



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.AdapterView;  
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: -**

A screenshot of an Android application's registration form. The form has a light purple background and a dark purple header. It contains several input fields: a text field for "Kochi", a password field with five dots, a text field for "Ghatal", a gender selection with "Male" (selected) and "Female" options, an age field with "20", a date of birth field with "3/8/2004", and a state dropdown menu showing "WEST BENGAL". Below these fields are two large purple buttons labeled "Submit" and "Reset". At the bottom, there is a summary of the entered data: "User Name: Kochi", "Password: 12345", "Address: Ghatal", "Gender: Male", "Age: 20", "Date of Birth: 3/8/2004", and "State: WEST BENGAL".



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);

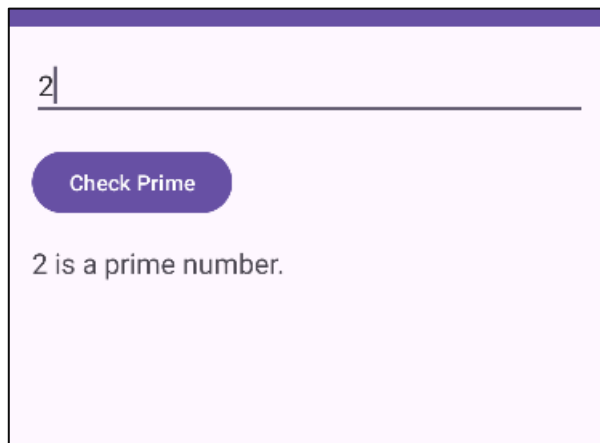
        numberInput = findViewById(R.id.numberInput);
        checkButton = findViewById(R.id.checkButton);
        resultText = findViewById(R.id.resultText);

        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;  
}  
}
```

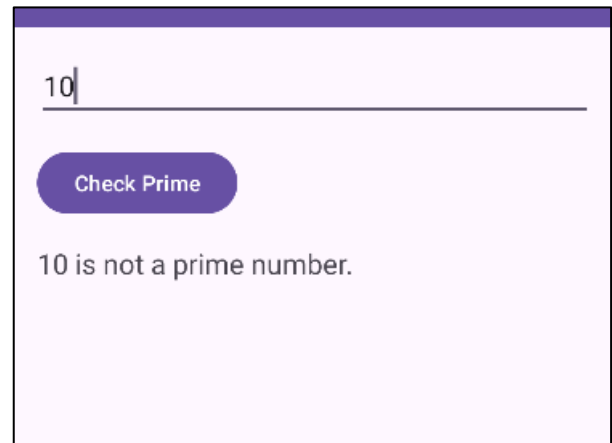
- **Output: -**



2

Check Prime

2 is a prime number.



10

Check Prime

10 is not a prime number.



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: -**

A screenshot of a mobile application interface. At the top, there is a purple header bar. Below it, there are two input fields. The first field contains the number "66" and the second field contains the number "68". Below the input fields, there is a purple button with the text "Check Palindrome" in white. Below the button, there is a text area with the following text: "First Number: 66 is a palindrome." and "Second Number: 68 is not a palindrome." The background of the interface is light purple.