**a. Create a screen that has input boxes for User Name, Password, Address, Gender (radio buttons for male and female), Age (numeric), Date of Birth (Date Picker), State (Spinner), and a Submit button. On clicking the submit button, print all the data below the Submit Button (use any layout).**

* **activity\_main.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:orientation="vertical"

android:padding="16dp">

<EditText

android:id="@+id/username"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="User Name" />

<EditText

android:id="@+id/password"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Password"

android:inputType="textPassword" />

<EditText

android:id="@+id/address"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Address" />

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Gender" />

<RadioGroup

android:id="@+id/gender"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<RadioButton

android:id="@+id/male"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Male" />

<RadioButton

android:id="@+id/female"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Female" />

</RadioGroup>

<EditText

android:id="@+id/age"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Age"

android:inputType="number" />

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Date of Birth" />

<EditText

android:id="@+id/dob"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Select Date of Birth"

android:focusable="false"

android:clickable="true" />

<Spinner

android:id="@+id/state"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" />

<Button

android:id="@+id/submit\_button"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Submit" />

<Button

android:id="@+id/reset\_button"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Reset" />

<TextView

android:id="@+id/output"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:paddingTop="16dp" />

</LinearLayout>

* **strings.xml**

<resources>

<string name="app\_name">USER VALUE</string>

<string-array name="states\_array">

<item>Select State</item>

<item>WEST BENGAL</item>

<item>TAMILNADU</item>

<item>ODISHA</item>

<item>MUMBAI</item>

<item>CHENNAI</item>

</string-array>

</resources>

* **MainActivity.java**

package com.example.uservalue;

import android.app.DatePickerDialog;

import android.os.Bundle;

import android.view.View;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.EditText;

import android.widget.RadioButton;

import android.widget.RadioGroup;

import android.widget.Spinner;

import android.widget.TextView;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

private EditText username, password, address, age, dob;

private RadioGroup gender;

private Spinner state;

private Button submitButton, resetButton;

private TextView output;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

username = findViewById(R.id.username);

password = findViewById(R.id.password);

address = findViewById(R.id.address);

age = findViewById(R.id.age);

dob = findViewById(R.id.dob);

gender = findViewById(R.id.gender);

state = findViewById(R.id.state);

submitButton = findViewById(R.id.submit\_button);

resetButton = findViewById(R.id.reset\_button);

output = findViewById(R.id.output);

ArrayAdapter<CharSequence> adapter = ArrayAdapter.createFromResource(this,

R.array.states\_array, android.R.layout.simple\_spinner\_item);

adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);

state.setAdapter(adapter);

dob.setOnClickListener(v -> {

Calendar calendar = Calendar.getInstance();

int year = calendar.get(Calendar.YEAR);

int month = calendar.get(Calendar.MONTH);

int day = calendar.get(Calendar.DAY\_OF\_MONTH);

DatePickerDialog datePickerDialog = new DatePickerDialog(MainActivity.this,

(view, selectedYear, selectedMonth, selectedDay) -> {

dob.setText(selectedDay + "/" + (selectedMonth + 1) + "/" + selectedYear);

}, year, month, day);

datePickerDialog.show();

});

submitButton.setOnClickListener(v -> {

String userName = username.getText().toString();

String userPassword = password.getText().toString();

String userAddress = address.getText().toString();

String userAge = age.getText().toString();

String userDob = dob.getText().toString();

String userState = state.getSelectedItem().toString();

String userGender = ((RadioButton) findViewById(gender.getCheckedRadioButtonId())).getText().toString();

output.setText("User Name: " + userName + "\n" +

"Password: " + userPassword + "\n" +

"Address: " + userAddress + "\n" +

"Gender: " + userGender + "\n" +

"Age: " + userAge + "\n" +

"Date of Birth: " + userDob + "\n" +

"State: " + userState);

});

resetButton.setOnClickListener(v -> {

username.setText("");

password.setText("");

address.setText("");

age.setText("");

dob.setText("");

gender.clearCheck(); // Clears the selected radio button

state.setSelection(0); // Resets the spinner to the first item

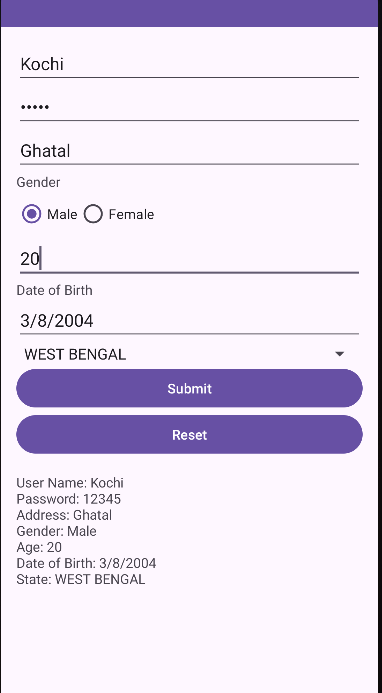
output.setText(""); // Clears the output TextView

});

}

}

* **Output: -**



**b. Create an Android app that will check whether the given number supplied as an input is prime or not.**

* **activity\_main.xml**

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:padding="16dp">

<EditText

android:id="@+id/numberInput"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter a number"

android:inputType="number" />

<Button

android:id="@+id/checkButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Check Prime"

android:layout\_below="@id/numberInput"

android:layout\_marginTop="16dp" />

<TextView

android:id="@+id/resultText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/checkButton"

android:layout\_marginTop="16dp"

android:textSize="18sp" />

</RelativeLayout>

* **MainActivity.java**

package com.example.primechecker;

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 EditText numberInput;

private Button checkButton;

private TextView resultText;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

numberInput = findViewById(R.id.numberInput);

checkButton = findViewById(R.id.checkButton);

resultText = findViewById(R.id.resultText);

checkButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String input = numberInput.getText().toString();

if (!input.isEmpty()) {

int number = Integer.parseInt(input);

boolean isPrime = isPrime(number);

resultText.setText(number + " is " + (isPrime ? "a prime number." : "not a prime number."));

} else {

resultText.setText("Please enter a valid number.");

}

}

});

}

private boolean isPrime(int num) {

if (num <= 1) return false;

for (int i = 2; i <= Math.sqrt(num); i++) {

if (num % i == 0) {

return false;

}

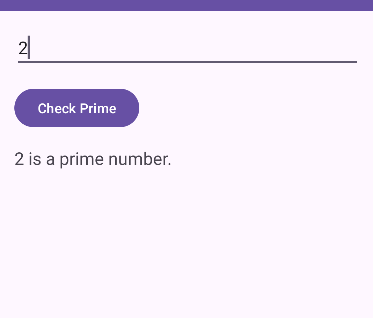
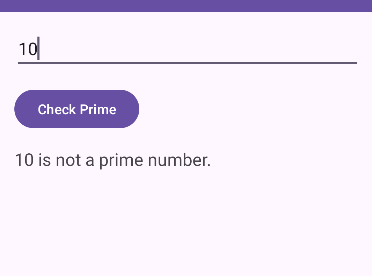
}

return true;

}

}

* **Output: -**



**c. Create an Android app that will check whether given two numbers are palindrome or not.**

* **activity\_main.xml**

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:padding="16dp">

<EditText

android:id="@+id/firstNumberInput"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter the first number"

android:inputType="number" />

<EditText

android:id="@+id/secondNumberInput"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter the second number"

android:layout\_below="@id/firstNumberInput"

android:layout\_marginTop="16dp"

android:inputType="number" />

<Button

android:id="@+id/checkButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Check Palindrome"

android:layout\_below="@id/secondNumberInput"

android:layout\_marginTop="16dp" />

<TextView

android:id="@+id/resultText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/checkButton"

android:layout\_marginTop="16dp"

android:textSize="18sp" />

</RelativeLayout>

* **MainActivity.java**

package com.example.palindromechecker;

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 EditText firstNumberInput;

private EditText secondNumberInput;

private Button checkButton;

private TextView resultText;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

firstNumberInput = findViewById(R.id.firstNumberInput);

secondNumberInput = findViewById(R.id.secondNumberInput);

checkButton = findViewById(R.id.checkButton);

resultText = findViewById(R.id.resultText);

checkButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String firstInput = firstNumberInput.getText().toString();

String secondInput = secondNumberInput.getText().toString();

if (!firstInput.isEmpty() && !secondInput.isEmpty()) {

boolean isFirstPalindrome = isPalindrome(firstInput);

boolean isSecondPalindrome = isPalindrome(secondInput);

resultText.setText("First Number: " + firstInput + " is " + (isFirstPalindrome ? "a palindrome." : "not a palindrome.") +

"\nSecond Number: " + secondInput + " is " + (isSecondPalindrome ? "a palindrome." : "not a palindrome."));

} else {

resultText.setText("Please enter valid numbers.");

}

}

});

}

private boolean isPalindrome(String number) {

String reversed = new StringBuilder(number).reverse().toString();

return number.equals(reversed);

}

}

* **Output: -**

