**Activity Lifecycle**

package com.example.actlifecycle;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.widget.Toast;  
  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 Toast.*makeText*(this, "App is created", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 protected void onStart() {  
 super.onStart();  
 Toast.*makeText*(this, "App is now visible", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 protected void onResume() {  
 super.onResume();  
 Toast.*makeText*(this, "App is now interactive", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 protected void onPause() {  
 super.onPause();  
 Toast.*makeText*(this, "App is now paused", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 protected void onStop() {  
 super.onStop();  
 Toast.*makeText*(this, "App is now stopped", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 protected void onRestart() {  
 super.onRestart();  
 Toast.*makeText*(this, "App is now restarted", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 @Override  
 protected void onDestroy() {  
 super.onDestroy();  
 Toast.*makeText*(this, "App is now destroyed", Toast.*LENGTH\_SHORT*).show();  
 }  
}

**Intents**

package com.example.intentprog;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
  
public class MainActivity extends AppCompatActivity {  
  
 EditText e;  
 Button b;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 e=findViewById(R.id.*edittext*);  
 b=findViewById(R.id.*button*);  
  
 b.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String name = e.getText().toString();  
 Intent i1=new Intent(MainActivity.this, SecondActivity.class);  
 i1.putExtra("Text",name);  
 startActivity(i1);  
 }  
 });  
 }  
  
}

package com.example.intentprog;  
  
import ndroid.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
public class SecondActivity extends AppCompatActivity {  
  
 TextView received;  
 Button button;  
 String text;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_second*);  
  
 text=getIntent().getExtras().getString(“Text”);  
 received=findViewById(R.id.*receivedtext*);  
 received.setText(text);  
  
 button=findViewById(R.id.*button2*);  
 button.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent i2=new Intent(SecondActivity.this,MainActivity.class);  
 startActivity(i2);  
 }  
 });  
 }  
}

**Calculator**

package com.example.calendarprog;  
  
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 {  
 private Button zero;  
 private Button one;  
 private Button two;  
 private Button three;  
 private Button four;  
 private Button five;  
 private Button six;  
 private Button seven;  
 private Button eight;  
 private Button nine;  
 private Button plus;  
 private Button minus;  
 private Button product;  
 private Button divide;  
 private Button equals;  
 private Button dot;  
 private Button clear;  
 private EditText info;  
 private TextView result;  
 private final char ADDITION='+';  
 private final char SUBTRACTION='-';  
 private final char MULTIPLICATION='\*';  
 private final char DIVISION='/';  
 private final char EQU=0;  
 private double val1=Double.*NaN*;  
 private double val2;  
 private char ACTION;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 setupUIViews();  
 zero.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"0");  
 }  
 });  
 one.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"1");  
 }  
 });  
 two.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"2");  
 }  
 });  
 three.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"3");  
 }  
 });  
 four.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"4");  
 }  
 });  
 five.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"5");  
 }  
 });  
 six.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"6");  
 }  
 });  
 seven.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"7");  
 }  
 });  
 eight.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"8");  
 }  
 });  
 nine.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 info.setText(info.getText().toString()+"9");  
 }  
 });  
 plus.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION=ADDITION;  
 result.setText(String.*valueOf*(val1)+"+");  
 info.setText(null);  
 }  
 });  
 minus.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION=SUBTRACTION;  
 result.setText(String.*valueOf*(val1)+"-");  
 info.setText(null);  
  
 }  
 });  
 product.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION=MULTIPLICATION;  
 result.setText(String.*valueOf*(val1)+"\*");  
 info.setText(null);  
 }  
 });  
 divide.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION=DIVISION;  
 result.setText(String.*valueOf*(val1)+"/");  
 info.setText(null);  
 }  
 });  
 equals.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 ACTION=EQU;  
 result.setText(result.getText().toString()+String.*valueOf*(val2)+"="+String.*valueOf*(val1));  
 info.setText(null);  
 }  
 });  
 clear.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if(info.getText().length()>0)  
 {  
 CharSequence name=info.getText().toString();  
 info.setText(name.subSequence(0,name.length()-1));  
 }  
 else  
 {  
 val1=Double.*NaN*;  
 val2=Double.*NaN*;  
 info.setText(null);  
 result.setText(null);  
 }  
 }  
 });  
 dot.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 compute();  
 info.setText(info.getText().toString()+".");  
  
 }  
 });  
  
 }  
  
 private void compute()  
 {  
 if(!Double.*isNaN*(val1))  
 {  
 val2=Double.*parseDouble*(info.getText().toString());  
 switch (ACTION)  
 {  
 case ADDITION:  
 val1=val1+val2;  
 break;  
 case SUBTRACTION:  
 val1=val1-val2;  
 break;  
 case MULTIPLICATION:  
 val1=val1\*val2;  
 break;  
 case DIVISION:  
 val1=val1/val2;  
 break;  
 case EQU:  
 break;  
 }  
 }  
 else  
 {  
 val1=Double.*parseDouble*(info.getText().toString());  
 }  
 }  
  
 private void setupUIViews()  
 {  
 one=(Button)findViewById(R.id.*one*);  
 zero=(Button)findViewById(R.id.*zero*);  
 two=(Button)findViewById(R.id.*two*);  
 three=(Button)findViewById(R.id.*three*);  
 four=(Button)findViewById(R.id.*four*);  
 five=(Button)findViewById(R.id.*five*);  
 six=(Button)findViewById(R.id.*six*);  
 seven=(Button)findViewById(R.id.*seven*);  
 eight=(Button)findViewById(R.id.*eight*);  
 nine=(Button)findViewById(R.id.*nine*);  
 plus=(Button)findViewById(R.id.*plus*);  
 minus=(Button)findViewById(R.id.*minus*);  
 product=(Button)findViewById(R.id.*product*);  
 divide=(Button)findViewById(R.id.*division*);  
 dot=(Button)findViewById(R.id.*dot*);  
 equals=(Button)findViewById(R.id.*equals*);  
 clear=(Button)findViewById(R.id.*clear*);  
 info=(EditText)findViewById(R.id.*edittext1*);  
 result=(TextView)findViewById(R.id.*result*);  
 }  
}

**SQLite**

package com.example.sqlite;  
  
import android.app.Activity;  
import android.app.AlertDialog.Builder;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.view.View;  
import android.view.View.OnClickListener;  
import android.widget.Button;  
import android.widget.EditText;  
  
public class MainActivity extends Activity implements OnClickListener  
{  
 EditText Rollno,Name,Marks;  
 Button Insert,Delete,Update,View,ViewAll;  
 SQLiteDatabase db;  
 */\*\* Called when the activity is first created. \*/* @Override  
 public void onCreate(Bundle savedInstanceState)  
 {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 Rollno=(EditText)findViewById(R.id.*Rollno*);  
 Name=(EditText)findViewById(R.id.*Name*);  
 Marks=(EditText)findViewById(R.id.*Marks*);  
 Insert=(Button)findViewById(R.id.*Insert*);  
 Delete=(Button)findViewById(R.id.*Delete*);  
 Update=(Button)findViewById(R.id.*Update*);  
 View=(Button)findViewById(R.id.*View*);  
 ViewAll=(Button)findViewById(R.id.*ViewAll*);  
  
 Insert.setOnClickListener(this);  
 Delete.setOnClickListener(this);  
 Update.setOnClickListener(this);  
 View.setOnClickListener(this);  
 ViewAll.setOnClickListener(this);  
  
 // Creating database and table  
 db=openOrCreateDatabase("StudentDB", Context.*MODE\_PRIVATE*, null);  
 db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name VARCHAR,marks VARCHAR);");  
 }  
 public void onClick(View view)  
 {  
 // Inserting a record to the Student table  
 if(view==Insert)  
 {  
 // Checking for empty fields  
 if(Rollno.getText().toString().trim().length()==0||  
 Name.getText().toString().trim().length()==0||  
 Marks.getText().toString().trim().length()==0)  
 {  
 showMessage("Error", "Please enter all values");  
 return;  
 }  
 db.execSQL("INSERT INTO student VALUES('"+Rollno.getText()+"','"+Name.getText()+  
 "','"+Marks.getText()+"');");  
 showMessage("Success", "Record added");  
 clearText();  
 }  
 // Deleting a record from the Student table  
 if(view==Delete)  
 {  
 // Checking for empty roll number  
 if(Rollno.getText().toString().trim().length()==0)  
 {  
 showMessage("Error", "Please enter Rollno");  
 return;  
 }  
 Cursor c=db.rawQuery("SELECT \* FROM student WHERE rollno='"+Rollno.getText()+"'", null);  
 if(c.moveToFirst())  
 {  
 db.execSQL("DELETE FROM student WHERE rollno='"+Rollno.getText()+"'");  
 showMessage("Success", "Record Deleted");  
 }  
 else  
 {  
 showMessage("Error", "Invalid Rollno");  
 }  
 clearText();  
 }  
 // Updating a record in the Student table  
 if(view==Update)  
 {  
 // Checking for empty roll number  
 if(Rollno.getText().toString().trim().length()==0)  
 {  
 showMessage("Error", "Please enter Rollno");  
 return;  
 }  
 Cursor c=db.rawQuery("SELECT \* FROM student WHERE rollno='"+Rollno.getText()+"'", null);  
 if(c.moveToFirst()) {  
 db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" + Marks.getText() +  
 "' WHERE rollno='"+Rollno.getText()+"'");  
 showMessage("Success", "Record Modified");  
 }  
 else {  
 showMessage("Error", "Invalid Rollno");  
 }  
 clearText();  
 }  
 // Display a record from the Student table  
 if(view==View)  
 {  
 // Checking for empty roll number  
 if(Rollno.getText().toString().trim().length()==0)  
 {  
 showMessage("Error", "Please enter Rollno");  
 return;  
 }  
 Cursor c=db.rawQuery("SELECT \* FROM student WHERE rollno='"+Rollno.getText()+"'", null);  
 if(c.moveToFirst())  
 {  
 Name.setText(c.getString(1));  
 Marks.setText(c.getString(2));  
 }  
 else  
 {  
 showMessage("Error", "Invalid Rollno");  
 clearText();  
 }  
 }  
 // Displaying all the records  
 if(view==ViewAll)  
 {  
 Cursor c=db.rawQuery("SELECT \* FROM student", null);  
 if(c.getCount()==0)  
 {  
 showMessage("Error", "No records found");  
 return;  
 }  
 StringBuffer buffer=new StringBuffer();  
 while(c.moveToNext())  
 {  
 buffer.append("Rollno: "+c.getString(0)+"\n");  
 buffer.append("Name: "+c.getString(1)+"\n");  
 buffer.append("Marks: "+c.getString(2)+"\n\n");  
 }  
 showMessage("Student Details", buffer.toString());  
 }  
 }  
 public void showMessage(String title,String message)  
 {  
 Builder builder=new Builder(this);  
 builder.setCancelable(true);  
 builder.setTitle(title);  
 builder.setMessage(message);  
 builder.show();  
 }  
 public void clearText()  
 {  
 Rollno.setText("");  
 Name.setText("");  
 Marks.setText("");  
 Rollno.requestFocus();  
 }  
}

**Media Player**

package com.example.mediaplayer;  
import androidx.appcompat.app.AppCompatActivity;  
import android.media.MediaPlayer;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;  
public class MainActivity extends AppCompatActivity {  
 Button play, pause, stop, forward, rewind;  
 MediaPlayer mplayer;  
 int startime = 0;  
 int endtime = 0;  
 int ftime = 5000;  
 int btime = 5000;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 play = findViewById(R.id.*play*);  
 pause = findViewById(R.id.*pause*);  
 stop = findViewById(R.id.*stop*);  
 forward = findViewById(R.id.*forward*);  
 rewind = findViewById(R.id.*rewind*);  
 mplayer = MediaPlayer.*create*(this, R.raw.*media\_player*);  
 play.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Toast.*makeText*(MainActivity.this, "Playing", Toast.*LENGTH\_SHORT*).show();  
 mplayer.start();  
 }  
 });  
 pause.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Toast.*makeText*(MainActivity.this, "Media is paused",  
 Toast.*LENGTH\_SHORT*).show();  
 mplayer.pause();  
 }  
 });  
 stop.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Toast.*makeText*(MainActivity.this, "Media is stopped",  
 Toast.*LENGTH\_SHORT*).show();  
 mplayer.stop();  
 }  
 });  
 forward.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 int currentposition = mplayer.getCurrentPosition();  
 int overalltime = mplayer.getDuration();  
 if (currentposition + ftime < overalltime)  
 mplayer.seekTo(currentposition + ftime);  
 }  
 });  
 rewind.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 int currentposition = mplayer.getCurrentPosition();  
 int overalltime = mplayer.getDuration();  
 if (currentposition - btime != overalltime)  
 mplayer.seekTo(currentposition - btime);  
 }  
 });  
 }  
}

**Scaffold, SafeArea**

import 'package:flutter/material.dart';  
  
void main() {  
 runApp(MyApp());  
}  
  
class MyApp extends StatelessWidget {  
 const MyApp({Key key}) : super(key: key);  
  
 @override  
 Widget build(BuildContext context) {  
 return MaterialApp(  
 home: SafeArea(  
 child: Scaffold(  
 appBar: AppBar(  
 title: Text('Box APP'),  
 backgroundColor: Colors.*deepPurple*,  
 ),  
 body: Column(  
 children: [  
 Row(  
 mainAxisAlignment: MainAxisAlignment.start,  
 children: [  
 Container(  
 child: Text("Welcome"),  
 width: 100.0,  
 height: 50.0,  
 margin: EdgeInsets.all(10.0),  
 padding: EdgeInsets.all(5.0),  
 color: Colors.*lightBlue*,  
 alignment: Alignment.*center*,  
 )  
 ],  
 ),  
 Row(  
 mainAxisAlignment: MainAxisAlignment.center,  
 children: [  
 Container(  
 child: Text("To"),  
 width: 100.0,  
 height: 50.0,  
 color: Colors.*amberAccent*,  
 margin: EdgeInsets.all(10.0),  
 padding: EdgeInsets.all(5.0),  
 alignment: Alignment.*center*,  
 )  
 ],  
 ),  
 Row(  
 mainAxisAlignment: MainAxisAlignment.end,  
 children: [  
 Container(  
 child: Text("HELL"),  
 width: 100.0,  
 height: 50.0,  
 color: Colors.*tealAccent*,  
 margin: EdgeInsets.all(10.0),  
 padding: EdgeInsets.all(5.0),  
 alignment: Alignment.*center*,  
 )  
 ],  
 ),  
 Row(  
 mainAxisAlignment: MainAxisAlignment.center,  
 children: [  
 Container(  
 child: Text("SUCKER"),  
 width: 100.0,  
 height: 50.0,  
 color: Colors.*deepOrange*,  
 margin: EdgeInsets.all(10.0),  
 padding: EdgeInsets.all(5.0),  
 alignment: Alignment.*center*,  
 )  
 ],  
 ),  
 Row(  
 mainAxisAlignment: MainAxisAlignment.start,  
 children: [  
 Container(  
 child: Text("FACE"),  
 width: 100.0,  
 height: 50.0,  
 color: Colors.*red*,  
 margin: EdgeInsets.all(10.0),  
 padding: EdgeInsets.all(5.0),  
 alignment: Alignment.*center*,  
 )  
 ],  
 ),  
 ],  
 ),  
 ),  
 ),  
 );  
 }  
}

**Dicee App**

import 'dart:math';  
  
import 'package:flutter/material.dart';  
  
void main() {  
 return runApp(  
 MaterialApp(  
 home: Scaffold(  
 backgroundColor: Colors.*black87*,  
 appBar: AppBar(  
 title: Text('Dicee'),  
 backgroundColor: Colors.*black87*,  
 ),  
 body: DicePage(),  
 ),  
 ),  
 );  
}  
  
class DicePage extends StatefulWidget {  
 @override  
 \_DicePageState createState() => \_DicePageState();  
}  
  
class \_DicePageState extends State<DicePage> {  
 int left = 1;  
 int right = 2;  
 void changeFace() {  
 left = Random().nextInt(6) + 1;  
 right = Random().nextInt(6) + 1;  
 }  
  
 @override  
 Widget build(BuildContext context) {  
 return Center(  
 child: Container(  
 margin: EdgeInsets.all(20.0),  
 padding: EdgeInsets.all(10.0),  
 child: Row(  
 children: <Widget>[  
 Expanded(  
 child: FlatButton(  
 child: Image.asset('images/dice$left.png'),  
 onPressed: () {  
 setState(() {  
 changeFace();  
 });  
 },  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 child: Image.asset('images/dice$right.png'),  
 onPressed: () {  
 setState(() {  
 changeFace();  
 });  
 },  
 ),  
 ),  
 ],  
 ),  
 ),  
 );  
 }  
}

**Xylophone**

import 'package:audioplayers/audio\_cache.dart';  
import 'package:flutter/cupertino.dart';  
import 'package:flutter/material.dart';  
  
void main() {  
 runApp(MyApp());  
}  
  
class MyApp extends StatelessWidget {  
 void playSound(int i) {  
 print("button $i is pressed");  
 var player = AudioCache();  
 player.play("note$i.wav");  
 }  
  
 @override  
 Widget build(BuildContext context) {  
 return MaterialApp(  
 home: SafeArea(  
 child: Scaffold(  
 body: Column(  
 crossAxisAlignment: CrossAxisAlignment.stretch,  
 children: [  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(1);  
 },  
 child: null,  
 color: Colors.red,  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(2);  
 },  
 child: null,  
 color: Colors.green,  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(3);  
 },  
 child: null,  
 color: Colors.yellow,  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(4);  
 },  
 child: null,  
 color: Colors.teal  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(5);  
 },  
 child: null,  
 color: Colors.deepPurple,  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(6);  
 },  
 child: null,  
 color: Colors.amber,  
 ),  
 ),  
 Expanded(  
 child: FlatButton(  
 onPressed: () {  
 playSound(7);  
 },  
 child: null,  
 color: Colors.blue,  
 ),  
 )  
 ],  
 ),  
 ),  
 ),  
 );  
 }  
}