**********Prog 1**********

```
package com.example.visitingcardapplication;
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);
 }
}
```

**********Prog 2**********

```
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 {
EditText e1,e2;
TextView tv;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);
 e1 =(EditText)findViewById(R.id.editText1);
 e2 = (EditText)findViewById(R.id.editText2);
```

```
 tv= (TextView)findViewById(R.id.tv1);
 }
 public void add(View v){
 int a1=Integer.parseInt(e1.getText().toString());
 int a2= Integer.parseInt(e2.getText().toString());
 int result=a1+a2;
tv.setText(""+result);
 }
 public void sub(View v){
 int a1=Integer.parseInt(e1.getText().toString());
 int a2= Integer.parseInt(e2.getText().toString());
 int result=a1-a2;
 tv.setText(""+result);
 }
 public void mul(View v){
 int a1=Integer.parseInt(e1.getText().toString());
 int a2= Integer.parseInt(e2.getText().toString());
 int result=a1*a2;
 tv.setText(""+result);
 }
 public void div(View v){
 float a1=Integer.parseInt(e1.getText().toString());
 float a2= Integer.parseInt(e2.getText().toString());
 float result=a1/a2;
 tv.setText(""+result);
 }
}
```

********PROG 3**********

```
package com.example.signupapplication;
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;
import android.widget.Toast;
import java.util.regex.Pattern;
public class MainActivity extends AppCompatActivity {
 EditText email_Sign, password_Sign;
 Button signUp_btn;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);
 email_Sign=(EditText)findViewById(R.id.SignUp_email);
 password_Sign=(EditText)findViewById(R.id.SignUp_Password);
 signUp_btn =(Button)findViewById(R.id.signUpBtn);
 signUp_btn.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 String email = email_Sign.getText().toString();
 String password = password_Sign.getText().toString();
 if(!isValidPassword(password)) {
 Toast.makeText(MainActivity.this,"Password doesn't match rules",Toast.LENGTH_SHORT).show();
 return;
 }
 Intent intent = new Intent(MainActivity.this,loginActivity.class);
```

```
intent.putExtra("email",email);
intent.putExtra("password",password); startActivity(intent);
}
});
}
Pattern lowerCase= Pattern.compile("^.*[a-z].*$");
Pattern upperCase=Pattern.compile("^.*[A-Z].*$");
Pattern number = Pattern.compile("^.*[0-9].*$");
Pattern special_Chara = Pattern.compile("^.*[^a-zA-Z0-9].*$");
private Boolean isValidPassword(String password){
if(password.length()<8) {
return false;
}
if(!lowerCase.matcher(password).matches()) {
return false;
}
if(!upperCase.matcher(password).matches()) {
return false;
}
if(!number.matcher(password).matches()) {
return false;
}
if(!special_Chara.matcher(password).matches()) {
return false;
}
return true;
}
}

//loginactivity.java
package com.example.signupapplication;
```

```
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;
import android.widget.Toast;
public class loginActivity extends AppCompatActivity {
 EditText emailEditText,passwordEditText;
 Button login_btn;
 int counter=2;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_login2);
 emailEditText=(EditText)findViewById(R.id.EmaileditText);
 passwordEditText=(EditText)findViewById(R.id.passEditText);
 login_btn=(Button)findViewById(R.id.loginBtn);
 String registeredEmail = getIntent().getStringExtra("email");
 String registeredPassword= getIntent().getStringExtra("password");
 login_btn.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {String email = emailEditText.getText().toString();
 String password = passwordEditText.getText().toString();
 if(registeredEmail.equals(email) && registeredPassword.equals(password))
 {
 Intent intent= new Intent(loginActivity.this,loginsuccessActivity.class);
 startActivity(intent);
 }
 else {
 Toast.makeText(loginActivity.this,"Invalid Credentials",Toast.LENGTH_SHORT).show();
```

```
 }
 counter--;
 if(counter==0){
 Toast.makeText(getBaseContext(),"failed to login attempts",Toast.LENGTH_SHORT).show();
 login_btn.setEnabled(false);
 }
 }
 });
 }
}

//loginsucess.java
package com.example.signupapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class loginsuccessActivity extends AppCompatActivity {
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_loginsuccess);
 }
}
```

*********PROG 4**********

```
package com.example.wallpaperchangeapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.app.WallpaperManager;
import android.graphics.Bitmap;
import android.graphics.BitmapFactory; import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
```

```
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import java.io.IOException;
import java.util.Timer;
import java.util.TimerTask;
public class MainActivity extends AppCompatActivity {
 Button wallpaperChange;
 Timer mytimer;
 Drawable drawable;
 WallpaperManager wpm;
 int prev=1;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);
 mytimer=new Timer();
 wpm = WallpaperManager.getInstance(this);
 wallpaperChange=(Button)findViewById(R.id.button1);
 wallpaperChange.setOnClickListener(new View.OnClickListener() {
 @Override public void onClick(View view) {
 setwallpaper();
 }
 });
 }
 private void setwallpaper() {
 Toast.makeText(this,"setting Wallpaper please wait.",Toast.LENGTH_LONG).show();
 mytimer.schedule(new TimerTask() {
 @Override
```

```
public void run()
{
if(prev==1) {
drawable = getResources().getDrawable(R.drawable.i1); prev = 2;
}
else if(prev==2) {
drawable = getResources().getDrawable(R.drawable.i2); prev=3;
}else if(prev==3) {
drawable = getResources().getDrawable(R.drawable.i3); prev=4;
}
else if(prev==4) {
drawable = getResources().getDrawable(R.drawable.i4); prev=5;
}
else if(prev==5) {
drawable = getResources().getDrawable(R.drawable.i5); prev=1;
}
Bitmap wallpaper = ((BitmapDrawable)drawable).getBitmap(); try {
wpm.setBitmap(wallpaper);
}
catch (IOException e)
{ e.printStackTrace();
}
}
},0,30000);
}
}
```

*********PROG 5**********

```
package com.example.counterapplication;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
 TextView txtCounter;
 Button btn_start,btn_stop;
 int count=0;
 Handler customHandler=new Handler();
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);
 txtCounter= (TextView)findViewById(R.id.textView2);
 btn_start =(Button)findViewById(R.id.button1);
 btn_stop=(Button)findViewById(R.id.button2);
 btn_start.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 customHandler.postDelayed(updateTimerThread,0);
 }
 });
 btn_stop.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 customHandler.removeCallbacks(updateTimerThread);
 }
 });
 }private final Runnable updateTimerThread =new Runnable() {
```

```
@Override
public void run() {
txtCounter.setText(""+count);
customHandler.postDelayed(this,1000);
count++;
}
};
}
```

********PROG 6**********

//city.xml:

```
<?xml version="1.0"?>
<records>
 <place>
 <name>Mysore</name>
 <lat>12.295</lat>
 <long>76.639</long>
 <temperature>22</temperature>
 <humidity>90%</humidity>
 </place>
 <place>
 <name>Bangalore</name>
 <lat>13.295</lat>
 <long>77.639</long><temperature>25</temperature>
 <humidity>74%</humidity>
 </place>
</records>
```

//city.json:

```
[
 {
 "name":"HASSAN",
 "lat":"12.295",
 "long":"76.639",
 "temperature":"22",
 "humidity":"92%"
 },
 {
 "name":"MANDYA",
 "lat":"10.11",
 "long":"66.639",
 "temperature":"24",
 "humidity":"82%"
 }
]
```

//JAVA-CODE

```
package com.example.parserapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;
import org.json.JSONArray;
import org.json.JSONObject;
import org.w3c.dom.Document;
import org.w3c.dom.Element;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;
```

```
import java.io.InputStream;
import java.nio.charset.StandardCharsets;
import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;
public class MainActivity extends AppCompatActivity {
 TextView display;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);
 display=findViewById(R.id.display);
 }
 public void parsexml(View v){
 try {
 InputStream is=getAssets().open("city.xml");
 DocumentBuilderFactory documentBuilderFactory =
DocumentBuilderFactory.newInstance();
 DocumentBuilder
documentBuilder=documentBuilderFactory.newDocumentBuilder();
 Document document=documentBuilder.parse(is);
 StringBuilder stringBuilder=new StringBuilder();
 stringBuilder.append("XML DATA");
 stringBuilder.append("\n----------");
 NodeList nodeList=document.getElementsByTagName("place");
 for(int i=0; i<nodeList.getLength();i++){
 Node node = nodeList.item(i);
 if(node.getNodeType()==Node.ELEMENT_NODE){
 Element element = (Element)node;
 stringBuilder.append("\n Name:").append(getValue("name",element));
 stringBuilder.append("\n Latitude:").append(getValue("lat",element));
 stringBuilder.append("\n Longitude:").append(getValue("long",element)); stringBuilder.append("\n
```

```
Temperature:").append(getValue("temperature",element));
stringBuilder.append("\n humidity").append(getValue("humidity",element));
stringBuilder.append("\n----------");
}
}
display.setText(stringBuilder.toString());
}
catch (Exception e){
e.printStackTrace();
Toast.makeText(MainActivity.this,"Error in reading XML  FILE",Toast.LENGTH_LONG).show();
}
}
public void parsejson(View V){
String json;
StringBuilder stringBuilder = new StringBuilder();
try {
InputStream is = getAssets().open("city.json");
int size=is.available();
byte[] buffer=new byte[size];
is.read(buffer);
json = new String(buffer, StandardCharsets.UTF_8);
JSONArray jsonArray = new JSONArray(json);
stringBuilder.append("JSON DATA");
stringBuilder.append("\n--------");
for(int i=0;i<jsonArray.length();i++){
JSONObject jsonObject = jsonArray.getJSONObject(i);
stringBuilder.append("\n Name:").append(jsonObject.getString("name"));
stringBuilder.append("\n Latidue:").append(jsonObject.getString("lat"));
stringBuilder.append("\n Longitude:").append(jsonObject.getString("long"));
stringBuilder.append("\n  Temperature:").append(jsonObject.getString("temperature"));
stringBuilder.append("\n Humidity:").append(jsonObject.getString("humidity"));
```

```
stringBuilder.append("\n----------");
}
display.setText(stringBuilder.toString());
is.close();
}
catch (Exception e){
e.printStackTrace();
Toast.makeText(MainActivity.this,"Error in reading JSON file",Toast.LENGTH_LONG).show();
}}
private String getValue(String tag,Element element){
return
element.getElementsByTagName(tag).item(0).getChildNodes().item(0).getNodeValue();
}
}
```

**********PROG 7**********

```
package com.example.texttospeechapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.speech.tts.TextToSpeech;
import android.view.View;
import android.widget.EditText;
import java.util.Locale;
public class MainActivity extends AppCompatActivity {
EditText e1;
TextToSpeech t1;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
```

```
 setContentView(R.layout.activity_main);
 e1=findViewById(R.id.editText);
 t1=new TextToSpeech(getApplicationContext(), new TextToSpeech.OnInitListener()
{
 @Override
 public void onInit(int status) {if(status!=TextToSpeech.ERROR){
 t1.setLanguage(Locale.UK);
 }
 }
 });
 }
 public void convert(View V){
 String tospeak=e1.getText().toString();
 t1.speak(tospeak,TextToSpeech.QUEUE_FLUSH,null);
 }
}
```

*********PROG 8**********

```
package com.example.callsaveapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import java.net.URI;
public class MainActivity extends AppCompatActivity {
EditText phoneNumberEditText;
```

```
Button clearBtn,saveBtn,callBtn;
 @Override
 protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 setContentView(R.layout.activity_main);
 phoneNumberEditText=findViewById(R.id.phoneNumberEditText);
 clearBtn=findViewById(R.id.clearBtn);
 callBtn=findViewById(R.id.callBtn);
 saveBtn=findViewById(R.id.saveBtn);
 clearBtn.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 phoneNumberEditText.setText("");
 }
 });
 callBtn.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 String phoneNumber=phoneNumberEditText.getText().toString();
 Intent intent= new Intent(Intent.ACTION_DIAL);
 intent.setData(Uri.parse("tel:"+phoneNumber));
 startActivity(intent);
 }
 });
 saveBtn.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
 String phoneNumber=phoneNumberEditText.getText().toString();
 Intent intent=new Intent(Intent.ACTION_INSERT);
 intent.setType(ContactsContract.Contacts.CONTENT_TYPE);
 intent.putExtra(ContactsContract.Intents.Insert.PHONE,phoneNumber);
```

```
startActivity(intent);
}
});}
public void inputNumber(View v){
Button btn=(Button)v;
String digit=btn.getText().toString();
String phoneNumber=phoneNumberEditText.getText().toString();
phoneNumberEditText.setText(phoneNumber+digit);
}
}
```