***SLIP NO 4***

***Q1) Create a Simple Application, that performs Arithmetic Operations. (Use constraint layout)***

**Xml file**

*<?*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**="match\_parent"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="120dp"**android:text**="Arithmetic Operator"**android:textAlignment**="center"**android:textColor**="#F60101"**android:textSize**="40dp"**android:textStyle**="bold"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintHorizontal\_bias**="1.0"**app:layout\_constraintStart\_toStartOf**="parent"**app:layout\_constraintTop\_toTopOf**="parent"** />  
  
<**EditText**android:id**="@+id/fnum"**android:layout\_width**="match\_parent"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="16dp"**android:hint**="First Number"**android:inputType**="number"**android:layout\_marginLeft**="30dp"**android:layout\_marginRight**="30dp"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintHorizontal\_bias**="1.0"**app:layout\_constraintTop\_toBottomOf**="@+id/textView"**/>  
  
<**EditText**android:id**="@+id/snum"**android:layout\_width**="match\_parent"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="16dp"**android:hint**="Second Number"**android:layout\_marginLeft**="30dp"**android:layout\_marginRight**="30dp"**android:inputType**="number"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintStart\_toStartOf**="parent"**app:layout\_constraintTop\_toBottomOf**="@+id/fnum"** />  
  
<**TextView**android:id**="@+id/res"**android:layout\_width**="wrap\_content"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="36dp"**android:text**="RESULT"**android:textSize**="20dp"**android:textStyle**="bold"**app:layout\_constraintEnd\_toEndOf**="@+id/snum"**app:layout\_constraintHorizontal\_bias**="0.097"**app:layout\_constraintStart\_toStartOf**="parent"**app:layout\_constraintTop\_toBottomOf**="@+id/snum"** />  
  
  
<**Button**android:id**="@+id/btn1"**android:layout\_width**="wrap\_content"**android:layout\_height**="wrap\_content"**android:layout\_marginStart**="48dp"**android:layout\_marginTop**="28dp"**android:text**="ADDITION"**app:layout\_constraintStart\_toStartOf**="parent"**app:layout\_constraintHorizontal\_bias**="0.097"**app:layout\_constraintTop\_toBottomOf**="@+id/res"** />  
  
<**Button**android:id**="@+id/btn2"**android:layout\_width**="wrap\_content"**android:layout\_height**="wrap\_content"**android:layout\_marginStart**="236dp"**android:layout\_marginTop**="28dp"**android:text**="SUBSTRACTION"**app:layout\_constraintStart\_toStartOf**="parent"**app:layout\_constraintHorizontal\_bias**="0.097"**app:layout\_constraintTop\_toBottomOf**="@+id/res"** />  
  
<**Button**android:id**="@+id/btn3"**android:layout\_width**="wrap\_content"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="100dp"**android:layout\_marginEnd**="232dp"**android:text**="MULTIPLICATION"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintHorizontal\_bias**="0.097"**app:layout\_constraintTop\_toBottomOf**="@+id/res"** />  
  
<**Button**android:id**="@+id/btn4"**android:layout\_width**="wrap\_content"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="100dp"**android:layout\_marginEnd**="64dp"**android:text**="DIVISION"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintHorizontal\_bias**="0.097"**app:layout\_constraintTop\_toBottomOf**="@+id/res"** />  
  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**Java file**

**public class** MainActivity**extends** AppCompatActivity{  
EditTextfnum;  
EditTextsnum;  
Button btn1;  
Button btn2;  
Button btn3;  
Button btn4;  
TextViewres;  
  
  
  
@Override  
**protected void** onCreate(Bundle savedInstanceState) {  
**super**.onCreate(savedInstanceState);  
setContentView(R.layout.*activity\_main*);  
  
btn1=(Button) findViewById(R.id.*btn1*);  
btn2=(Button) findViewById(R.id.*btn2*);  
btn3=(Button) findViewById(R.id.*btn3*);  
btn4=(Button) findViewById(R.id.*btn4*);  
fnum= (EditText)findViewById(R.id.*fnum*);  
snum=(EditText)findViewById(R.id.*snum*);  
res=(TextView)findViewById(R.id.*res*);  
  
  
btn1.setOnClickListener(**new** View.OnClickListener() {  
@Override  
**public void** onClick(View view) {  
**int** n1 = Integer.*parseInt*(fnum.getText().toString());  
**int** n2 = Integer.*parseInt*(snum.getText().toString());  
  
**int** result = n1+n2;  
  
res.setText(String.*valueOf*(result));  
  
 }  
 });  
  
  
btn2.setOnClickListener(**new** View.OnClickListener() {  
@Override  
**public void** onClick(View view) {  
**int** n1 = Integer.*parseInt*(fnum.getText().toString());  
**int** n2 = Integer.*parseInt*(snum.getText().toString());  
  
**int** result = n1-n2;  
  
res.setText(String.*valueOf*(result));  
  
 }  
 });  
  
btn3.setOnClickListener(**new** View.OnClickListener() {  
@Override  
**public void** onClick(View view) {  
**int** n1 = Integer.*parseInt*(fnum.getText().toString());  
**int** n2 = Integer.*parseInt*(snum.getText().toString());  
  
**int** result = n1\*n2;  
  
res.setText(String.*valueOf*(result));  
  
 }  
 });  
  
btn4.setOnClickListener(**new** View.OnClickListener() {  
@Override  
**public void** onClick(View view) {  
**int** n1 = Integer.*parseInt*(fnum.getText().toString());  
**int** n2 = Integer.*parseInt*(snum.getText().toString());  
  
**int** result = n1/n2;  
  
res.setText(String.*valueOf*(result));  
  
 }  
 });  
 }  
}

***Q2. Create an Android Application that sends the Notification on click of the button and displays the notification message on the second activity***.

**Xml file**

*<?*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**="match\_parent"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="184dp"**android:text**="NOTIFICATION"**android:textAlignment**="center"**android:textSize**="20dp"**android:textStyle**="bold"**android:layout\_marginRight**="40dp"**android:layout\_marginLeft**="40dp"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintHorizontal\_bias**="0.0"**app:layout\_constraintStart\_toStartOf**="parent"**app:layout\_constraintTop\_toTopOf**="parent"** />  
  
<**Button**android:id**="@+id/btn"**android:layout\_width**="match\_parent"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="280dp"**android:text**="NOTIFY"**android:textSize**="20dp"**android:textStyle**="bold"**android:layout\_marginRight**="40dp"**android:layout\_marginLeft**="40dp"**app:layout\_constraintHorizontal\_bias**="0.0"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintTop\_toBottomOf**="@+id/textView"**/>  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**Java file**

**package** com.example.notification;  
  
**import** androidx.appcompat.app.AppCompatActivity;  
**import** androidx.core.app.ActivityCompat;  
**import** androidx.core.app.NotificationCompat;  
**import** androidx.core.app.NotificationManagerCompat;  
  
**import** android.app.Notification;  
**import** android.app.NotificationChannel;  
**import** android.app.NotificationManager;  
**import** android.app.PendingIntent;  
**import** android.content.Intent;  
**import** android.content.pm.PackageManager;  
**import** android.graphics.Bitmap;  
**import** android.graphics.BitmapFactory;  
**import** android.os.Build;  
**import** android.os.Bundle;  
**import** android.view.View;  
**import** android.widget.Button;  
  
**public class** MainActivity**extends** AppCompatActivity**implements** View.OnClickListener{  
  
**final** String CHANNEL\_ID = **"Sanju\_Ki\_Pathshala"**;  
Button btn;  
NotificationManagerCompatnNotificationCompat;  
NotificationManagerCompatnNotificationManagerCompat;  
  
@Override  
**protected void** onCreate(Bundle savedInstanceState) {  
**super**.onCreate(savedInstanceState);  
setContentView(R.layout.*activity\_main*);  
  
createNotificationChannel();  
  
btn= (Button) findViewById(R.id.*btn*);  
  
btn.setOnClickListener(**this**);  
nNotificationManagerCompat= NotificationManagerCompat.*from*(MainActivity.**this**);  
  
 }  
  
@Override  
**public void** onClick(View view) {  
createNotificationManagerCompat(getString(R.string.*app\_name*), getString(R.string.*title*), **1**);  
 }  
  
  
**private void** createNotificationManagerCompat(String title, String msg, **int** notificationId) {  
 title = **"Notification Done"**;  
msg = **"This is Done Notification"**;  
  
nNotificationManagerCompat.cancelAll();  
  
Bitmap bitmap= BitmapFactory.*decodeResource*(getResources(), R.drawable.*baseline\_notifications\_active\_24*);  
  
Intent intent= **new** Intent(MainActivity.**this**, Activity2.**class**);  
  
PendingIntentpendingIntent= PendingIntent.*getActivity*(**this**, **0**, intent, **0**);  
  
Notification notification= **new** NotificationCompat.Builder(**this**, CHANNEL\_ID)  
 .setSmallIcon(R.drawable.*baseline\_notifications\_active\_24*)  
 .setContentTitle(title)  
 .setContentText(msg)  
 .setPriority(NotificationCompat.*PRIORITY\_DEFAULT*)  
  
 .setContentIntent(pendingIntent)  
  
 .setAutoCancel(**true**)  
 .build();  
  
  
**if** (ActivityCompat.*checkSelfPermission*(**this**, android.Manifest.permission.*POST\_NOTIFICATIONS*) != PackageManager.*PERMISSION\_GRANTED*) {  
*// TODO: Consider calling  
// ActivityCompat#requestPermissions  
// here to request the missing permissions, and then overriding  
 // public void onRequestPermissionsResult(int requestCode, String[] permissions,  
 // int[] grantResults)  
 // to handle the case where the user grants the permission. See the documentation  
 // for ActivityCompat#requestPermissions for more details.***return**;  
 }  
nNotificationManagerCompat.notify(notificationId, notification);  
 }  
**private void** createNotificationChannel(){  
**if** (Build.VERSION.*SDK\_INT*>= Build.VERSION\_CODES.*P*){  
CharSequence name = **"Sanju\_Ki\_Pathshala"**;  
  
String desc= **"This is for VIP"**;  
  
**int** imp = NotificationManager.*IMPORTANCE\_DEFAULT*;  
  
NotificationChannel Channel = **new** NotificationChannel(CHANNEL\_ID,name,imp);  
  
Channel.setDescription(desc);  
  
NotificationManagernotificationManager= getSystemService(NotificationManager.**class**);  
notificationManager.createNotificationChannel(Channel);  
 }  
 }  
  
  
}

**create 2nd activity activity.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**=".Activity2"**>  
  
<**TextView**android:id**="@+id/txt"**android:layout\_width**="match\_parent"**android:layout\_height**="wrap\_content"**android:layout\_marginTop**="268dp"**android:text**="Demo"**android:textAlignment**="center"**android:textSize**="30dp"**android:textStyle**="bold"**app:layout\_constraintEnd\_toEndOf**="parent"**app:layout\_constraintTop\_toTopOf**="parent"**/>  
  
</**androidx.constraintlayout.widget.ConstraintLayout**>

**Java second only create 🡪 not write any thing in that**