

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:



India

Show Selected Country