

Experiment – 15

Aim: Design an application to perform various animations on a particular image

Solution:

Step 1: Create an anim resource directory

To create a animation, you need to create anim folder by selecting it and choosing “New”, then “android resource directory” and entering “anim” as the name and type as anim.

Step 2: Add all animations files:

Create all animation transistions under anim directory

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">

<ImageView
    android:id="@+id/logoImage"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:srcCompat="@drawable/download"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintBottom_toTopOf="@+id/rotBtn"/>

<Button
    android:id="@+id/blinkBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Blink"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/rotBtn"
    app:layout_constraintTop_toBottomOf="@+id/logoImage"
    app:layout_constraintBottom_toTopOf="@+id/moveBtn"/>

<Button
    android:id="@+id/rotBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Rotate"
    app:layout_constraintStart_toEndOf="@+id/blinkBtn"
    app:layout_constraintEnd_toStartOf="@+id/fadeBtn"
    app:layout_constraintTop_toBottomOf="@+id/logoImage"
```

```

        app:layout_constraintBottom_toTopOf="@+id/slideBtn"/>

<Button
    android:id="@+id/fadeBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Fade"
    app:layout_constraintStart_toEndOf="@+id/rotBtn"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/logoImage"
    app:layout_constraintBottom_toTopOf="@+id/zoomBtn"/>

<Button
    android:id="@+id/moveBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Move"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toStartOf="@+id/slideBtn"
    app:layout_constraintTop_toBottomOf="@+id/blinkBtn"
    app:layout_constraintBottom_toBottomOf="parent"/>

<Button
    android:id="@+id/slideBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Slide"
    app:layout_constraintStart_toEndOf="@+id/moveBtn"
    app:layout_constraintEnd_toStartOf="@+id/zoomBtn"
    app:layout_constraintTop_toBottomOf="@+id/rotBtn"
    app:layout_constraintBottom_toBottomOf="parent"/>

<Button
    android:id="@+id/zoomBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Zoom"
    app:layout_constraintStart_toEndOf="@+id/slideBtn"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/fadeBtn"
    app:layout_constraintBottom_toBottomOf="parent"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

blink.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <alpha android:fromAlpha="0.0"
        android:toAlpha="1.0"
        android:duration = "1000"

```

```
    android:repeatMode = "reverse"
    android:repeatCount = "infinite"
    android:interpolator = "@android:anim/accelerate_interpolator" />
```

```
</set>
```

rotate.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <rotate android:fromDegrees="0"
        android:toDegrees="360"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration = "5000" />
    <rotate android:fromDegrees="360"
        android:toDegrees="0"
        android:pivotX="50%"
        android:pivotY="50%"
        android:startOffset = "6000"
        android:duration = "5000" />
</set>
```

fade.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <alpha android:fromAlpha="0"
        android:toAlpha="1"
        android:duration = "2000"
        android:interpolator = "@android:anim/accelerate_interpolator" />
    <alpha android:fromAlpha="1"
        android:toAlpha="0"
        android:duration = "2000"
        android:interpolator = "@android:anim/accelerate_interpolator" />
</set>
```

move.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <translate android:fromXDelta="0%"
        android:toXDelta="75%"
        android:duration = "2000"
        android:interpolator = "@android:anim/linear_interpolator" />
</set>
```

slide.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <scale android:fromYScale="1.0"
        android:toYScale="0.0"
        android:fromXScale="1.0"
```

```
        android:toXScale="1.0"
        android:duration = "2000"
        android:interpolator = "@android:anim/linear_interpolator"/>
</set>
```

zoom.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <scale android:fromXScale="1"
        android:toXScale="5"
        android:fromYScale="1"
        android:toYScale="5"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration = "5000" />
    <scale android:fromXScale="1"
        android:toXScale="0.2"
        android:fromYScale="1"
        android:toYScale="0.2"
        android:pivotX="50%"
        android:pivotY="50%"
        android:duration = "5000" />
</set>
```

MainActivity.java:

```
package com.example.animationsexample;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import android.widget.Button;
import android.widget.ImageView;

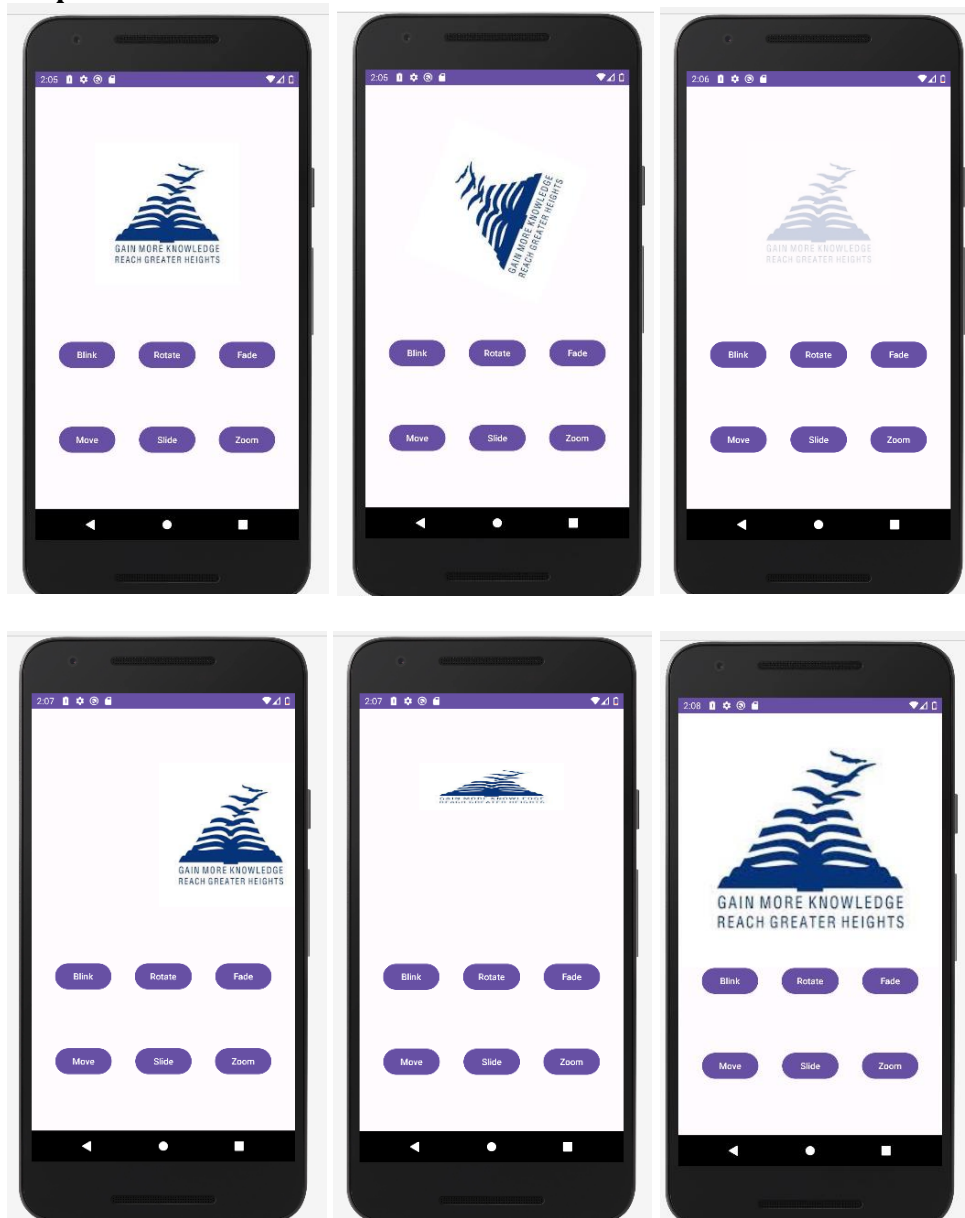
public class MainActivity extends AppCompatActivity {
    ImageView im;
    Button bli,fad,mov,rot,sli,zoom;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        im = findViewById(R.id.logoImage);
        bli = findViewById(R.id.blinkBtn);
        rot = findViewById(R.id.rotBtn);
        fad = findViewById(R.id.fadeBtn);
        mov = findViewById(R.id.moveBtn);
        sli = findViewById(R.id.slideBtn);
        zoom = findViewById(R.id.zoomBtn);
    }
}
```

```

bli.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation animation =
AnimationUtils.loadAnimation(getApplicationContext(),R.anim.blink);
        im.startAnimation(animation);
    }
});
rot.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation animation =
AnimationUtils.loadAnimation(getApplicationContext(),R.anim.rotate);
        im.startAnimation(animation);
    }
});
fad.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation animation =
AnimationUtils.loadAnimation(getApplicationContext(),R.anim.fade);
        im.startAnimation(animation);
    }
});
mov.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation animation =
AnimationUtils.loadAnimation(getApplicationContext(),R.anim.move);
        im.startAnimation(animation);
    }
});
sli.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation animation =
AnimationUtils.loadAnimation(getApplicationContext(),R.anim.slide);
        im.startAnimation(animation);
    }
});
zoom.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation animation =
AnimationUtils.loadAnimation(getApplicationContext(),R.anim.zoom);
        im.startAnimation(animation);
    }
});
}
}

```

Output:



Experiment – 16

Aim: Design an application to find the current location of user.

Solution:

Step 1: Add Google play location service dependency

You need to go to your app-level Gradle file and add the google play service dependency. Paste the below code under your dependencies section.

```
implementation("com.google.android.gms:play-services-location:21.0.1")
```

Step 2: Provide permissions in Manifest

Go to your manifest file and add the permission for internet, fine and coarse location access. You can find the permissions in the below code.

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

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">

    <TextView
        android:id="@+id/addressTxt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="User Address"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toTopOf="@+id/getBtn"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/getBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Get Current Location"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/addressTxt"
        app:layout_constraintBottom_toBottomOf="parent" />
```

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

MainActivity.java:

```
package com.example.findmylocation;
```

```
import androidx.annotation.RequiresApi;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
```

```
import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Location;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
```

```
import com.google.android.gms.location.FusedLocationProviderClient;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.tasks.OnSuccessListener;
import com.google.android.gms.tasks.Task;
```

```
public class MainActivity extends AppCompatActivity {
    TextView tv;
    Button locBtn;
    FusedLocationProviderClient locationProviderClient;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tv = findViewById(R.id.addressTxt);
        locBtn = findViewById(R.id.getBtn);
        locationProviderClient = LocationServices.getFusedLocationProviderClient(this);
        locBtn.setOnClickListener(new View.OnClickListener() {
            @RequiresApi(api = Build.VERSION_CODES.M)
            @Override
            public void onClick(View view) {
```

```
if(ActivityCompat.checkSelfPermission(MainActivity.this,Manifest.permission.ACCESS_COARSE_LOCATION)!=PackageManager.PERMISSION_GRANTED){
    requestPermissions(new String[]{Manifest.permission.ACCESS_COARSE_LOCATION},1);
    return;
}
Task<Location> location = locationProviderClient.getLastLocation();
location.addOnSuccessListener(new OnSuccessListener<Location>() {
    @Override
    public void onSuccess(Location location) {
        double latitude = location.getLatitude();
        double longitude = location.getLongitude();
```


Output: