Activity_main.xml code:-

```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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        android:textSize="50px"
        android:textColor="#F44336"
        android:background="@color/white"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.446"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.446" />

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

MainActivity.java

```java
package com.example.stringmanipulation;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

Acitivity_main.xml :-

```xml
<?xmlversion="1.0"encoding="utf-8"?>
```

```xml
<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">


    <ImageButton

        android:id="@+id/imageButton"

        android:layout_width="202dp"

        android:layout_height="100dp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.387"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.245"

        app:srcCompat="@color/s1BgColor"/>


    <TextView

        android:id="@+id/textView"

        android:layout_width="109dp"

        android:layout_height="76dp"

        android:text="@string/s1String"

        android:textColor="@color/s1TextColor"

        android:textSize="20sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"/>
```

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

string.xml :-

```
<resources>

    <string name="app_name">practical2</string>

    <string name="s1String">This Is a Second Practical </string>

</resources>
```

colors.xml :-

```
<?xml version="1.0" encoding="utf-8"?>

<resources>

    <color name="purple_200">#FFBB86FC</color>

    <color name="purple_500">#FF6200EE</color>

    <color name="purple_700">#FF3700B3</color>

    <color name="teal_200">#FF03DAC5</color>

    <color name="teal_700">#FF018786</color>

    <color name="black">#FF000000</color>

    <color name="white">#FFFFFFFF</color>

    <color name="s1TextColor">#B85F5F</color>

    <color name="s1BgColor">#E8DA5B</color>

</resources>
```

==Practical 3: Write a program to create UI with one screen having radio button of the types of cars. On selecting any car name, next screen should show car details.==

```
Acitivity_main1.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">


    <TextView
        android:id="@+id/textView2"
        android:layout_width="230dp"
        android:layout_height="92dp"
        android:text="SELECT CAR"
        android:textSize="34sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```xml
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.105" />

    <RadioGroup
        android:id="@+id/group"
        android:layout_width="231dp"
        android:layout_height="195dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <RadioButton
            android:id="@+id/radioButton3"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Maruti 800"
            android:textSize="20sp" />

        <RadioButton
            android:id="@+id/radioButton4"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Renault duster"
            android:textSize="20sp" />

        <RadioButton
            android:id="@+id/radioButton5"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Scorpio"
            android:textSize="20sp" />
    </RadioGroup>

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

Acitivity_main2.xml :-

```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"
    android:layout_width="match_parent"
    android:layout_height="match_parent">


    <TextView
        android:id="@+id/textView"
        android:layout_width="124dp"
```

```xml
        android:layout_height="72dp"
        android:layout_alignParentBottom="true"
        android:layout_alignParentEnd="true"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Activity 2"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />


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

Acitivity_main3.xml :-
```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">

    <TextView
        android:id="@+id/textView3"
        android:layout_width="115dp"
        android:layout_height="91dp"
        android:text="TextView"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Acitivity_main4.xml :-
```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">

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

AndroidManifest.xml :-
```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:supportsRtl="true"
        android:theme="@style/Theme.Carexample"
        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>
        <activity
            android:name=".MainActivity2">
         </activity>
        <activity
            android:name=".MainActivity3">
        </activity>
        <activity
            android:name=".MainActivity4">
        </activity>

        <meta-data
            android:name="android.app.lib_name"
            android:value="" />

    </application>

</manifest>
```

MainAcitivity.java :-
```java
package com.example.carexample;
```

```java
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.RadioGroup;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroup ;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main1);
        radioGroup =(RadioGroup)  findViewById(R.id .group );
        radioGroup .setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(RadioGroup radioGroup, int i) {
                switch (i ) {
                    case R.id.radioButton3:
                        Intent intent = new Intent(getBaseContext() ,MainActivity2 .class );
                        startActivity(intent);
                        break;
                    case R.id.radioButton4:
                        Intent intent1 = new Intent(getBaseContext() ,MainActivity3 .class );
                        startActivity(intent1);
                        break;
                    case R.id.radioButton5:
                        Intent intent2 = new Intent(getBaseContext() ,MainActivity4 .class );
                        startActivity(intent2);
                        break;
                    default :
                        Toast.makeText(MainActivity.this, "Another Case", Toast.LENGTH_SHORT).show();
                }
            }
        }) ;

    }
}


MainAcitivity2.java :-
package com.example.carexample;

import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity2 extends AppCompatActivity {
    TextView  textView ;
```

```java
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);


        textView =(TextView) findViewById(R.id.textView );
        textView .setText("Car was launched on 14 December 1983 and " +
                    "manufactured by Maruti Suzuki in India");

        //Toast.makeText(this, "Activity 2", Toast.LENGTH_SHORT).show();
    }
}


MainAcitivity3.java :-
package com.example.carexample;

import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;


import androidx.appcompat.app.AppCompatActivity;

public class MainActivity3 extends AppCompatActivity {
    TextView  textView3 ;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main3);



        textView3 =(TextView) findViewById(R.id.textView3);
        textView3 .setText("Car was launched in year 2012 and " +
                    "Renault India Private Limted " +
                    "is a wholly owned subsidiary " +
                    "of Renault S.A., France");

        Toast.makeText(this, "Activity 3", Toast.LENGTH_SHORT).show();
    }
}


MainAcitivity4.java :-
package com.example.carexample;
```

```java
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;


import androidx.appcompat.app.AppCompatActivity;

public class MainActivity4 extends AppCompatActivity {
    TextView  textView4 ;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main4);



        textView4 =(TextView) findViewById(R.id.textView4 );
        textView4 .setText("Car was launched in June 2022 and manufactured by Mahindra");

        Toast.makeText(this, "Activity 4", Toast.LENGTH_SHORT).show();
    }
}
```

<mark>Practical 4 :- Write a program for android application to demonstrate android life cycle stages.</mark>

activity_main.xml :-

```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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Main_Activity.java :-

```java
package com.example.practical4;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
public class MainActivity extends AppCompatActivity {
```

```java
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle","onCreate invoked");
    }

    @Override
    protected void onStart() {
        super.onStart();
        Log.d("lifecycle","onStart invoked");
    }

    @Override
    protected void onResume() {
        super.onResume();
        Log.d("lifecycle","onResume invoked");
    }
+
    @Override
    protected void onPause() {
        super.onPause();
        Log.d("lifecycle","onPause invoked");
    }

    @Override
    protected void onStop() {
        super.onStop();
        Log.d("lifecycle","onStop invoked");
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("lifecycle","onRestart invoked");
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("lifecycle","onDestroy invoked");
    }

}
```

Practical 5: Create the application that will change colour of screen based on selected option from the menu.

Activity _main.xml

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

```xml
    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">

    <LinearLayout
        android:id="@+id/linear"
        android:layout_width="408dp"
        android:layout_height="659dp"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Hello World!" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Activity_main.java

```java
package com.example.menu;
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.widget.LinearLayout;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    LinearLayout l;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        l=(LinearLayout) findViewById(R.id .linear);
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.example_menu , menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        Toast.makeText(this, "Selected Item"+item.getTitle() , Toast.LENGTH_SHORT).show();
        int id = item.getItemId();
        switch (id){
```

```
        case R.id.item1:
            l.setBackgroundColor(Color.RED);
            Toast.makeText(getApplicationContext(),"Item 1 Selected",Toast.LENGTH_LONG).show();
            return true;
        case R.id.item2:
            l.setBackgroundColor(Color.MAGENTA  );
            Toast.makeText(getApplicationContext(),"Item 2 Selected",Toast.LENGTH_LONG).show();
            return true;
        case R.id.item3:
            l.setBackgroundColor(Color.GREEN );
            Toast.makeText(getApplicationContext(),"Item 3 Selected",Toast.LENGTH_LONG).show();
            return true;
        default:
            return super.onOptionsItemSelected(item);
        }
    }
}
```

<mark>Practical 6: Write an android application that take input from user and shows messages on screen.</mark>

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/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.424" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter Text"
        app:layout_constraintBottom_toTopOf="@+id/textView"
```

```
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent" />

        <Button
            android:id="@+id/button"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Submit"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/textView" />

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

Activity_main.java
```
package com.example.showmsg;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    Button mbutton;
    EditText medit;
    TextView mtext;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mbutton =(Button)  findViewById(R.id .button );
        mbutton .setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                medit =(EditText)  findViewById(R.id .editText );
                mtext =(TextView)  findViewById(R.id .textView );
                mtext.setText(" Wel Come "+medit.getText() .toString() +"!");
            }
        }) ;
    }
}
```

Practical 7: Create foreground application that will display toast (Message) on specific interval time.

Acitivity_main.xml :-

```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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainAcitivity.java :-

```java
package com.example.toastinterval;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    private Toast toast;

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

        toast = Toast.makeText(this, "This is Toast", Toast.LENGTH_SHORT);

        Thread t = new Thread(new Runnable() {
            @Override
            public void run() {
                for (int i = 0; i < 1000; i++) {
                    try {
                        Thread.sleep(1000);
                        toast.show();
                        Thread.sleep(1000);
                    } catch (InterruptedException e) {
```

```
            e.printStackTrace();
          }
        }
      }
    });
    t.start();
  }
}
```

activity_main.xml :-

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    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="#168BC34A"
    android:orientation="vertical"
    tools:context=".MainActivity">


    <!-- Heading of the activity -->
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:layout_marginBottom="20dp"
        android:fontFamily="@font/roboto"
        android:text="@string/heading"
        android:textAlignment="center"
        android:textColor="@android:color/holo_green_light"
        android:textSize="24sp"
        android:textStyle="bold" />
```

```xml
<!-- Button to display first fragment -->
<Button
    android:id="@+id/button1"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginEnd="20dp"
    android:background="#4CAF50"
    android:fontFamily="@font/roboto"
    android:onClick="selectFragment"
    android:text="@string/fragment1_button"
    android:textColor="@android:color/background_light"
    android:textSize="18sp"
    android:textStyle="bold" />

<!-- Button to display second fragment -->
<Button
    android:id="@+id/button2"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_marginStart="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="20dp"
    android:layout_marginBottom="20dp"
    android:background="#4CAF50"
    android:fontFamily="@font/roboto"
    android:onClick="selectFragment"
    android:text="@string/fragment2_button"
    android:textColor="@android:color/background_light"
    android:textSize="18sp"
    android:textStyle="bold" />
```

```xml
    <!-- Adding Fragment element in the activity -->
    <fragment
        android:id="@+id/fragment_section"
        android:name="com.example.fragment.fragment1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginStart="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        tools:layout="@layout/fragment1" />

</LinearLayout>
```

fragement1.xml :-
```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:background="#5C52CC57"
    android:orientation="vertical">

    <!-- Text to be displayed inside the Fragment -->
    <TextView
        android:id="@+id/textView1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center"
        android:text="@string/fragment1_text1"
```

```
        android:textAlignment="center"

        android:textColor="@android:color/background_light"

        android:textSize="24sp"

        android:textStyle="bold" />



</LinearLayout>




fragement2.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:background="#5C3473A6"

    android:orientation="vertical">



    <!-- Text to be displayed inside the Fragment -->

    <TextView

        android:id="@+id/textView2"

        android:layout_width="match_parent"

        android:layout_height="match_parent"

        android:fontFamily="@font/roboto"

        android:gravity="center"

        android:text="@string/fragment2_text1"

        android:textAlignment="center"

        android:textColor="@android:color/background_light"

        android:textSize="24sp"

        android:textStyle="bold" />



</LinearLayout>
```

AndroidManifest.xml :-

```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:supportsRtl="true"
        android:theme="@style/Theme.Fragment"
        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>

            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
        </activity>
    </application>

</manifest>
```

MainActivity.java :-

package com.example.fragment;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.app.Fragment;

import android.app.FragmentManager;

import android.app.FragmentTransaction;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

    // method for displaying the appropriate
    // fragment according to the clicked button
    public void selectFragment(View view) {
        // creating object for Fragment
        Fragment fr;
        // displaying first fragment
        // if button1 is clicked
        if(view == findViewById(R.id.button1)) {
            fr = new fragment1() ;
        }

```java
        // displaying second fragment

        // if button2 is clicked

        else {

            fr = new fragment2() ;

        }


        FragmentManager fm = getFragmentManager();

        // fragment transaction to add or replace

        // fragments while activity is running

        FragmentTransaction fragmentTransaction = fm.beginTransaction();

        fragmentTransaction.replace(R.id.fragment_section, fr);

        // making a commit after the transaction

        // to assure that the change is effective

        fragmentTransaction.commit();

    }

}
```

fragment1.java :-

```java
package com.example.fragment;


import android.app.Fragment;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;


public class fragment1 extends Fragment  {

    @Override

    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {


        // inflating the layout of the fragment
```

```
        // and returning the view component

        return inflater.inflate(R.layout.fragment1 , container, false);

    }

}


fragment2.java :-

package com.example.fragment;

import android.app.Fragment;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;


public class fragment2 extends Fragment{

    @Override

    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {


        // inflating the layout of the fragment

        // and returning the view component

        return inflater.inflate(R.layout.fragment2 , container, false);

    }

}
```

Practical 13:- Write a background service that will open activity on specific time.

Activity _main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout  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/button"
        android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"
        android:text="Start"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="103dp" />

    <EditText
        android:id="@+id/time"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="22dp"
        android:ems="10" />

</RelativeLayout>
```

my broadcast receiver

```java
package com.example.alarm;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.MediaPlayer;
import android.widget.Toast;

public class MyBroadcastReceiver extends BroadcastReceiver {
    MediaPlayer mp;
    @Override
    public void onReceive(Context context, Intent intent) {
        mp=MediaPlayer.create(context, R.raw.alarm );
        mp.start();
        Toast.makeText(context, "Alarm....", Toast.LENGTH_LONG).show();
    }
}
```

Activity_main.java

```java
package com.example.alarm;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity {
    Button start;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        start= findViewById(R.id.button);

        start.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                startAlert();
            }
        });
    }

    public void startAlert(){
        EditText text = findViewById(R.id.time);
        int i = Integer.parseInt(text.getText().toString());
        Intent intent = new Intent(this, MyBroadcastReceiver.class);
        PendingIntent pendingIntent = PendingIntent.getBroadcast(
                this.getApplicationContext(), 234324243, intent, 0);
        AlarmManager alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
        alarmManager.set(AlarmManager.RTC_WAKEUP, System.currentTimeMillis()
                + (i * 1000), pendingIntent);
        Toast.makeText(this, "Alarm set in " + i + " seconds",Toast.LENGTH_LONG).show();
    }
}
```

<mark>Practical 14 : Demonstrate use of shared preferences.</mark>

Acitivity_main.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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/textview"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="32dp"
        android:text="Shared Preferences Demo"
```

```xml
        android:textColor="@android:color/black"
        android:textSize="24sp" />

    <!--EditText to take the data from the user
        and save the data in SharedPreferences-->
    <EditText
        android:id="@+id/edit1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textview"
        android:layout_marginStart="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp"
        android:hint="Enter your Name"
        android:padding="10dp" />

    <!--EditText to take the data from the user and
         save the data in SharedPreferences-->
    <EditText
        android:id="@+id/edit2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/edit1"
        android:layout_marginStart="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp"
        android:hint="Enter your Age"
        android:padding="10dp"
        android:inputType="number" />
</RelativeLayout>
```

MainAcitivity.java :-

```java
package com.example.sharedpreferences;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.content.SharedPreferences;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    private EditText name, age;

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

```java
      name = findViewById(R.id.edit1);
      age = findViewById(R.id.edit2);
   }

   // Fetch the stored data in onResume()
   // Because this is what will be called
   // when the app opens again
   @Override
   protected void onResume() {
      super.onResume();

      // Fetching the stored data
      // from the SharedPreference
      SharedPreferences sh = getSharedPreferences("MySharedPref", MODE_PRIVATE);

      String s1 = sh.getString("name", "");
      int a = sh.getInt("age", 0);

      // Setting the fetched data
      // in the EditTexts
      name.setText(s1);
      age.setText(String.valueOf(a));
   }

   // Store the data in the SharedPreference
   // in the onPause() method
   // When the user closes the application
   // onPause() will be called
   // and data will be stored
   @Override
   protected void onPause() {
      super.onPause();

      // Creating a shared pref object
      // with a file name "MySharedPref"
      // in private mode
      SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref", MODE_PRIVATE);
      SharedPreferences.Editor myEdit = sharedPreferences.edit();

      // write all the data entered by the user in SharedPreference and apply
      myEdit.putString("name", name.getText().toString());
      myEdit.putInt("age", Integer.parseInt(age.getText().toString()));
      myEdit.apply();
   }
}
```