

| | |
|-------------|---|
| EX 1 | Installation and Configuration of JDK, Android Studio, and Android SDK |
|-------------|---|

Aim

To Install and configure Java Development Kit (JDK), Android Studio, and Android SDK. To Create and deploy a basic 'Hello World' app on Android Studio.

Definitions

Java Development Kit (JDK)

The Java Development Kit (JDK) is a software suite for building Java applications, containing essential tools like the compiler (javac), debugger, and Java Virtual Machine (JVM), allowing developers to write, compile, and run Java code across different platforms. It includes the Java Runtime Environment (JRE) plus development tools, available from Oracle and other sources like OpenJDK for free use, even commercially for recent versions.

Android Studio

Android Studio is the official **Integrated Development Environment (IDE)** for developing applications for the Android operating system. It provides a comprehensive suite of tools and features to simplify the entire app development process, from coding and building to testing and debugging.

Android SDK

The **Android SDK** (Software Development Kit) is a comprehensive collection of tools, libraries, documentation, and sample code provided by Google that is essential for developing applications that run on the Android operating system.

Procedure

1. Open Android Studio IDE → select “Start a New Android Studio Project” → specify the application name “Hello World App” and company domain “com.mad.helloworld” → click “next” → choose Minimum SDK “API 17:Android 4.2(Jelly Bean)” → click “Next” → choose “Blank Activity” → click “next” → specify the Activity Name “HelloWorld” → click “Finish”.
2. Open HelloWorld.java under app/java/helloworld.mad.com.helloworldapp and type the following codes:

HelloWorld.java

```
package helloworld.mad.com.helloworldapp;

import android.app.AlertDialog;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class HelloWorld extends AppCompatActivity {

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

        final Button button;
        button = (Button) findViewById(R.id.button_id);
        button.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
                AlertDialog.Builder builder = new AlertDialog.Builder(HelloWorld.this);
                builder.setMessage("Hello world!");
                AlertDialog dialog = builder.create();
                dialog.show();
            }
        });
    }
}
```

3. Open activity_hello_world.xml under app/res/layout and type the following codes:

activity_hello_world.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:gravity="center"
```

```

        android:orientation="vertical">

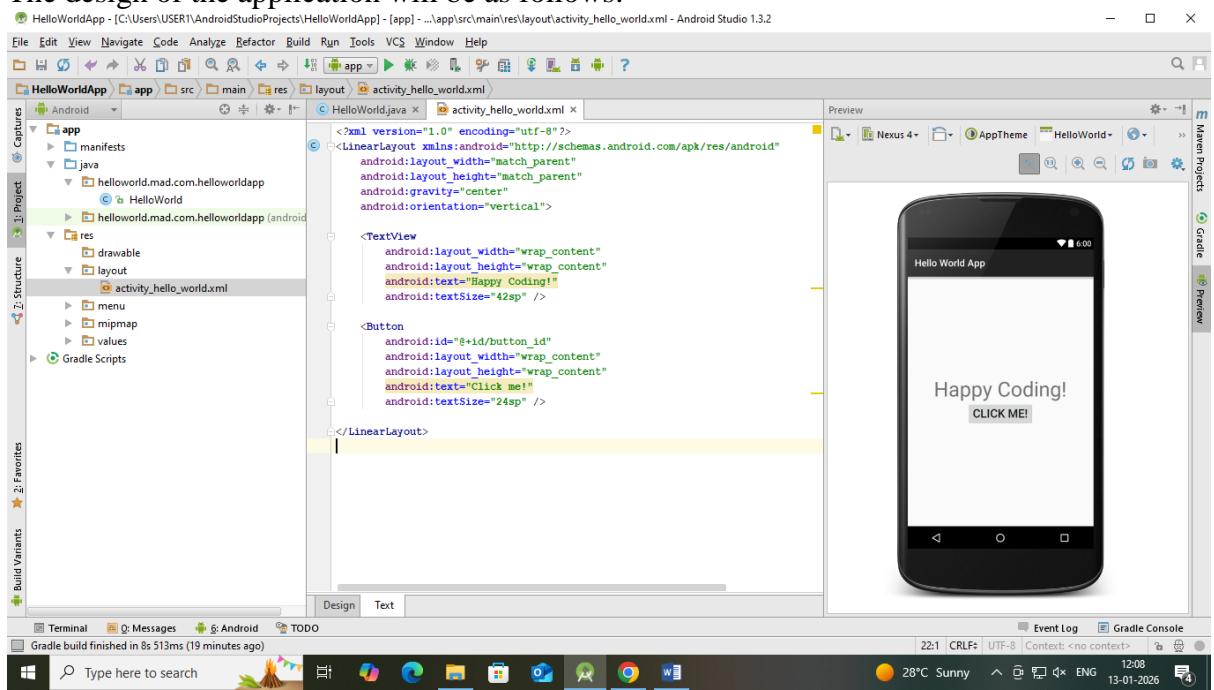
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Happy Coding!"
    android:textSize="42sp" />

<Button
    android:id="@+id/button_id"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Click me!"
    android:textSize="24sp" />

</LinearLayout>

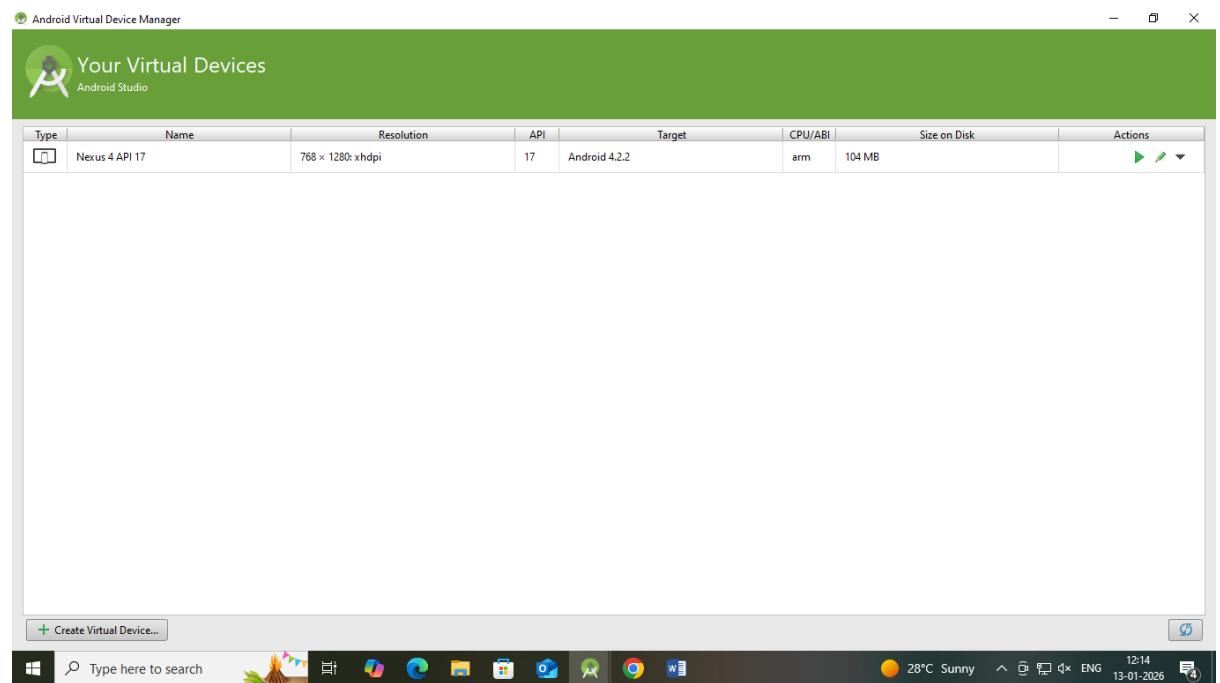
```

4. The design of the application will be as follows:



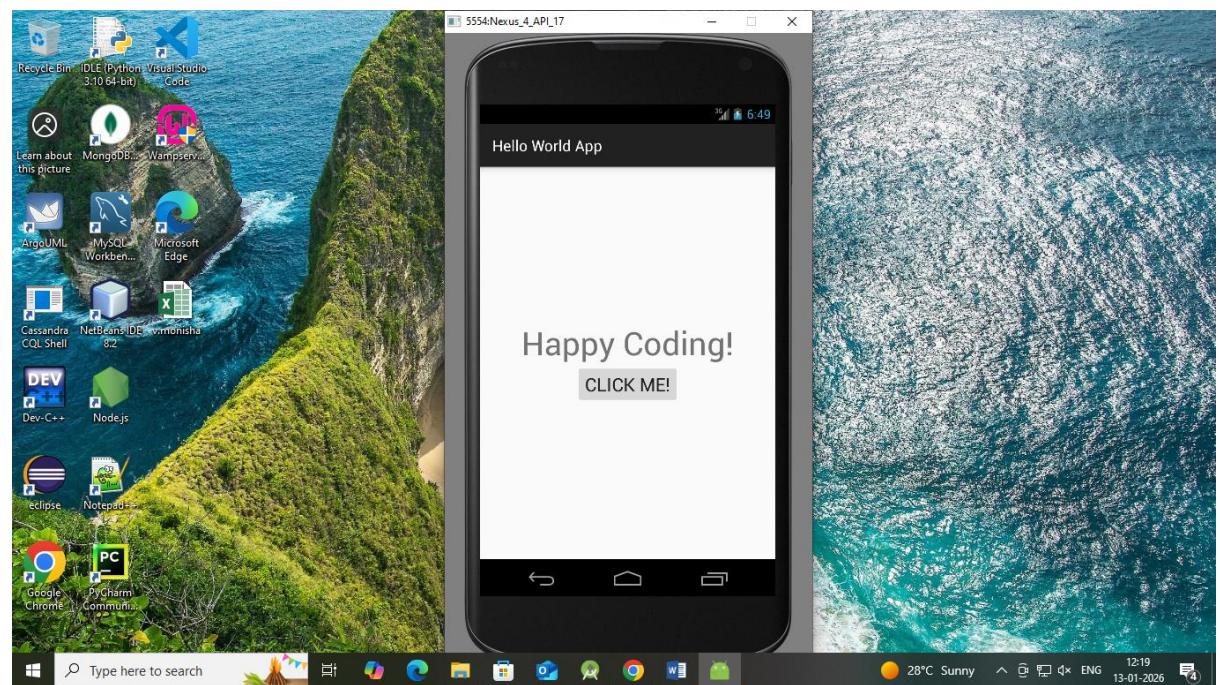
5. Go to Tools → android → AVD Manager → click “+ create a virtual device” → select “phone” from category → select “Nexus 4” from the list → click “next” → select Release name: Jelly Bean, API Level: 17, ABI: armeabi-v7a, Target: Android 4.4.2 from the list → click “next” → Choose orientation “portrait” → click “finish”.

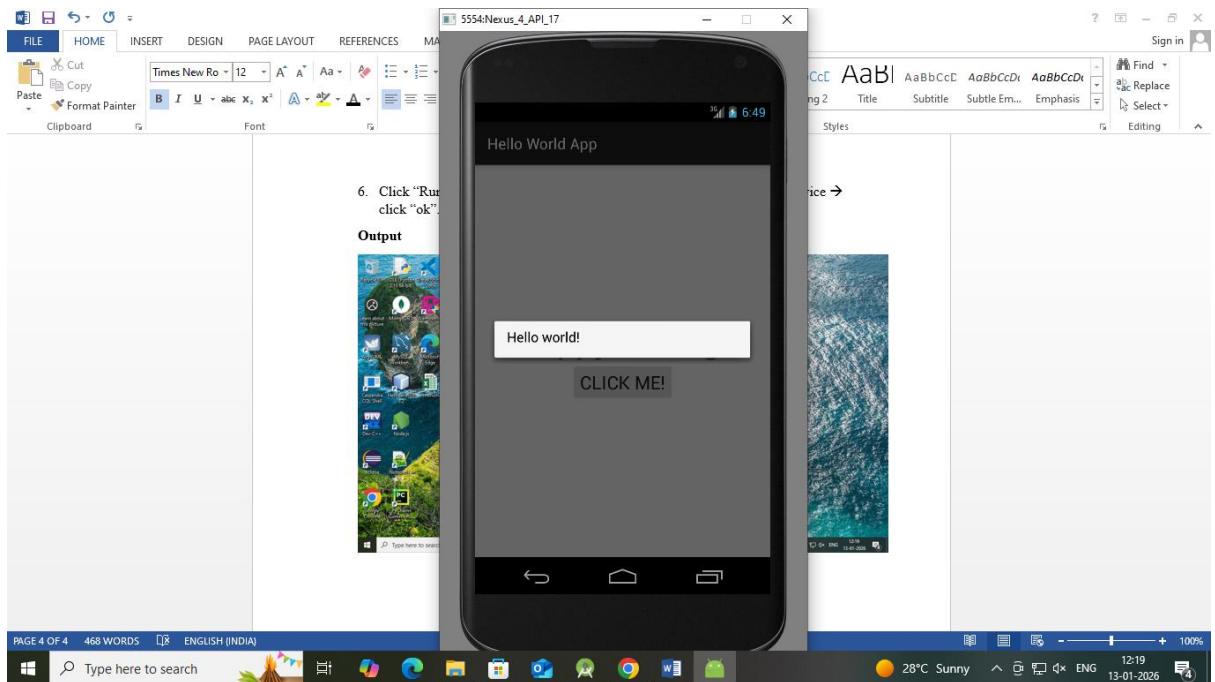
The following window will appear after configuring AVD:



6. Click “Run app” button in the Android Studio → choose android virtual device → click “ok”.

Output





Result

Thus, Java Development Kit (JDK), Android Studio, and Android SDK are installed and configured. Also, a basic 'Hello World' app on Android Studio has been created and deployed.