
@Override
public void onClick(View v) {

    imgView = (ImageView) findViewById(R.id.imageView4);
    Intent galleryIntent = new Intent(Intent.ACTION_PICK,
    android.provider.MediaStore.Images.Media.EXTERNAL_CONTENT_URI);
    startActivityForResult(galleryIntent, RESULT_LOAD_IMG);
}

});

findViewById(R.id.imageView5).setOnClickListener(new OnClickListener(){
@Override
public void onClick(View v) {

    imgView = (ImageView) findViewById(R.id.imageView5);
    Intent galleryIntent = new Intent(Intent.ACTION_PICK,
    android.provider.MediaStore.Images.Media.EXTERNAL_CONTENT_URI);
    startActivityForResult(galleryIntent, RESULT_LOAD_IMG);
}

});
}

@Override
protected void onActivityResult(int requestCode, int resultCode, Intent
data) {
    super.onActivityResult(requestCode, resultCode, data);
    try {
        if (requestCode == RESULT_LOAD_IMG && resultCode == RESULT_OK
        && null != data) {
            Uri selectedImage = data.getData();
            String[] filePathColumn = { MediaStore.Images.Media.DATA };
            Cursor cursor = getContentResolver().query(selectedImage,
            filePathColumn, null, null, null);
            cursor.moveToFirst();
            int columnIndex = cursor.getColumnIndex(filePathColumn[0]);
            imgDecodableString = cursor.getString(columnIndex);
            cursor.close();
            yourSelectedImage=BitmapFactory.decodeFile(imgDecodableString);
            Drawable d=new BitmapDrawable(yourSelectedImage);
            imgView.setBackground(d);
        }
    }catch(Exception e){
        e.printStackTrace();
    }
}

public Bitmap combineImages(Bitmap a, Bitmap b,Bitmap c,Bitmap d,Bitmap
e,Bitmap f) {
    Bitmap cs = null;
    try{
        ImageView i0=(ImageView)findViewById(R.id.imageView0);
        ImageView i1=(ImageView)findViewById(R.id.imageView1);
        ImageView i2=(ImageView)findViewById(R.id.imageView2);
        ImageView i3=(ImageView)findViewById(R.id.imageView3);
    }
}

```

```

ImageView i4=(ImageView)findViewById(R.id.imageView4);
ImageView i5=(ImageView)findViewById(R.id.imageView5);

cs = Bitmap.createBitmap(((ImageView)
findViewById(R.id.imageView0)).getWidth(), ((ImageView)
findViewById(R.id.imageView0)).getHeight(), Bitmap.Config.ARGB_8888);

Canvas comboImage = new Canvas(cs);

comboImage.drawBitmap(a, i0.getLeft(), i0.getTop(), null);
comboImage.drawBitmap(b, i1.getLeft(), i1.getTop(), null);
comboImage.drawBitmap(c, i2.getLeft(), i2.getTop(), null);
comboImage.drawBitmap(d, i3.getLeft(), i3.getTop(), null);
comboImage.drawBitmap(e, i4.getLeft(), i4.getTop(), null);
comboImage.drawBitmap(f, i5.getLeft(), i5.getTop(), null);
MediaStore.Images.Media.insertImage(getContentResolver(), cs, "pic" ,
"pic");
Toast.makeText(getApplicationContext(), "Image Saved!",
Toast.LENGTH_SHORT).show();
Intent openMenu= new Intent("com.myapp.teja.MENU");
startActivity(openMenu);
}
catch(NullPointerException e2){
Toast.makeText(getApplicationContext(), "Add images before saving",
Toast.LENGTH_SHORT).show();
}
return cs;
}

}

```

- **activity_intro.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"
android:background="@drawable/dp"
tools:context="${relativePackage}.${activityClass}" >

    </RelativeLayout>

```

- **activity_menu.xml:**

```

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

    <Gallery
    android:id="@+id/gallery1"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"

```

```

android:paddingLeft="3dp"/>

<ImageView
android:id="@+id/imageView1"
android:layout_width="200dp"
android:layout_height="200dp"
android:layout_marginTop="45dp"
android:layout_gravity="center"
android:src="@drawable/a" />

<Button
android:id="@+id/button1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Select Grid!"
android:layout_gravity="center"
android:layout_marginTop="10dp" />

</LinearLayout>

```

- **activity_grid1.xml(same for grid2, gid3, grid4, grid5 and grid6)**

```

/* android:layout_height , android:layout_width and android:background
attributes have different values for different grids. */

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="30dp">

<ImageView
android:id="@+id/imageView0"
android:layout_width="320dp"
android:layout_height="320dp"
android:layout_marginTop="8dp"
android:focusable="false"
android:adjustViewBounds="true"
android:layout_weight="1"
android:scaleType="fitXY"
android:background="@drawable/a" />

<ImageView
android:id="@+id/imageView1"
android:layout_width="97dp"
android:layout_height="298dp"
android:layout_marginLeft="9dp"
android:layout_marginTop="19dp"
android:adjustViewBounds="true"
android:layout_weight="1"
android:scaleType="fitXY"/>

<ImageView
android:id="@+id/imageView2"
android:layout_width="97dp"
android:layout_height="195dp"
android:layout_marginLeft="109dp"
android:layout_marginTop="19dp"
android:adjustViewBounds="true"
android:layout_weight="1"
android:scaleType="fitXY"/>

```

```

<ImageView
android:id="@+id/imageView3"
android:layout_width="93dp"
android:layout_height="95dp"
android:layout_marginLeft="112dp"
android:layout_marginTop="221dp"
android:adjustViewBounds="true"
android:layout_weight="1"
android:scaleType="fitXY"/>

<ImageView
android:id="@+id/imageView4"
android:layout_width="96dp"
android:layout_height="93dp"
android:layout_marginLeft="213dp"
android:layout_marginTop="19dp"
android:adjustViewBounds="true"
android:layout_weight="1"
android:scaleType="fitXY" />

<ImageView
android:id="@+id/imageView5"
android:layout_width="99dp"
android:layout_height="198dp"
android:layout_marginLeft="212dp"
android:layout_marginTop="120dp"
android:adjustViewBounds="true"
android:layout_weight="1"
android:scaleType="fitXY"/>

<Button
android:id="@+id/button1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Save to Gallery!"
android:layout_centerHorizontal="true"
android:layout_marginTop="345dp" />

</RelativeLayout>

```

RESULT:

A collage making android app is successfully created using eclipse IDE.