

# Advanced Input Controls in Android

## 1. Introduction

Input Controls are UI components that allow users to enter data or make selections in an Android application. Some advanced input controls include RadioGroup, RadioButton, CheckBox, and Spinner.

## 2. RadioGroup and RadioButton

A RadioGroup is a container that holds multiple RadioButtons. It ensures that only one RadioButton can be selected at a time within that group.

### XML Code Example:

```
<RadioGroup
    android:layout_width="wrap_content"
    android:orientation="horizontal"
    android:layout_centerHorizontal="true"
    android:layout_below="@+id/relative"
    android:layout_marginTop="20dp"

    android:id="@+id/radioGroup"
    android:layout_height="wrap_content">

    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male"
        android:id="@+id/rb1"
    />
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"/>
    <RadioButton
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Others"/>

</RadioGroup>
```

### Java Code Example:

```
RadioGroup radioGroupGender;
Button btnSubmit;
radioGroupGender = findViewById(R.id. radioGroup);
radioGroupGender.setOnCheckedChangeListener(new
RadioGroup.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(RadioGroup radioGroup, int i) {
        if (i==R.id.male){
            Toast.makeText(MainActivity.this, "You selected male",
Toast.LENGTH_SHORT).show();
        }else if (i == R.id.female){
            Toast.makeText(MainActivity.this, "You selected female",
Toast.LENGTH_SHORT).show();

        }else if (i == R.id.others){
            Toast.makeText(MainActivity.this, "You selected others",
Toast.LENGTH_SHORT).show();

        }
    }
});
```

## Select Your Gender:

- ☒ Male
- ☐ Female
- ☐ Other

Submit

### 3. CheckBox

Definition: A CheckBox allows the user to select multiple options at once.

#### XML Code Example:

```
<CheckBox
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/cbCricket"
    android:text="Reading"
/>

<CheckBox
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/cbHockey"
    android:layout_toRightOf="@+id/cbCricket"
    android:text="Gaming"/>

<CheckBox
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/cbBadminton"
    android:layout_toRightOf="@+id/cbHockey"
    android:text="Traveling"/>
```

#### Java Code Example:

```
CheckBox ch1Reading,ch2Gaming,ch3Traveling;
ch1Reading =findViewById(R.id.cbCricket);
ch2Gaming =findViewById(R.id.cbBadminton);
ch3Traveling = findViewById(R.id.cbHockey);
```

```
ch1Reading.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton,
boolean b) {
        if (b){
            Toast.makeText(MainActivity.this, "Reading is checked",
Toast.LENGTH_SHORT).show();
        }else{
            Toast.makeText(MainActivity.this, " Reading is unchecked",
Toast.LENGTH_SHORT).show();
        }
    }
});
```

```
ch2Gaming.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    @Override
    public void onCheckedChanged(CompoundButton compoundButton,
boolean b) {
        if (b){
            Toast.makeText(MainActivity.this, "Gaming is Checked",
Toast.LENGTH_SHORT).show();
        }else{
            Toast.makeText(MainActivity.this, " Gaming is unChecked",
Toast.LENGTH_SHORT).show();
        }
    }
});
```

```
ch3Traveling.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
```

```
@Override
public void onCheckedChanged(CompoundButton compoundButton,
boolean b) {
    if (b){
        Toast.makeText(MainActivity.this, "Traveling is Checked",
Toast.LENGTH_SHORT).show();
    }else{
        Toast.makeText(MainActivity.this, " Traveling is unChecked",
Toast.LENGTH_SHORT).show();

    }
}
});
```

## Screenshot: CheckBox Example (Select Your Hobbies)

### Select Your Hobbies:

- ☒ Reading
- ☐ Gaming
- ☐ Traveling

Show Selected Hobbies

## 4. Spinner (Dropdown)

A Spinner provides a dropdown menu that allows users to choose one value from a list of items.

### XML Code Example:

```
<Spinner android:id="@+id/spinnerCountry"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>
```

### Java Code Example:

```
Spinner spinnerCountry;
Button btnShowCountry;
String[] countries = {"India", "USA", "Canada", "Australia"};
```

```
spinnerCountry = findViewById(R.id.spinnerCountry);
btnShowCountry = findViewById(R.id.btnShowCountry);
ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_spinner_dropdown_item, countries);
spinnerCountry.setAdapter(adapter);
btnShowCountry.setOnClickListener(v -> {
    String selected = spinnerCountry.getSelectedItem().toString();
    Toast.makeText(MainActivity.this, "You selected: " + selected,
    Toast.LENGTH_SHORT).show();
});
```

Spinner Example (Select Your Country)

## Select Your Country:

Show Selected Country