**2.**

**package com.example.calculator;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**public class MainActivity extends AppCompatActivity implements View.OnClickListener {**

**EditText display;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**display = findViewById(R.id.display);**

**// Find buttons by ID**

**findViewById(R.id.btn0).setOnClickListener(this);**

**findViewById(R.id.btn1).setOnClickListener(this);**

**findViewById(R.id.btnAdd).setOnClickListener(this);**

**findViewById(R.id.btnClear).setOnClickListener(this);**

**findViewById(R.id.btnEqual).setOnClickListener(this);**

**}**

**@Override**

**public void onClick(View v) {**

**String data = display.getText().toString();**

**switch (v.getId()) {**

**case R.id.btn0:**

**case R.id.btn1:**

**display.append(((Button) v).getText());**

**break;**

**case R.id.btnAdd:**

**display.append("+");**

**break;**

**case R.id.btnClear:**

**display.setText("");**

**break;**

**case R.id.btnEqual:**

**performOperation(data);**

**break;**

**}**

**}**

**private void performOperation(String data) {**

**double result = 0;**

**try {**

**if (data.contains("+")) {**

**String[] operands = data.split("\\+");**

**result = Double.parseDouble(operands[0]) + Double.parseDouble(operands[1]);**

**}**

**// Implement other operations similarly**

**display.setText(String.valueOf(result));**

**} catch (NumberFormatException | ArrayIndexOutOfBoundsException e) {**

**Toast.makeText(this, "Invalid input", Toast.LENGTH\_SHORT).show();**

**}}}**

**3.**

**SIGNUP**

**package com.example.signup;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import android.widget.Toast;**

**public class signin extends AppCompatActivity {**

**EditText username, password;**

**Button signInBtn;**

**int count = 0;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_signin);**

**username = findViewById(R.id.username);**

**password = findViewById(R.id.password);**

**signInBtn = findViewById(R.id.signin);**

**String uname = getIntent().getStringExtra("username");**

**String pwd = getIntent().getStringExtra("password");**

**signInBtn.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**String user = username.getText().toString();**

**String pass = password.getText().toString();**

**if (user.equals(uname) && pass.equals(pwd)) {**

**Toast.makeText(signin.this, "Success", Toast.LENGTH\_SHORT).show();**

**} else {**

**count++;**

**if (count >= 3) {**

**signInBtn.setEnabled(false);**

**} else {**

**Toast.makeText(signin.this, "Failed", Toast.LENGTH\_SHORT).show();**

**}}}});}}**

**MAIN ACTIVITY**

**package com.example.signup;**

**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.Matcher;**

**import java.util.regex.Pattern;**

**public class MainActivity extends AppCompatActivity {**

**EditText username, password;**

**Button signUpBtn;**

**String regularExpr = "^(?=.\*[A-Z])(?=.\*[a-z])(?=.\*\\d)(?=.\*[@$!])[A-Za-z\\d@$!]{8,}$";**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**username = findViewById(R.id.username);**

**password = findViewById(R.id.password);**

**signUpBtn = findViewById(R.id.signup);**

**signUpBtn.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**String uname = username.getText().toString();**

**String pwd = password.getText().toString();**

**if (validatePassword(pwd)) {**

**Intent intent = new Intent(MainActivity.this, signin.class);**

**intent.putExtra("username", uname);**

**intent.putExtra("password", pwd);**

**startActivity(intent);**

**} else {**

**Toast.makeText(MainActivity.this, "Invalid Password", Toast.LENGTH\_SHORT).show();**

**}**

**}**

**});**

**}**

**private boolean validatePassword(String pwd) {**

**Pattern pattern = Pattern.compile(regularExpr);**

**Matcher matcher = pattern.matcher(pwd);**

**return matcher.matches();**

**}**

**}**

**4.**

**package com.example.wallpaparchange;**

**import android.app.WallpaperManager;**

**import android.graphics.BitmapFactory;**

**import android.os.Bundle;**

**import android.widget.Button;**

**import androidx.appcompat.app.AppCompatActivity;**

**import java.io.IOException;**

**import java.util.Timer;**

**import java.util.TimerTask;**

**public class MainActivity extends AppCompatActivity {**

**int images[] = new int[]{R.drawable.r1, R.drawable.r2, R.drawable.r3, R.drawable.r4, R.drawable.r5, R.drawable.r6};**

**Button btn;**

**int i = 0;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**btn = findViewById(R.id.btn);**

**btn.setOnClickListener(v -> new Timer().schedule(new ChangeWallpaper(), 0, 3000));**

**}**

**class ChangeWallpaper extends TimerTask {**

**@Override**

**public void run() {**

**WallpaperManager wallpaperManager = WallpaperManager.getInstance(getApplicationContext());**

**try {**

**wallpaperManager.setBitmap(BitmapFactory.decodeResource(getResources(), images[i]));**

**i++;**

**if (i == 6) {**

**i = 0;**

**}**

**} catch (IOException e) {**

**e.printStackTrace();**

**}**

**}**

**}**

**}**

**5.**

**package com.example.counter;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.annotation.SuppressLint;**

**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 {**

**Handler mainHandler = new Handler();**

**int count = 0;**

**boolean running = false;**

**Button startBtn, stopBtn;**

**TextView counterVal;**

**void startThread() {**

**new Thread(new Runnable() {**

**@Override**

**public void run() {**

**while (running) {**

**count++;**

**mainHandler.post(new Runnable() {**

**@Override**

**public void run() {**

**counterVal.setText(String.valueOf(count));**

**}**

**});**

**try {**

**Thread.sleep(1000);**

**} catch (InterruptedException e) {**

**e.printStackTrace();**

**}} }**

**}).start();**

**}**

**@SuppressLint("MissingInflatedId")**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**counterVal = findViewById(R.id.countervalue);**

**startBtn = findViewById(R.id.startbtn);**

**stopBtn = findViewById(R.id.stopbtn);**

**startBtn.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**count = 0;**

**running = true;**

**startThread();**

**}**

**});**

**stopBtn.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**running = false;**

**}**

**});**

**}**

**}**

**6.**

**MAIN ACTIVITY**

**package com.example.loadjsxm;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.content.Intent;**

**import android.os.Bundle;**

**import android.view.View;**

**import android.widget.Button;**

**public class MainActivity extends AppCompatActivity {**

**Button xmlBtn, jsonBtn;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**xmlBtn = findViewById(R.id.xmlBtn);**

**jsonBtn = findViewById(R.id.jsonBtn);**

**xmlBtn.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**Intent intent = new Intent(MainActivity.this, ViewActivity.class);**

**intent.putExtra("mode", 1);**

**startActivity(intent);**

**}**

**});**

**// You might want to add onClickListener for jsonBtn as well if needed**

**}**

**}**

**VIEW ACTIVITY**

**package com.example.loadjsxm;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.widget.TextView;**

**import android.util.Log;**

**import org.json.JSONException;**

**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 org.xml.sax.SAXException;**

**import java.io.IOException;**

**import java.io.InputStream;**

**import javax.xml.parsers.DocumentBuilder;**

**import javax.xml.parsers.DocumentBuilderFactory;**

**import javax.xml.parsers.ParserConfigurationException;**

**public class ViewActivity extends AppCompatActivity {**

**int mode;**

**TextView xmlPlaceHolder, jsonPlaceHolder, xmlHeading, jsonHeading;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_view);**

**xmlPlaceHolder = findViewById(R.id.xmlPlaceHolder);**

**jsonPlaceHolder = findViewById(R.id.jsonPlaceHolder);**

**xmlHeading = findViewById(R.id.xmlHeading);**

**jsonHeading = findViewById(R.id.jsonHeading);**

**mode = getIntent().getIntExtra("mode", 0);**

**if (mode == 1) {**

**parseXML();**

**} else if (mode == 2) {**

**parseJSON();**

**} }**

**public void parseJSON() {**

**// Your JSON parsing logic**

**}**

**public void parseXML() {**

**// Your XML parsing logic**

**}}**

**7.**

**package com.example.myapplication;**

**import androidx.appcompat.app.AppCompatActivity;**

**import android.os.Bundle;**

**import android.speech.tts.TextToSpeech;**

**import android.util.Log;**

**import android.view.View;**

**import android.widget.Button;**

**import android.widget.EditText;**

**import java.util.Locale;**

**public class MainActivity extends AppCompatActivity {**

**EditText enteredValue;**

**Button speakBtn;**

**TextToSpeech textToSpeech;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**speakBtn = findViewById(R.id.speakBtn);**

**enteredValue = findViewById(R.id.enteredValue);**

**textToSpeech = new TextToSpeech(MainActivity.this, new TextToSpeech.OnInitListener() {**

**@Override**

**public void onInit(int status) {**

**if (status == TextToSpeech.SUCCESS) {**

**textToSpeech.setLanguage(Locale.ENGLISH);**

**} else {**

**Log.e("failed", "onInit: Failed");**

**}**

**}**

**});**

**speakBtn.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**String text = enteredValue.getText().toString();**

**textToSpeech.speak(text, TextToSpeech.QUEUE\_FLUSH, null);**

**}**

**});**

**}**

**}**

**8.**

**package com.example.phonecall;**

**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;**

**public class MainActivity extends AppCompatActivity {**

**EditText display;**

**Button[] numberButtons = new Button[10];**

**Button btnCall, btnSave, btnStar, btnHash, btnRemove;**

**@Override**

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

**super.onCreate(savedInstanceState);**

**setContentView(R.layout.activity\_main);**

**display = findViewById(R.id.display);**

**initializeButtons();**

**btnCall.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**makePhoneCall();**

**}**

**});**

**btnSave.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**saveToContacts();**

**}**

**});**

**btnRemove.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**removeLastDigit();**

**}**

**});**

**}**

**private void initializeButtons() {**

**int[] buttonIds = {R.id.btn0, R.id.btn1, R.id.btn2, R.id.btn3, R.id.btn4,**

**R.id.btn5, R.id.btn6, R.id.btn7, R.id.btn8, R.id.btn9};**

**for (int i = 0; i < 10; i++) {**

**final int index = i;**

**numberButtons[i] = findViewById(buttonIds[i]);**

**numberButtons[i].setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**display.append(String.valueOf(index));**

**}**

**});**

**}**

**btnStar.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**display.append("\*");**

**}**

**});**

**btnHash.setOnClickListener(new View.OnClickListener() {**

**@Override**

**public void onClick(View v) {**

**display.append("#");**

**}**

**});**

**}**

**private void makePhoneCall() {**

**String data = display.getText().toString();**

**Intent intent = new Intent(Intent.ACTION\_DIAL);**

**intent.setData(Uri.parse("tel:" + data));**

**startActivity(intent);**

**}**

**private void saveToContacts() {**

**String data = display.getText().toString();**

**Intent intent = new Intent(ContactsContract.Intents.Insert.ACTION);**

**intent.setType(ContactsContract.RawContacts.CONTENT\_TYPE);**

**intent.putExtra(ContactsContract.Intents.Insert.NAME, "Unknown");**

**intent.putExtra(ContactsContract.Intents.Insert.PHONE, data);**

**startActivity(intent);**

**}**

**private void removeLastDigit() {**

**String data = display.getText().toString();**

**if (data.length() > 0) {**

**String val = data.substring(0, data.length() - 1);**

**display.setText(val);**

**} else {**

**display.setText("");**

**}**

**}**

**}**