

1. **Create “Hello World” application that will display “Hello World” in the middle of the screen using the TextView Widget in red color.**

```
<?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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:foregroundGravity="center"
        android:gravity="center_horizontal|center_vertical"
        android:text="Hello World !"
        android:textSize="50sp"
        android:textColor="#FD3C3C"
        tools:ignore="InefficientWeight" />
</LinearLayout>
```

## 2. Create a Registration page to demonstrate Basic widgets available in Android.

```
<?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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/et_username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Username"
        android:inputType="textPersonName" />

    <EditText
        android:id="@+id/et_email"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Email"
        android:inputType="textEmailAddress" />

    <EditText
        android:id="@+id/et_password"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Password"
        android:inputType="textPassword" />

    <Button
        android:id="@+id/btn_register"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Register"
        android:backgroundTint="#3b5998"
        android:textColor="#FFFFFF" />

</LinearLayout>
```

**3. Create a sample application with a login module (Check username and password). On successful login, change TextView to “Login Successful.”**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/editTextTextEmailAddress"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:background="#8BA1E2"
        android:hint="Enter your email"
        android:inputType="textEmailAddress"
        android:padding="10dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        tools:ignore="MissingConstraints" />
    <EditText
        android:id="@+id/editTextTextPassword"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:background="#79A9ED"
        android:hint="Enter your password"
        android:inputType="textPassword"
        android:padding="10dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```

        app:layout_constraintTop_toBottomOf="@id/editTextTextEmailAddress" />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="#DDFF00"
    android:onClick="onClickLogin"
    android:text="Log In"
    android:textColor="@color/purple_500"
    app:layout_constraintTop_toBottomOf="@id/editTextTextPassword"
    tools:ignore="MissingConstraints" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

## Java

```

package com.example.loginform;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText editTextEmail, editTextPassword;

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

        editTextEmail = findViewById(R.id.editTextTextEmailAddress);
        editTextPassword = findViewById(R.id.editTextTextPassword);
    }
}

```

```
}
```

```
public void onClickLogin(View view) {
```

```
    String email = editTextEmail.getText().toString();
```

```
    String password = editTextPassword.getText().toString();
```

```
    if ( email.isEmpty() || password.isEmpty()) {
```

```
        Toast.makeText(this, "Please fill all fields", Toast.LENGTH_LONG).show();
```

```
    } else {
```

```
        if(email.equals("temp") && password.equals("temp@gmail.com"))
```

```
        {
```

```
            Intent intent = new Intent(MainActivity.this, Home.class);
```

```
            startActivity(intent);
```

```
        }else {
```

```
            Toast.makeText(this, "Login inccorewct", Toast.LENGTH_LONG).show();
```

```
        }
```

```
    }
```

```
}
```

```
}
```

#### 4. Create an application for demonstration of Scroll View in Android.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
```

```
<ScrollView
    android:layout_width="match_parent"
    android:layout_height="match_parent">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="vertical">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:orientation="vertical">
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
```

```
android:id="@+id/textView3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_weight="1"
android:layout_margin="20dp"
android:textSize="40sp"
android:text="TextView" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
    android:id="@+id/textView5"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
    android:id="@+id/textView6"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
    android:id="@+id/textView63"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
    android:id="@+id/textView61"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:layout_margin="20dp"
    android:textSize="40sp"
    android:text="TextView" />
```

```
<TextView
```

```
        android:id="@+id/textView6545"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:layout_margin="20dp"
        android:textSize="40sp"
        android:text="TextView" />
    <TextView
        android:id="@+id/textView6223"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:layout_margin="20dp"
        android:textSize="40sp"
        android:text="TextView" />
</LinearLayout>
```



## 5. Demonstrate the use of intent in Android.

### Activity\_main.xml

```
<?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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btn_next_activity"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Go to Next Activity" />

</LinearLayout>
```

### Mainactivity.java

```
public class MainActivity extends AppCompatActivity
{
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnNextActivity = findViewById(R.id.btn_next_activity);

        btnNextActivity.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent = new Intent(MainActivity.this, activity_second.class);
                startActivity(intent); // Start the new activity
            }
        });
    }
}
```

```
Activity_second.xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".activity_second">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="page 2"
        tools:ignore="MissingConstraints" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

## 6. Create an application for a calculator.

```
<?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/et_number1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter First Number"
        android:inputType="numberDecimal" />

    <EditText
        android:id="@+id/et_number2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Second Number"
        android:inputType="numberDecimal" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginTop="16dp">

        <Button
            android:id="@+id/btn_add"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Add" />

        <Button
            android:id="@+id/btn_subtract"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Subtract" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginTop="8dp">

        <Button
```

```

        android:id="@+id/btn_multiply"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Multiply" />

        <Button
            android:id="@+id/btn_divide"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Divide" />
    </LinearLayout>

    <TextView
        android:id="@+id/tv_result"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        android:text="Result: "
        android:textSize="18sp"
        android:textColor="#000000" />

</LinearLayout>

```

## Mainactivity.java

```

public class MainActivity extends AppCompatActivity {

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

        EditText etNumber1 = findViewById(R.id.et_number1);
        EditText etNumber2 = findViewById(R.id.et_number2);
        Button btnAdd = findViewById(R.id.btn_add);
        Button btnSubtract = findViewById(R.id.btn_subtract);
        Button btnMultiply = findViewById(R.id.btn_multiply);
        Button btnDivide = findViewById(R.id.btn_divide);
        TextView tvResult = findViewById(R.id.tv_result);

        btnAdd.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateResult(etNumber1, etNumber2, tvResult, "add");
            }
        });
    }
}

```

```
btnSubtract.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        calculateResult(etNumber1, etNumber2, tvResult, "subtract");  
    }  
});
```

```
btnMultiply.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        calculateResult(etNumber1, etNumber2, tvResult, "multiply");  
    }  
});
```

```
btnDivide.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        calculateResult(etNumber1, etNumber2, tvResult, "divide");  
    }  
});  
}
```

```
private void calculateResult(EditText etNumber1, EditText etNumber2, TextView tvResult,  
String operation) {  
    double num1 = Double.parseDouble(etNumber1.getText().toString());  
    double num2 = Double.parseDouble(etNumber2.getText().toString());  
    double result = 0;  
  
    switch (operation) {  
        case "add":  
            result = num1 + num2;  
            break;  
        case "subtract":  
            result = num1 - num2;  
            break;  
        case "multiply":  
            result = num1 * num2;  
            break;  
        case "divide":  
            if (num2 != 0) {  
                result = num1 / num2;  
            } else {  
                tvResult.setText("Error: Division by zero");  
                return;  
            }  
            break;  
    }  
    tvResult.setText("Result: " + result);  
}
```

## 7. Menu Example

### New\_menu.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Menu file -->
<menu xmlns:HTMLCode="http://schemas.android.com/apk/res-auto"
xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:id="@+id/i1" android:title="sub-menu1 "
HTMLCode:showAsAction="never">
        <menu>
            <item android:id="@+id/s11" android:title="sub-menu-item1 "
HTMLCode:showAsAction="ifRoom|withText" />
            <item android:id="@+id/s12" android:title="sub-menu-item-2"
HTMLCode:showAsAction="ifRoom|withText" />
            <item android:id="@+id/s13" android:title="sub-menu-item-3"
HTMLCode:showAsAction="ifRoom|withText" />
        </menu>
    </item>
    <item android:id="@+id/i2" android:title="sub-menu2"
HTMLCode:showAsAction="never">
        <menu>
            <item android:id="@+id/s21" android:title="sub-menu-item-4"
HTMLCode:showAsAction="ifRoom|withText" />
            <item android:id="@+id/s22" android:title="sub-menu-item-5"
HTMLCode:showAsAction="ifRoom|withText" />
        </menu>
    </item>
</menu>
```

### Activity\_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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="@color/white"
tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:orientation="vertical"
        tools:ignore="MissingConstraints">

        <TextView
            android:id="@+id/textView"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="30sp"
        android:text="Sub-Menu Example on GEEKSFORGEEKS" />
```

```
</LinearLayout>
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

## **Mainactivity.java**

```
public class MainActivity extends AppCompatActivity {

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

        ActionBar aBar; aBar= getSupportActionBar();
        ColorDrawable cd = new ColorDrawable(Color.parseColor("#FF00FF00"));
        aBar.setBackgroundDrawable(cd);
    }

    public boolean onCreateOptionsMenu(Menu menu)
    {
        getMenuInflater().inflate(R.menu.new_menu, menu);
        return true;
    }

}
```

## 8. Progress bar

### 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">

    <ProgressBar
        android:id="@+id/progressBar"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        style="@style/Widget.AppCompat.ProgressBar.Horizontal"
        android:max="100"
        android:progress="0"/>

    <Button
        android:id="@+id/startButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Start Progress"/>
</LinearLayout>
```

### maiactivity.xml

```
public class MainActivity extends AppCompatActivity {
    private ProgressBar progressBar;
    private Button startButton;
    private int progressStatus = 0;
    private Handler handler = new Handler();

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

        progressBar = findViewById(R.id.progressBar);
        startButton = findViewById(R.id.startButton);

        startButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                progressStatus = 0;
                new Thread(new Runnable() {
                    @Override
                    public void run() {
                        while (progressStatus < 100) {
                            progressStatus += 5;
                            handler.post(new Runnable() {
                                @Override
```

```
        public void run() {
            progressBar.setProgress(progressStatus);
        }
    });
    try {
        Thread.sleep(500);
    } catch (InterruptedException e) {
        e.printStackTrace();
    }
}
}).start();
}
});
}
```