

Experiment-4:

Develop an application to set an image as wallpaper. On click of a button, the wallpaper image should start to change randomly every 30 seconds.

Program:**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:id="@+id/main"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">
```

<Button

```
    android:id="@+id/button"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Button"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.474" />
```

<TextView

```
    android:id="@+id/textView"

    android:layout_width="308dp"

    android:layout_height="123dp"

    android:text="WALLPAPER CHANGER"

    android:textAlignment="center"

    android:textSize="34sp"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintHorizontal_bias="0.495"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    app:layout_constraintVertical_bias="0.263" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

MainActivity.java:

```
package com.example.myapplication;

import android.annotation.SuppressLint;

import android.app.WallpaperManager;

import android.graphics.Bitmap;

import android.graphics.drawable.BitmapDrawable;

import android.graphics.drawable.Drawable;

import android.os.Bundle;

import android.widget.Button;

import androidx.activity.EdgeToEdge;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.graphics.Insets;

import androidx.core.view.ViewCompat;

import androidx.core.view.WindowInsetsCompat;

import java.io.IOException;

import java.util.Timer;

import java.util.TimerTask;

public class MainActivity extends AppCompatActivity {

    Button button;

    Timer timer;

    Drawable drawable;

    WallpaperManager wpm;
```

```
int prev=1;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    setContentView(R.layout.activity_main);
```

```
    timer = new Timer();
```

```
    wpm = WallpaperManager.getInstance(this);
```

```
    button = findViewById(R.id.button);
```

```
    button.setOnClickListener(view -> setWallpaper()
```

```
); }
```

```
private void setWallpaper() {
```

```
    timer.schedule(new TimerTask() {
```

```
        @SuppressWarnings("UseCompatLoadingForDrawables")
```

```
        @Override
```

```
        public void run() {
```

```
            if (prev == 1) {
```

```
                drawable = getResources().getDrawable(R.drawable.im1);
```

```
                prev = 2;
```

```
            } else if (prev == 2) {
```

```
                drawable = getResources().getDrawable(R.drawable.im2);
```

```
                prev = 3;
```

```
            } else if (prev == 3) {
```

```
        drawable =  
            getResources().getDrawable(R.drawable.im3);  
        prev = 4;  
    } else if (prev == 4) {  
        drawable =  
            getResources().getDrawable(R.drawable.im4);  
        prev = 1;  
    }  
    Bitmap wallpaper = ((BitmapDrawable)  
        drawable).getBitmap();try {  
        wpm.setBitmap(wallpaper);  
    } catch (IOException e) {  
        throw new RuntimeException(e);  
    } } },0,3000); } }
```