

Experiment1.5

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1. Aim:

Create an Android App using various controls such as TextEdit, CheckBox, RadioButton, RadioGroup, etc.

2. Objective:

To install and run applications on Android Studio, we will require Android Studio, Android SDK, Android Virtual Device (AVD) Manager, Gradle and (JDK).

3. Procedure and Steps:

1. Open Android Studio and create a new project.
2. Choose a project name, package name, and choose "Empty Activity" as the template for your project.
3. In the layout file (activity_main.xml), write the designing part of the application i.e., frontend UI design.
4. In the java file (MainActivity.java), write the code used for the functionality of the app.

App with Checkbox:

CheckBox belongs to `android.widget.CheckBox` class. Android CheckBox class is the subclass of `CompoundButton` class. It is generally used in a place where user can select one or more than choices from a given list of choices. For example, selecting hobbies.

public class CheckBox extends CompoundButton

4. Script and Output:

(activity_main.xml) code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#ffffff"
    android:orientation="vertical">
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginStart="8dp"
    android:layout_marginTop="48dp"
    android:layout_marginEnd="8dp"
    android:text="Choose your hobbies:"
    android:textSize="24sp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

<CheckBox |
    android:id="@+id/checkBox"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Music"
    android:textSize="18sp">

</CheckBox>

</CheckBox>

<CheckBox
    android:id="@+id/checkBox2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Reading"
    android:textSize="18sp">

</CheckBox>

<CheckBox
    android:id="@+id/checkBox3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Cricket"
    android:textSize="18sp"
    app:layout_constraintTop_toTopOf="@+id/textView"
    tools:layout_editor_absoluteX="382dp">

</CheckBox>
```

```
<CheckBox
    android:id="@+id/checkBox4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Travelling"
    android:textSize="18sp"
    app:layout_constraintTop_toBottomOf="@+id/checkBox"
    tools:layout_editor_absoluteX="386dp">

</CheckBox>

<Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:onClick="Check"
    android:text="submit" />

</LinearLayout>
```

MainActivity.java Code:

```
package com.abhimanyu.myapplication;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.CheckBox;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    CheckBox ch, ch1, ch2, ch3;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);
    }
}
```

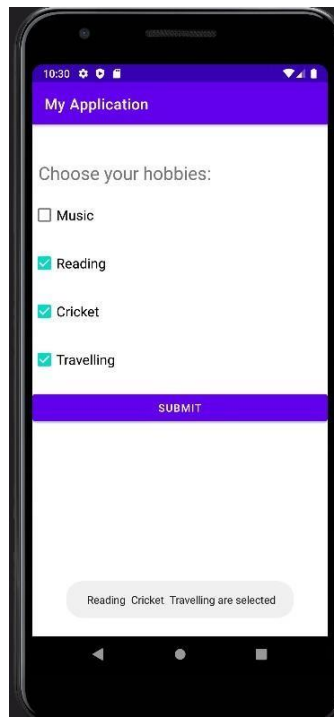
```
ch=(CheckBox)findViewById(R.id.checkBox);
ch1=(CheckBox)findViewById(R.id.checkBox2);
ch2=(CheckBox)findViewById(R.id.checkBox3);
ch3=(CheckBox)findViewById(R.id.checkBox4);
}

public void Check(View v)
{
    String msg="";

    if(ch.isChecked())
        msg = msg + " Music ";
    if(ch1.isChecked())
        msg = msg + " Reading ";
    if(ch2.isChecked())
        msg = msg + " Cricket ";
    if(ch3.isChecked())
        msg = msg + " Travelling ";

    Toast.makeText(this, msg + "are selected",
        Toast.LENGTH_LONG).show();
}
}
```

Output:



App with Radio Buttons:

[Android](#) radio button is a widget that can have more than one option to choose from. The user can choose only one option at a time. Each option here refers to a radio button and all the options for the topic are together referred to as Radio Group. Hence, Radio Buttons are used inside a RadioGroup.

(activity_main.xml) code:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Select your Subject ?"
        android:textStyle="bold"
        android:layout_marginLeft="10dp"
        android:textSize="20sp"/>

    <RadioGroup
        android:layout_marginTop="50dp"
        android:id="@+id/groupradio"
        android:layout_marginLeft="10dp"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content">

        <RadioButton
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:id="@+id/radia_id1"
            android:text="Mobile App Development"
            android:textSize="20sp"/>

        <RadioButton
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:id="@+id/radia_id2"
            android:text="Internet of Things"
            android:textSize="20sp"/>

        <RadioButton
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:id="@+id/radia_id3"
            android:text="Discrete Mathematics"
            android:textSize="20sp"/>

    </RadioGroup>

</RelativeLayout>
```

```
<RadioButton
    android:id="@+id/radia_id4"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:text="Theory of Computation"
    android:textSize="20sp" />

<RadioButton
    android:id="@+id/radia_id5"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:text="Information Security and Cryptography"
    android:textSize="20sp" />

<RadioButton
    android:id="@+id/radia_id6"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:text="Web programming Using .Net"
    android:textSize="20sp" />

</RadioGroup>

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Submit"
    android:id="@+id/submit"
    android:textStyle="bold"
    android:textSize="20sp"
    android:layout_marginTop="400dp"
    android:layout_marginLeft="180dp"
/>

<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Clear"
    android:id="@+id/clear"
    android:textSize="20sp"
    android:textStyle="bold"
    android:layout_marginTop="400dp"
    android:layout_marginLeft="40dp"
/>

</RelativeLayout>
```

MainActivity.java Code:

```
package com.abhimanyu.radiobuttons;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroup;
    Button submit, clear;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        submit = (Button)findViewById(R.id.submit);
        clear = (Button)findViewById(R.id.clear);
        radioGroup = (RadioGroup)findViewById(R.id.groupradio);

        radioGroup.clearCheck();

        radioGroup.setOnCheckedChangeListener(
            new RadioGroup
                .OnCheckedChangeListener() {
                    @Override
                    public void onCheckedChanged(RadioGroup group,
                                                    int checkedId)
                    {
                        RadioButton
                            radioButton
                                = (RadioButton)group
                                    .findViewById(checkedId);
                    }
                }
        );

        submit.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View v)
            {

```



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```
int selectedId = radioGroup.getCheckedRadioButtonId();
if (selectedId == -1) {
    Toast.makeText(MainActivity.this,
        "No answer has been selected",
        Toast.LENGTH_SHORT)
        .show();
}
else {

    RadioButton radioButton
        = (RadioButton)radioGroup
        .findViewById(selectedId);

    Toast.makeText(MainActivity.this,
        radioButton.getText(),
        Toast.LENGTH_SHORT)
        .show();
}
});
clear.setOnClickListener(new View.OnClickListener() {

    @Override
    public void onClick(View v)
    {
        radioGroup.clearCheck();
    }
});
}
```


Output:

