



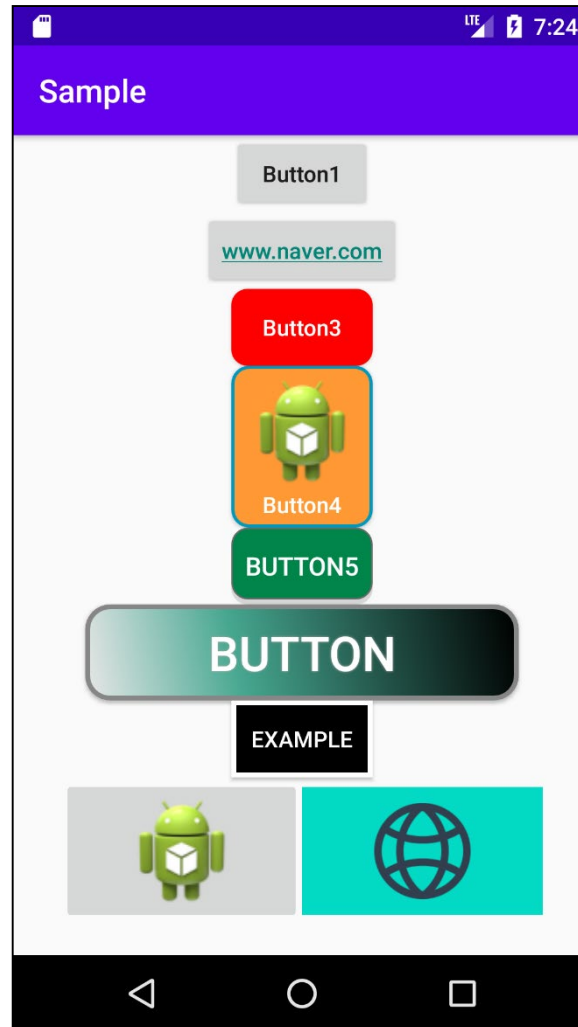
Button 익히기(실습)

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Button 활용 1

- 다음과 같은 Button을 만들어보자





Button 활용 1

■ 사용자 인터페이스

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center_horizontal"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button1"
        android:textAllCaps="false" />
```



Button 활용 1

■ 사용자 인터페이스

<Button

```
    android:id="@+id/button2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:autoLink="all"  
    android:text="www.naver.com"  
    android:textAllCaps="false" />
```

<Button

```
    android:id="@+id/button3"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:background="@drawable/round_button1"  
    android:padding="5dp"  
    android:text="Button3"  
    android:textAllCaps="false"  
    android:textColor="#ffffff" />
```



Button 활용 1



■ 사용자 인터페이스

<Button

```
    android:id="@+id/button4"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:background="@drawable/round_button2"  
    android:drawableTop="@drawable/ic_launcher"  
    android:padding="5dp"  
    android:text="Button4"  
    android:textAllCaps="false"  
    android:textColor="#ffffff" />
```

<Button

```
    android:id="@+id/button5"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:background="@drawable/round_button3"  
    android:text="Button5"  
    android:textColor="#fff"  
    android:textSize="16dp" />
```



Button 활용 1

■ 사용자 인터페이스

<Button

```
    android:id="@+id/angry_btn"  
    android:layout_width="270dp"  
    android:layout_height="60dp"  
    android:background="@drawable/button_shape"  
    android:shadowColor="#A8A8A8"  
    android:shadowDx="0"  
    android:shadowDy="0"  
    android:shadowRadius="5"  
    android:text="Button"  
    android:textColor="#FFFFFF"  
    android:textSize="30sp" />
```



Button 활용 1

■ 사용자 인터페이스

<Button

android:layout_height="wrap_content"

android:layout_width="wrap_content"

android:text="Example"

android:textColor="@android:color/white"

android:background="@drawable/button_bg"/>



Button 활용 1

■ 사용자 인터페이스

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center">
    <ImageButton
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:src="@drawable/ic_launcher" />
    <ImageView
        android:id="@+id/imageView"
        android:layout_width="150dp"
        android:layout_height="80dp"
        android:padding="10dp"
        android:background="@color/colorAccent"
        app:srcCompat="@drawable/world" />
</LinearLayout>
</LinearLayout>
```




Button 활용 1

■ button_shape.xml

```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <corners android:radius="14dp" />
    <gradient
        android:angle="45"
        android:centerColor="#47A891"
        android:centerX="35%"
        android:endColor="#000000"
        android:startColor="#E8E8E8"
        android:type="linear" />

    <padding
        android:bottom="0dp"
        android:left="0dp"
        android:right="0dp"
        android:top="0dp" />
```



Button 활용 1

■ button_shape.xml

```
<size
    android:width="270dp"
    android:height="60dp" />

<stroke android:width="3dp" android:color="#878787" />
</shape>
```



Button 활용 1

■ round_button1.xml

```
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
    <!-- 평상시 -->
    <item android:state_focused="false" android:state_pressed="false">
        <shape>
            <solid android:color="#FFFF0000" />
            <corners android:radius="10dp" />
        </shape>
    </item>
    <!-- 클릭했을 때 -->
    <item android:state_focused="false" android:state_pressed="true">
        <shape>
            <solid android:color="#FF00FF00" />
            <corners android:radius="10dp" />
        </shape>
    </item>
</selector>
```



Button 활용 1

■ round_button2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android">
    <solid android:color = "#FF9934"/>
    <corners android:radius="10dp"/>
    <stroke android:width="2dp"
        android:color="#0099BD"/>
</shape>
```



Button 활용 1

■ round_button3.xml

```
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
  <item>
    <layer-list>
      <!-- shadow (밑으로) : 그림자 -->
      <item android:top="3dp">
        <shape>
          <corners android:radius="10dp" />
          <solid android:color="#1f000000" />
        </shape>
      </item>
      <!-- background (위로) -->
      <item android:bottom="3dp">
        <shape>
          <corners android:radius="10dp"/>
          <solid android:color="#00854a"/>
          <stroke android:width="1dp" android:color="#6a6a6a" />
        </shape>
      </item>
    </layer-list>
  </item>
</selector>
```



Button 활용 1



■ round_button3.xml

```
        </shape>
    </item>
</layer-list>
</item>
</selector>
```



Button 활용 1

■ button_bg.xml

```
<?xml version="1.0" encoding="utf-8"?>
<shape
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <!-- 테두리 내부 색상 설정 -->
    <solid android:color="@android:color/black" />
    <!-- 테두리 내부 여백 설정 -->
    <padding
        android:bottom="8dp"
        android:left="8dp"
        android:right="8dp"
        android:top="8dp" />
    <!-- 테두리 설정: 두께, 색상 -->
    <stroke
        android:width="3dp"
        android:color="@android:color/white" />
</shape>
```



Button 활용 1

■ my_button_bg.xml

```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <gradient
        android:angle="270"
        android:endColor="#00FF00"
        android:startColor="#FFFFFF" />
    <corners android:radius="3dp" />
    <stroke
        android:width="5px"
        android:color="#000000" />
</shape>
```




Button 활용 1

■ themes.xml

■ Style01 AppCompatActivity일때 Button 속성 적용

```
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.Sample" parent=
        "Theme.AppCompat.DayNight.NoActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/purple_500</item>
        <item name="colorPrimaryVariant">@color/purple_200</item>
        <item name="colorOnPrimary">@color/white</item>
        <!-- Secondary brand color. -->
```



Button 활용 2

■ 다음과 같이 판매 금액의 부가 가치를 계산해보자

Tax

판매금액 : 판매금액 입력

☒ 버림 ☐ 반올림 ☐ 올림

☒ 1원 단위 ☐ 10원 단위

계산하기

Tax

판매금액 : 27550

☒ 버림 ☐ 반올림 ☐ 올림

☒ 1원 단위 ☐ 10원 단위

계산하기

가격 : 25,045 원
세금 : 2,505 원

Tax

판매금액 : 27550

☒ 버림 ☐ 반올림 ☐ 올림

☐ 1원 단위 ☒ 10원 단위

계산하기

가격 : 25,050 원
세금 : 2,500 원



Button 활용 2

■ 사용자 인터페이스

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="판매금액 : "/>
```



Button 활용 2

■ 사용자 인터페이스

```
<RadioButton  
    android:id="@+id/radio2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="반올림"/>
```

```
<RadioButton  
    android:id="@+id/radio3"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="올림"/>
```

```
</RadioGroup>
```



Button 활용 2



■ 사용자 인터페이스

```
<EditText  
    android:id="@+id/pay"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:hint="판매금액 입력"/>
```

```
</LinearLayout>
```

```
<RadioGroup  
    android:id="@+id/radiogroup1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:orientation="horizontal">
```

```
<RadioButton  
    android:id="@+id/radio1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:checked="true"  
    android:text="버림"/>
```



Button 활용 2

■ 사용자 인터페이스

```
<RadioGroup
    android:id="@+id/radiogroup2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal">

    <RadioButton
        android:id="@+id/radio4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:checked="true"
        android:text="1원 단위"/>

    <RadioButton
        android:id="@+id/radio5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="10원 단위"/>

</RadioGroup>
```



Button 활용 2

■ 사용자 인터페이스

<Button

```
    android:id="@+id/button"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="계산하기"/>
```

<TextView

```
    android:id="@+id/result"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:textSize="20dp"/>
```

</LinearLayout>



Button 활용 2

■ MainActivity.JAVA

```
public class MainActivity extends AppCompatActivity {
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

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

```
        EditText editText = findViewById(R.id.pay);
```

```
        TextView textView = findViewById(R.id.result);
```

```
        RadioGroup radioGroup = findViewById(R.id.radiogroup1);
```

```
        RadioGroup radioGroup1 = findViewById(R.id.radiogroup2);
```




Button 활용 2

■ MainActivity.JAVA

```
Button button = findViewById(R.id.button);
button.setOnClickListener(new View.OnClickListener() {
    @Override
    public boolean onTouch(View v, MotionEvent event) {
        String value = editText.getText().toString();
        if (value.equals("")) {
            Toast.makeText(getApplicationContext(), "입력해주세요",
                Toast.LENGTH_SHORT).show();
        } else {
            int price = Integer.parseInt(value);
            int pay = 0;
```



Button 활용 2

■ MainActivity.JAVA

```
int check = radioGroup.getCheckedRadioButtonId();
if (check == R.id.radio1) {
    pay = (int) (price / 1.1f);
} else if (check == R.id.radio2) {
    pay = (int) (price / 1.1f + 0.5f);
} else if (check == R.id.radio3) {
    pay = (int) (price / 1.1f + 0.9f);
}
check = radioGroup1.getCheckedRadioButtonId();
if (check == R.id.radio5) {
    pay = pay + 5;
    pay = (int) (pay / 10.0f);
    pay = pay * 10;
}
```



Button 활용 2

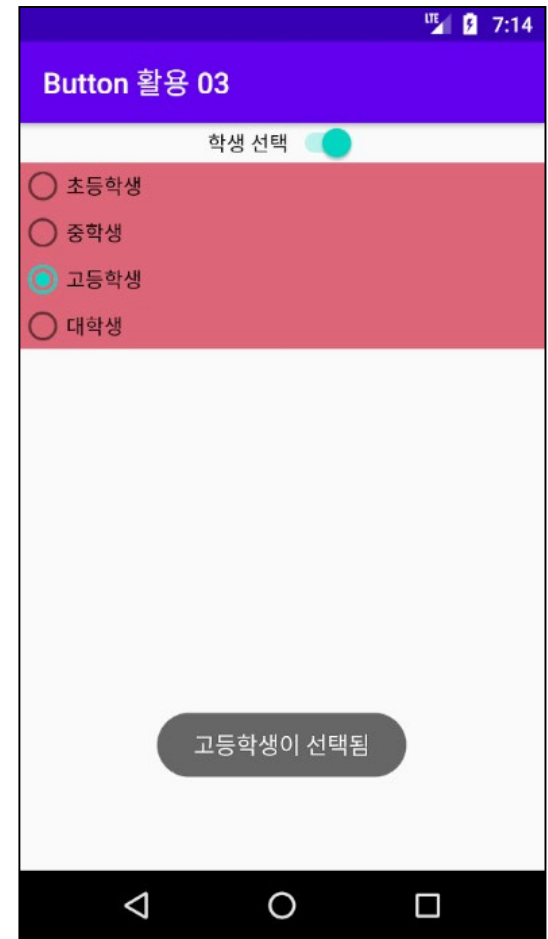
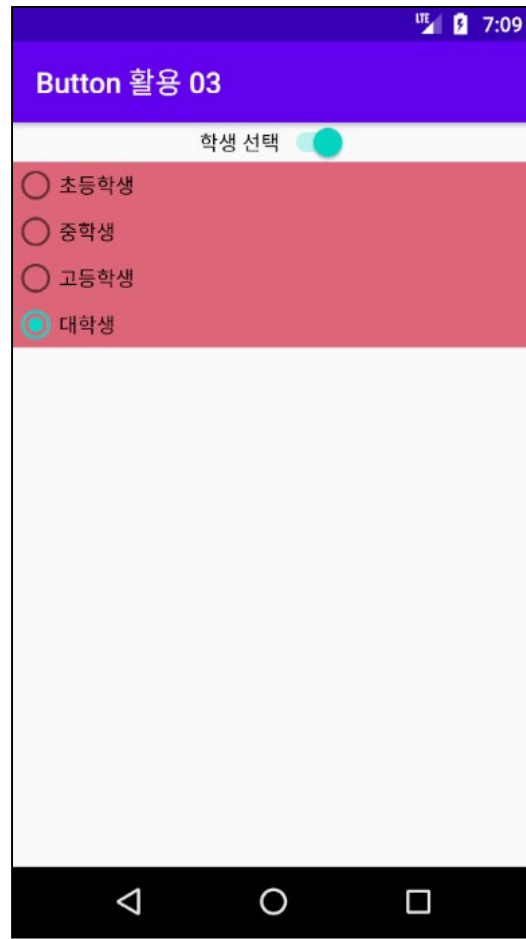
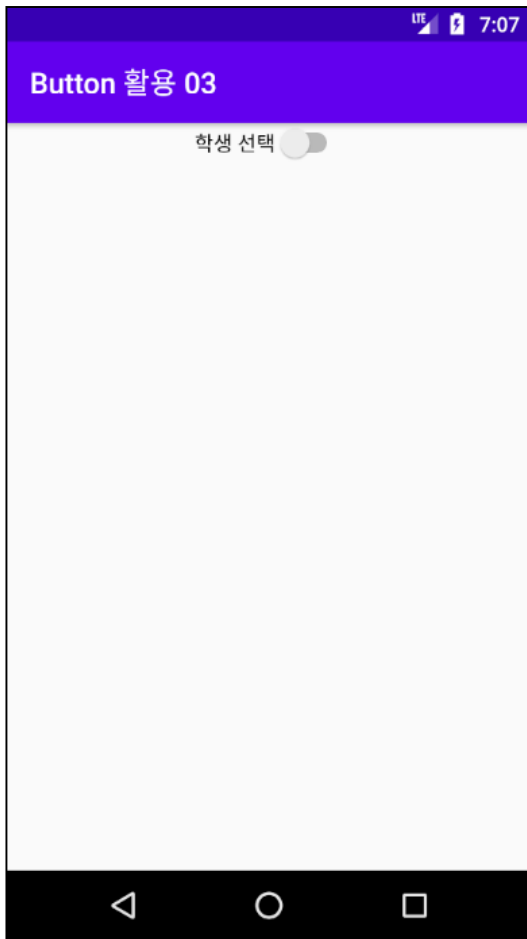
■ MainActivity.JAVA

```
        int tax = price - pay;
        textView.setText("가격 : " +
                        String.format("%,d", pay) + " 원" + "세금 : " +
                        String.format("%,d", tax) + " 원");
    }
    return false;
}
});
}
}
```



Button 활용 3

■ 다음과 같이 Button을 활용하여 App을 만들어보자





Button 활용 3

■ 사용자 인터페이스

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <Switch
        android:id="@+id/switch1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="학생 선택"/>
    <RadioGroup
        android:id="@+id/group"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:visibility="invisible"
        android:background="#dd6678">
```



Button 활용 3

■ 사용자 인터페이스

```
<RadioButton
    android:id="@+id/r1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="초등학생" />
<RadioButton
    android:id="@+id/r2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="중학생" />
<RadioButton
    android:id="@+id/r3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:checked="true"
    android:text="고등학생" />
```



Button 활용 3

■ 사용자 인터페이스

```
<RadioButton  
    android:id="@+id/r4"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:checked="true"  
    android:text="대학생" />
```

```
</RadioGroup>
```

```
</LinearLayout>
```



Button 활용 3

@Override

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main3);  
    RadioGroup group = findViewById(R.id.group);  
    RadioButton button = findViewById(R.id.r4);  
    Switch switch1 = findViewById(R.id.switch1);  
    switch1.setOnCheckedChangeListener(  
        new CompoundButton.OnCheckedChangeListener() {
```

@Override

```
    public void onCheckedChanged(CompoundButton buttonView,  
                                boolean isChecked) {  
        if (switch1.isChecked()) {  
            group.setVisibility(View.VISIBLE);  
        } else {  
            group.setVisibility(View.INVISIBLE);  
        }  
        button.performClick();  
    }  
});
```




Button 활용 3

■ MainActivity.JAVA

```
group.setOnCheckedChangeListener(  
    new RadioGroup.OnCheckedChangeListener() {  
        @Override  
        public void onCheckedChanged(RadioGroup group, int checkedId) {  
            String message = "";  
            if (checkedId == R.id.r1)  
                message = "초등학생이 선택됨";  
            else if (checkedId == R.id.r2)  
                message = "중학생이 선택됨";  
            else if (checkedId == R.id.r3)  
                message = "고등학생이 선택됨";  
            else if (checkedId == R.id.r4)  
                message = "대학생이 선택됨";  
            Toast.makeText(getApplicationContext(), message,  
                                Toast.LENGTH_SHORT).show();  
        }  
    });  
}
```



Button 활용 4



LTE 7:42

Sample

☒ Red
☐ Green
☐ Blue
☐ 흰색 배경

영문

LTE 7:42

Sample

☒ Red
☐ Green
☐ Blue
☒ 흰색 배경

영문

LTE 7:43

샘플

☐ Red
☒ Green
☐ Blue
☐ 흰색 배경

한글



Button 활용 4

■ 사용자 인터페이스

```
<?xml version="1.0" encoding="utf-8" ?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#FFFF00"
        android:gravity="center"
        android:text="Sample"
        android:textColor="#FF0000"
        android:textSize="32sp" />
```



Button 활용 4



■ 사용자 인터페이스

```
<RadioGroup
    android:id="@+id/group"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:checkedButton="@+id/rared"
    android:orientation="vertical">

    <RadioButton
        android:id="@id/radio1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Red" />

    <RadioButton
        android:id="@+id/radio2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Green" />
```



Button 활용 4

■ 사용자 인터페이스

```
<RadioButton
    android:id="@+id/radio3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Blue" />
</RadioGroup>
<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="흰색 배경" />
<ToggleButton
    android:id="@+id/toggleButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textOff="영문"
    android:textOn="한글" />
</LinearLayout>
```



Button 활용 4

■ MainActivity.JAVA

```
public class MainActivity4 extends AppCompatActivity {
    TextView textView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main4);

        textView = findViewById(R.id.textView);
        textView.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(), "클릭되었음",
                                                                    Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```



Button 활용 4

■ MainActivity.JAVA

```
RadioGroup radioGroup = findViewById(R.id.group);  
radioGroup.setOnCheckedChangeListener(radioCheck);  
CheckBox checkBox = findViewById(R.id.checkBox);  
checkBox.setOnCheckedChangeListener(checkChange);  
  
ToggleButton toggle = findViewById(R.id.toggleButton);  
toggle.setOnCheckedChangeListener(checkChange);  
}
```



Button 활용 4

■ MainActivity.JAVA

```
RadioGroup.OnCheckedChangeListener radioCheck =  
    new RadioGroup.OnCheckedChangeListener() {  
    public void onCheckedChanged(RadioGroup group, int checkedId) {  
        if (group.getId() == R.id.radio1) {  
            if (checkedId == R.id.rared) {  
                textView.setTextColor(Color.RED);  
            } else if (checkedId == R.id.radio2) {  
                textView.setTextColor(Color.GREEN);  
            } else if (checkedId == R.id.radio3) {  
                textView.setTextColor(Color.BLUE);  
            }  
        }  
    }  
};
```




Button 활용 4

■ MainActivity.JAVA

```
CompoundButton.OnCheckedChangeListener checkChange =  
    new CompoundButton.OnCheckedChangeListener() {  
        public void onCheckedChanged(CompoundButton buttonView,  
                                     boolean isChecked) {  
            if (buttonView.getId() == R.id.ccheckBox) {  
                if (isChecked) {  
                    textView.setBackgroundColor(Color.WHITE);  
                } else  
                    textView.setBackgroundColor(Color.YELLOW);  
            }  
            if (buttonView.getId() == R.id.toggleButton) {  
                if (isChecked) {  
                    textView.setText("샘플");  
                } else  
                    textView.setText("Sample");  
            }  
        }  
    };  
}
```



Button 활용 5

■ 다음과 같은 App을 만들어보자

Button08

성별 : 남자
☐ 남자 ☐ 여자

메일 수신 여부
☐ 수신 동의
☐ 수신 거부

체크 해제

Button08

성별 : 남자
☒ 남자 ☐ 여자

메일 수신 여부 : 수신 거부
☐ 수신 동의
☒ 수신 거부

체크 해제



Button 활용 5

■ 사용자 인터페이스

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="10dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20dp"
        android:text="성별"/>
```



Button 활용 5

■ 사용자 인터페이스

```
<RadioGroup
    android:id="@+id/group1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
    <RadioButton
        android:id="@+id/radio1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="남자"/>
    <RadioButton
        android:id="@+id/radio2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="여자" />
</RadioGroup>
```



Button 활용 5

■ 사용자 인터페이스

```
<TextView  
    android:id="@+id/textView2"  
    android:layout_marginTop="10dp"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:textSize="20dp"  
    android:text="메일 수신 여부" />
```



Button 활용 5

■ 사용자 인터페이스

```
<RadioGroup  
    android:id="@+id/group2"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content">
```

```
<RadioButton  
    android:id="@+id/radio3"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text = "수신 동의"/>
```

```
<RadioButton  
    android:id="@+id/radio4"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text = "수신 거부"/>
```

```
</RadioGroup>
```



Button 활용 5

■ 사용자 인터페이스

```
<Button  
    android:id="@+id/button"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="체크 해제"/>  
</LinearLayout>
```



Button 활용 5

■ MainActivity.JAVA

```
public class MainActivity5 extends AppCompatActivity {  
    String me;
```

@Override

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main5);
```

```
    TextView textView1 = findViewById(R.id.textView1);
```

```
    TextView textView2 = findViewById(R.id.textView2);
```

```
    RadioButton radioButton1 = findViewById(R.id.radio1);
```

```
    RadioButton radioButton2 = findViewById(R.id.radio2);
```

```
    RadioButton radioButton3 = findViewById(R.id.radio3);
```

```
    RadioButton radioButton4 = findViewById(R.id.radio4);
```




Button 활용 5

■ MainActivity.JAVA

```
RadioGroup group1 = findViewById(R.id.group1);
group1.setOnCheckedChangeListener(
    new RadioGroup.OnCheckedChangeListener() {
        @Override
        public void onCheckedChanged(RadioGroup group, int checkedId) {
            if (checkedId == R.id.radio1) {
                me = "성별 : " + radioButton1.getText().toString();
            } else if (checkedId == R.id.radio2) {
                me = "성별 : " + radioButton2.getText().toString();
            }
            textView1.setText(me);
        }
    });
```



Button 활용 5

■ MainActivity.JAVA

```
RadioGroup group2 = findViewById(R.id.group2);
group2.setOnCheckedChangeListener(
    new RadioGroup.OnCheckedChangeListener() {
        @Override
        public void onCheckedChanged(RadioGroup group, int checkedId) {
            if (checkedId == R.id.radio3) {
                me = "메일 수신 여부 : " + radioButton3.getText().toString();
            } else if (checkedId == R.id.radio4) {
                me = "메일 수신 여부 : " + radioButton4.getText().toString();
            }
            textView2.setText(me);
        }
    });
```



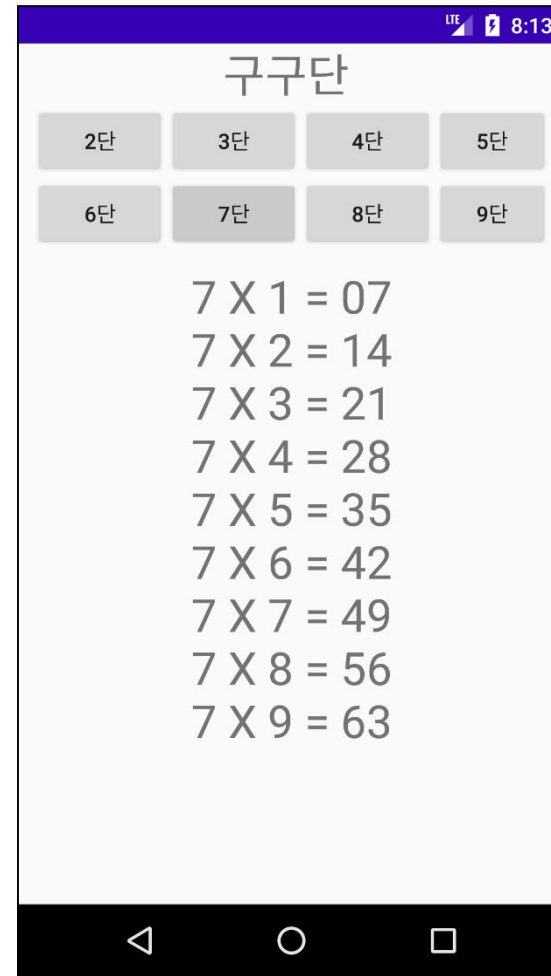
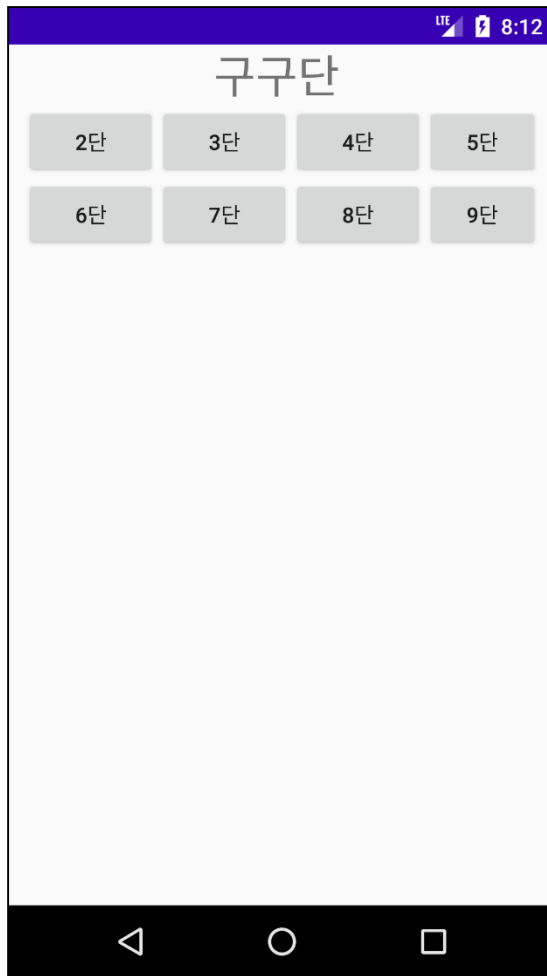
Button 활용 5

■ MainActivity.JAVA

```
Button button = findViewById(R.id.button);
button.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        radioButton1.setChecked(false);
        radioButton2.setChecked(false);
        radioButton3.setChecked(false);
        radioButton4.setChecked(false);
        group1.clearCheck();
        group2.clearCheck();
        textView1.setText("성별");
        textView2.setText("메일 수신 여부");
    }
});
}
```



Button 활용 6





Button 활용 6

■ 사용자 인터페이스

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

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="구구단 "
        android:textSize="30sp" />
```



Button 활용 6

■ 사용자 인터페이스

<LinearLayout

```
android:layout_width="match_parent"  
android:layout_height="wrap_content"  
android:layout_marginStart="10dp"  
android:layout_marginEnd="10dp"  
android:gravity="center">
```

<Button

```
android:id="@+id/button1"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:text="2단" />
```

<Button

```
android:id="@+id/button2"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:text="3단" />
```



Button 활용 6



■ 사용자 인터페이스

```
<Button  
    android:id="@+id/button3"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="4단" />
```

```
<Button  
    android:id="@+id/button4"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="5단" />
```

```
</LinearLayout>
```

```
<LinearLayout  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginStart="10dp"  
    android:layout_marginEnd="10dp"  
    android:gravity="center">
```



Button 활용 6

■ 사용자 인터페이스

```
<Button  
    android:id="@+id/button5"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="6단" />
```

```
<Button  
    android:id="@+id/button6"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="7단" />
```

```
<Button  
    android:id="@+id/button7"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="8단" />
```




Button 활용 6

■ 사용자 인터페이스

```
<Button  
    android:id="@+id/button8"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="9단" />
```

```
</LinearLayout>
```

```
<TextView  
    android:id="@+id/textView"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginTop="10dp"  
    android:gravity="center"  
    android:textSize="30sp" />
```

```
</LinearLayout>
```



Button 활용 6

■ MainActivity.JAVA

```
public class MainActivity6 extends AppCompatActivity
    implements View.OnClickListener {

    TextView textView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main6);

        textView = findViewById(R.id.textView);
        Button button2 = findViewById(R.id.button1);
        Button button3 = findViewById(R.id.button2);
        Button button4 = findViewById(R.id.button3);
        Button button5 = findViewById(R.id.button4);
        Button button6 = findViewById(R.id.button5);
        Button button7 = findViewById(R.id.button6);
        Button button8 = findViewById(R.id.button7);
        Button button9 = findViewById(R.id.button8);
```



Button 활용 6

■ MainActivity.JAVA

```
button2.setOnClickListener(this);
button3.setOnClickListener(this);
button4.setOnClickListener(this);
button5.setOnClickListener(this);
button6.setOnClickListener(this);
button7.setOnClickListener(this);
button8.setOnClickListener(this);
button9.setOnClickListener(this);
}

private void makeGuGuDan(int dan) {
    StringBuilder buffer = new StringBuilder();
    for (int i = 1; i <= 9; i++) {
        buffer.append(String.format("%d X %d = %02d\n", dan, i, (dan * i)));
    }
    textView.setText(buffer.toString());
}
```



Button 활용 6

■ MainActivity.JAVA

@Override

```
public void onClick(View v) {  
    switch (v.getId()) {  
        case R.id.button1:  
            makeGuGuDan(2);  
            break;  
        case R.id.button2:  
            makeGuGuDan(3);  
            break;  
        case R.id.button3:  
            makeGuGuDan(4);  
            break;  
        case R.id.burron4:  
            makeGuGuDan(5);  
            break;  
    }
```



Button 활용 6

■ MainActivity.JAVA

```
case R.id.button5:  
    makeGuGuDan(6);  
    break;  
case R.id.button6:  
    makeGuGuDan(7);  
    break;  
case R.id.button7:  
    makeGuGuDan(8);  
    break;  
case R.id.button8:  
    makeGuGuDan(9);  
}  
}  
}
```



Button 활용 7

Sample

섭씨온도를 입력하세요 'C

☒ 섭씨를 화씨로
☐ 화씨를 섭씨로

변환 초기화

화씨온도를 입력하세요 'F

Sample

섭씨온도를 입력하세요 'C

☐ 섭씨를 화씨로
☒ 화씨를 섭씨로

변환 초기화

화씨온도를 입력하세요 'F



Button 활용 7

■ 사용자 인터페이스

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

    <EditText
        android:id="@+id/editText1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_marginTop="20dp"
        android:ems="10"
        android:hint="섭씨온도를 입력하세요"
        android:inputType="numberDecimal" />
```



Button 활용 7

<EditText

```
    android:id="@+id/editText2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_below="@+id/editText1"  
    android:layout_marginTop="118dp"  
    android:ems="10"  
    android:hint="화씨온도를 입력하세요"  
    android:enabled="false"  
    android:textColorHint="@color/white"  
    android:inputType="numberDecimal" />
```

<requestFocus />

<Button

```
    android:id="@+id/button1"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_below="@+id/editText1"  
    android:layout_centerHorizontal="true"  
    android:layout_marginTop="30dp"  
    android:text="변환" />
```




Button 활용 7

■ 사용자 인터페이스

<Button

```
android:id="@+id/button2"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_below="@+id/editText1"  
android:layout_marginTop="30dp"  
android:layout_toRightOf="@id/button1"  
android:text="초기화" />
```

<TextView

```
android:id="@+id/textView1"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_above="@+id/editText2"  
android:layout_alignTop="@+id/editText1"  
android:layout_alignRight="@id/editText1"  
android:text="'C"  
android:textSize="30sp" />
```



Button 활용 7

■ 사용자 인터페이스

<TextView

```
    android:id="@+id/textView2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_alignTop="@+id/editText2"  
    android:layout_alignRight="@+id/editText2"  
    android:layout_alignBottom="@+id/editText2"  
    android:text="'F"  
    android:textSize="30sp" />
```

<RadioGroup

```
    android:id="@+id/radiogroup"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_below="@+id/editText1">
```



Button 활용 7

■ 사용자 인터페이스

```
<RadioButton  
    android:id="@+id/radioButton"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_marginTop="18dp"  
    android:checked="true"  
    android:text="섭씨를 화씨로" />
```

```
<RadioButton  
    android:id="@+id/radioButton2"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="화씨를 섭씨로" />
```

```
</RadioGroup>
```

```
</RelativeLayout>
```



Button 활용 7



■ MainActivity.JAVA

```
public class MainActivity10 extends AppCompatActivity {  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main10);  
  
        EditText edit1 = findViewById(R.id.editText1);  
        EditText edit2 = findViewById(R.id.editText2);  
  
        RadioButton CtoF = findViewById(R.id.radioButton);  
        RadioButton FtoC = findViewById(R.id.radioButton2);  
    }  
}
```



Button 활용 7

■ MainActivity.JAVA

```
RadioGroup radioGroup = findViewById(R.id.radiogroup);
radioGroup.setOnCheckedChangeListener(
    new RadioGroup.OnCheckedChangeListener() {
        @RequiresApi(api = Build.VERSION_CODES.O)
        @Override
        public void onCheckedChanged(RadioGroup group, int checkedId) {
            switch (checkedId) {
                case R.id.radioButton:
                    edit1.setEnabled(true);
                    edit1.setFocusable(true);
                    edit1.setText("");
                    edit1.setHintTextColor(Color.GRAY);
                    edit1.setTextColor(Color.BLACK);
                    edit2.setHintTextColor(Color.WHITE);
                    edit2.setText("");
                    edit2.setEnabled(false);
                    break;
```



Button 활용 7



■ MainActivity.JAVA

```
        case R.id.radioButton2:
            edit2.setEnabled(true);
            edit2.setFocusable(true);
            edit2.setText("");
            edit2.setHintTextColor(Color.GRAY);
            edit2.setTextColor(Color.BLACK);
            edit1.setEnabled(false);
            edit1.setText("");
            edit1.setHintTextColor(Color.WHITE);
        }
    }
});
```

```
Button changeBtn = findViewById(R.id.button1);
changeBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String n1 = edit1.getText().toString();
        String n2 = edit2.getText().toString();
```



Button 활용 7

■ MainActivity.JAVA

```
if (n1.length() == 0 && n2.length() == 0) {  
    Toast.makeText(getApplicationContext(), "온도를 입력하세요",  
        Toast.LENGTH_SHORT).show();  
} else {  
    if (!CtoF.isChecked() && !FtoC.isChecked()){  
        Toast.makeText(getApplicationContext(), "변환을 입력하세요",  
            Toast.LENGTH_SHORT).show();  
    } else {  
        if (CtoF.isChecked()) {  
            if (n1.length() == 0) {  
                Toast.makeText(getApplicationContext(), "화씨온도 입니다",  
                    Toast.LENGTH_SHORT).show();  
            } else {  
                double temp = Integer.parseInt(n1) * 9.0 / 5.0 + 32;  
                edit2.setText(String.format("%.2f", temp));  
                edit2.setTextColor(Color.RED);  
            }  
        } else {  

```



Button 활용 7

■ MainActivity.JAVA

```
    } else {  
        if (n2.length() == 0) {  
            Toast.makeText(getApplicationContext(), "섭씨온도 입니다",  
                Toast.LENGTH_SHORT).show();  
        } else {  
            double temp = (Integer.parseInt(n2) - 32) / 9.0 / 5.0;  
            edit1.setText(String.format("%.2f", temp));  
            edit1.setTextColor(Color.RED);  
        }  
    }  
}  
});
```




Button 활용 7

■ MainActivity.JAVA

```
Button reset = findViewById(R.id.button2);
reset.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        CtoF.setChecked(true);
        edit1.setText("");
        edit2.setText("");
    }
});
}
```