

Image Editor:

Code:

MainActivity.java:

```
package com.example.imgeditor;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Bitmap;
import android.graphics.BitmapFactory;
import android.graphics.Color;
import android.os.Bundle;
import android.view.View;
import android.view.animation.AlphaAnimation;
import android.view.animation.ScaleAnimation;
import android.view.animation.TranslateAnimation;
import android.widget.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    ImageView img;
    Button btninv, btngrey, btnres, btnmove, btnrotate, btnscale, btnzoomin, btnzoomout, btnfadein,
    btnfadeout, btnbounce;

    float scale = 1.0f;
    float rotation = 0.0f;
    Bitmap originalBitmap;

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

        img = findViewById(R.id.imgvw);
        btninv = findViewById(R.id.btninvert);
        btngrey = findViewById(R.id.btngrey);
        btnres = findViewById(R.id.btnres);
        btnmove = findViewById(R.id.btnmove);
        btnrotate = findViewById(R.id.btnrotate);
        btnscale = findViewById(R.id.btscale);
        btnzoomin = findViewById(R.id.btnzoomin);
        btnzoomout = findViewById(R.id.btnzoomout);
        btnfadein = findViewById(R.id.btfadein);
        btnfadeout = findViewById(R.id.btfadeout);
        btnbounce = findViewById(R.id.btnbounce);

        originalBitmap = BitmapFactory.decodeResource(getResources(), R.drawable.fruit);
        img.setImageBitmap(originalBitmap);
    }
}
```

```

    btninv.setOnClickListener(v -> invertImage());
    btngrey.setOnClickListener(v -> grayScaleImage());
    btnres.setOnClickListener(v -> resetImage());

    btnmove.setOnClickListener(v -> moveImage());
    btnrotate.setOnClickListener(v -> rotateImage());
    btnscale.setOnClickListener(v -> scaleImage());
    btnzoomin.setOnClickListener(v -> zoomIn());
    btnzoomout.setOnClickListener(v -> zoomOut());
    btnfadein.setOnClickListener(v -> fadeIn());
    btnfadeout.setOnClickListener(v -> fadeOut());
    btnbounce.setOnClickListener(v -> bounceIn());
}

private void invertImage() {
    Bitmap inv = Bitmap.createBitmap(originalBitmap.getWidth(), originalBitmap.getHeight(),
originalBitmap.getConfig());
    for (int x = 0; x < originalBitmap.getWidth(); x++) {
        for (int y = 0; y < originalBitmap.getHeight(); y++) {
            int pixel = originalBitmap.getPixel(x, y);
            int A = Color.alpha(pixel);
            int R = 255 - Color.red(pixel);
            int G = 255 - Color.green(pixel);
            int B = 255 - Color.blue(pixel);
            inv.setPixel(x, y, Color.argb(A, R, G, B));
        }
    }
    img.setImageBitmap(inv);
}

private void grayScaleImage() {
    Bitmap gray = Bitmap.createBitmap(originalBitmap.getWidth(), originalBitmap.getHeight(),
originalBitmap.getConfig());
    for (int x = 0; x < originalBitmap.getWidth(); x++) {
        for (int y = 0; y < originalBitmap.getHeight(); y++) {
            int pixel = originalBitmap.getPixel(x, y);
            int A = Color.alpha(pixel);
            int R = Color.red(pixel);
            int G = Color.green(pixel);
            int B = Color.blue(pixel);
            int grayValue = (R + G + B) / 3;
            gray.setPixel(x, y, Color.argb(A, grayValue, grayValue, grayValue));
        }
    }
    img.setImageBitmap(gray);
}

private void resetImage() {
    img.setImageBitmap(originalBitmap);
    scale = 1.0f; // Reset scale
}

```

```

    img.setScaleX(scale);
    img.setScaleY(scale);
    img.setRotation(0); // Reset rotation
}

private void moveImage() {
    TranslateAnimation animation = new TranslateAnimation(0, 100, 0, 0);
    animation.setDuration(500);
    img.startAnimation(animation);
}

private void rotateImage() {
    rotation += 90; // Rotate by 90 degrees
    img.setRotation(rotation);
}

private void scaleImage() {
    scale += 0.1f; // Increment scale
    img.setScaleX(scale);
    img.setScaleY(scale);
}

private void zoomIn() {
    scale += 0.2f; // Increase scale for zoom in
    img.setImageBitmap(Bitmap.createScaledBitmap(originalBitmap,
        (int)(originalBitmap.getWidth() * scale),
        (int)(originalBitmap.getHeight() * scale),
        true));
}

private void zoomOut() {
    scale -= 0.2f; // Decrease scale for zoom out
    if (scale < 0.1f) scale = 0.1f; // Prevent negative scaling
    img.setImageBitmap(Bitmap.createScaledBitmap(originalBitmap,
        (int)(originalBitmap.getWidth() * scale),
        (int)(originalBitmap.getHeight() * scale),
        true));
}

private void fadeIn() {
    AlphaAnimation animation = new AlphaAnimation(0, 1);
    animation.setDuration(500);
    img.startAnimation(animation);
    img.setVisibility(View.VISIBLE);
}

private void fadeOut() {
    AlphaAnimation animation = new AlphaAnimation(1, 0);
    animation.setDuration(500);
    img.startAnimation(animation);
    img.setVisibility(View.INVISIBLE);
}

```

```

    }

    private void bounceIn() {
        ScaleAnimation animation = new ScaleAnimation(0, 1, 0, 1);
        animation.setDuration(500);
        animation.setFillAfter(true);
        img.startAnimation(animation);
    }
}

```

Code inside activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.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=".MainActivity">

    <Button
        android:id="@+id/btninvert"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Invert"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.08"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.55" />

    <Button
        android:id="@+id/btngrey"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="GrayScale"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.876"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.55" />

    <ImageView
        android:id="@+id/imgvw"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.124"

```

```
app:srcCompat="@drawable/fruit" />
```

```
<Button
```

```
    android:id="@+id/btnres"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Reset"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.498"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.969" />
```

```
<Button
```

```
    android:id="@+id/btnmove"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Move"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.498"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@id/btninvert"  
    app:layout_constraintVertical_bias="0.088" />
```

```
<Button
```

```
    android:id="@+id/btnrotate"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Rotate"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.884"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@id/btninvert"  
    app:layout_constraintVertical_bias="0.339" />
```

```
<Button
```

```
    android:id="@+id/btnscale"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Scale"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.08"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toBottomOf="@id/btninvert"  
    app:layout_constraintVertical_bias="0.339" />
```

```
<Button
```

```
    android:id="@+id/btnzoomin"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Zoom In"
```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.877"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@id/btninvert"
app:layout_constraintVertical_bias="0.088" />
```

```
<Button
    android:id="@+id/btnzoomout"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Zoom Out"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.086"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/btninvert"
    app:layout_constraintVertical_bias="0.088" />
```

```
<Button
    android:id="@+id/btnfadein"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Fade In"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.082"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/btnmove"
    app:layout_constraintVertical_bias="0.457" />
```

```
<Button
    android:id="@+id/btnfadeout"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Fade Out"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.879"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/btnmove"
    app:layout_constraintVertical_bias="0.457" />
```

```
<Button
    android:id="@+id/btnbounce"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Bounce In"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.458"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/btnmove"
    app:layout_constraintVertical_bias="0.127" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

Code inside AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.Imgeditor"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

OUTPUT:



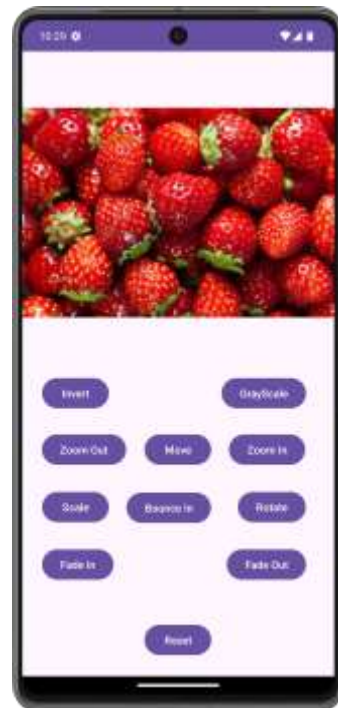
Invert:



Grayscale:



Zoomed -IN:



Zoomed-OUT:



Scale:



Bounce -IN:



Rotate:



Fade - IN:



Fade - OUT:

