



श्रेष्ठ इंडस्ट्री इन्टरफेस के लिए CMAI, AICTE & RGPV

द्वारा पुरस्कृत

## Laboratory Manual Android Programming (IT-606)

## For Third Year Students Department: Information Technology

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## **Department of Information Technology**

## **Vision of IT Department**

The Department of Information Technology envisions preparing technically competent problem solvers, researchers, innovators, entrepreneurs, and skilled IT professionals for the development of rural and backward areas of the country for the modern computing challenges.

## **Mission of the IT Department**

- To offer valuable education through an effective pedagogical teaching-learning process.
- To shape technologically strong students for industry, research & higher studies.
- To stimulate the young brain entrenched with ethical values and professional behaviors for the progress of society.

### **Programme Educational Objectives**

#### Graduates will be able to

- Our engineers will demonstrate application of comprehensive technical knowledge for innovation and entrepreneurship.
- Our graduates will employ capabilities of solving complex engineering problems to succeed in research and/or higher studies.
- Our graduates will exhibit team-work and leadership qualities to meet stakeholder business objectives in their careers.
- Our graduates will evolve in ethical and professional practices and enhance socioeconomic contributions to the society.



## **Program Outcomes (POs)**

#### Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering Fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological ch



## **Course Outcomes**

## **Android Programming (IT 606)**

CO1:	Experiment on Integrated Development Environment for Android Application
	Development.
CO2 :	Design and Implement User Interfaces and Layouts of Android App.
CO3 :	Use Intents for activity and broadcasting data in Android App.
CO4 :	Design and Implement Database Application and Content Providers.
CO5 :	Experiment with Camera and Location Based service and develop Android App with Security features.

INSTITUTE OF TECHNOLOGY & MANAGEMENT

Course	Course Outcomes	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Experiment with Camera and Location Based service and develop Android App with Security features.		2	0	0	0	0	0	0	0	0	0	0	0	1		1
CO2	DesignandImplementUserInterfacesandLayoutsofAndroidApp.		0	2	0	1	1	0	0	0	1	0	0	0	1		1
CO3	Use Intents for activity and broadcasting data in Android App.		1	1	2	1	2	0	0	0	0	0	0	0	2	1	0
CO4	DesignandImplementDatabaseApplicationandContentProviders.		1	1	0	1	0	0	0	0	0	0	0	0	1		1
CO5	Experiment with Camera and Location Based service and develop Android App with Security features.		0	1	2	0	1	1	0	0	1	0	0	0	2	1	0

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5.	Write program for developing an Android application using a relative layout.	CO4	19-21
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### **1. Introduction to android.**

**Objective:** Student should get the knowledge of android operating system background.

**Outcome:** Student will be aware of the android operating system. Android Architecture.

Different numbers of components make up the Android architecture, which supports the needs of any Android device. The open-source Linux Kernel that powers Android apps is made up of several C/C++ libraries that are made available via application framework services. Of all the parts, the Linux Kernel gives smartphones its primary operating system functionality, and the Dalvik Virtual Machine (DVM) offers a foundation on which to run Android applications. The following are the key elements of Android architecture:

Applications Application Framework Android Runtime Platform Libraries Linux Kernel

#### Applications –

The top layer of the Android architecture is called Applications. Only this layer will have the installed third-party apps (such games and chat apps) and pre-installed apps (including contacts, camera, gallery, and home) from the play store. With the aid of the classes and services the application framework offers, it operates inside the Android run time.

#### Application framework -

A number of crucial classes are provided by the Application Framework and are needed to construct an Android application. It assists in controlling the user interface with application resources and offers a general abstraction for hardware access. Generally speaking, it offers the services that enable us to develop a certain class and make it useful for the building of applications. It contains a variety of services, such as package manager, view system, activity manager, notification manager, and others, that are useful for developing our application in accordance with the requirements.



#### Application runtime –

One of the most crucial components of Android is the Android Runtime Environment. It includes elements such as the Dalvik virtual machine (DVM) and core libraries. It primarily serves as the foundation for the application framework and, with the aid of the core libraries, powers our application. Similar to Java Virtual Machine (JVM), Dalvik Virtual Machine (DVM) is a register-based virtual machine designed specifically for Android and optimized to run many instances of the program on a device seamlessly. The Linux kernel layer is responsible for threading and low-level memory



management. Because of the fundamental libraries, we can create Android applications using the standard Java or Kotlin programming languages.

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#### **Platform libraries –**

• To enable Android development, the Platform Libraries comprise a number of Java-based and C/C++ essential libraries, including Media, Graphics, Surface Manager, OpenGL, and others.

• Support for playing and recording audio and video formats is offered by the media library.

The surface manager, which is in charge of controlling display subsystem access.

- For 2D and 3D computer graphics, there are two cross-language and cross-platform application program interfaces (APIs): SGL and OpenGL.
- FreeType offers font support, while SQLLite offers database functionality.

• Web-Kit The entire feature set for displaying web content and streamlining page loading is provided by this open source web browser engine.

• A secure technology called Secure Sockets Layer creates an encrypted connection between a web server and a web browser.

#### Linux Kernel –

• The core of the Android architecture is the Linux kernel. It controls all of the drivers that are needed during runtime, including those for displays, cameras, Bluetooth devices, audio devices, memory cards, and more. An abstraction layer between the hardware of the device and the other elements of the Android architecture will be provided by the Linux Kernel. Memory, power, device management, and other things fall under its purview. The Linux kernel's characteristics are:

• **Security:** The protection of the application from the system is handled by the Linux kernel.

• **Memory Management:** It effectively manages memory, giving us the flexibility to create our apps.

• **Process Management:** It effectively oversees the process and allots resources to it as needed.

• Network Stack: It manages network communication efficiently.



• **Driver Model:** This guarantees that the program functions correctly on the hardware and that the hardware manufacturers are in charge of integrating their drivers into the Linux build.

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### 2. Development of hello world application.

The first step in designing an Android application that displays Hello World is to use Android Studio to construct a basic Android application. The screen that appears when you click on the Android Studio icon is as follows.

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	Android Studio Setup Wizard	×
👲 We	lcome to Android Studio	
Recent Projects	Quick Start	
	Start a new Android Studio project	
	Open an existing Android Studio project	
No Project Open Yet	Import an Android code sample	
	Check out project from Version Control	
	Import project (Eclipse ADT, Gradle, etc.)	
	Configure	ф
	-0	

To begin developing an application, select Start a New Android Studio Project. Asking for the application name, package details, and project location should appear in a new installation frame.



Set Up the Specifics of the Hello World Project

By setting up the project's name, location, and API version, we'll complete its creation.

	Create New Project	×
Configure your project		
	Name	
	Hello World Application	
<del>(</del>	Package name	
	com.example.helloworldapplication	
	Save location	
	:her/Desktop/MainSourceCode_360VideoPlayer/HelloWorldApplication 🚞	
	Language	
	Java 👻	
Empty Activity	Minimum API level API 15: Android 4.0.3 (IceCreamSandwich)	
	Your app will run on approximately 100% of devices. Help me choose	
Creates a new empty activity	This project will support instant apps	
	Use androidx.* artifacts	
	Previous Next Cancel	Finish



Modify the application's name. You can either leave the project's default location alone or change it to your chosen directory.

Make sure that API 15: Android 4.0.3 IceCreamSandwich is selected as the Minimum SDK for the minimum API level. This guarantees that practically every device can use your application.

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😨 Create New Project				×
Reget Android De	vices			
Select the form factors your app w	rill run on			
Different platforms may require separate SDKs				
💟 Phone and Table				
Minimum SDK	API 23: Android 6.0 (Marshmallow)			
	Lower API levels target more devices, but have fewer features available. By targeting API 23 and later, your app will run on approximately 4.7% of the devices that are active on the Google Play Store. Help me choose			
🗍 Wear				
Minimum SDK	API 21: Android 5.0 (Lollipop)			
Minimum SDK	API 21: Android 5.0 (Lollipop)			
C Android Auto				
Gless				
Minimum SDK	Glass Development Kit Preview (API 19)		•	
		Previous	Cancel	Lines

The next step in the installation process should be choosing the mobile activity, which sets the application's default layout.



#### SOURCE CODE :

The Main Activity File

The main activity code is a Java file MainActivity.java. This is the actual application file which

ultimately gets converted to a Dalvik executable and runs your application package com.example.helloworldapplication;

import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle;

public class MainActivity extends AppCompatActivity { @Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

} }

The Layout File

The activity\_main.xml is a layout file available in res/layout directory, that is referenced by your

application when building its interface. You will modify this file very frequently to change the

layout of your application. For your "Hello World!" application, this file will have following content

related to default layout -



<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" >

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<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_centerHorizontal="true" android:layout\_centerVertical="true" android:padding="@dimen/padding\_medium" android:text="@string/hello\_world" tools:context=".MainActivity" />

#### I )Running app on Phone:

Connect your Phone to Computer Plug in your device to your computer with a USB cable. If you're developing on Windows, you might need to install this universal ADB USB driver or find your specific USB driver for you

to install this universal ADB USB driver or find your specific USB driver for your device.

#### **Enable USB Debugging**

The next step is to enable USB debugging so your phone can interact with your computer in a developer mode.



#### The following steps are needed:

- 1. (Windows Only) Install this ADB Driver
- 2. Plug-in your Android Device to Computer via USB
- 3. Open the "Settings" App on the Device
- 4. Scroll down to bottom to find "About phone" item
- 5. Scroll down to bottom to find "Build number" section



- 6. Tap on "Build Number" 7 times in quick succession
- 7. You should see the message "You are now a developer!"
- 8. Go back to main "Settings" page
- 9. Scroll down bottom to find "Developer options" item
- 10. Turn on "USB Debugging" switch and hit "OK"
- 11. Unplug and re-plug the device
- 12. Dialog appears "Allow USB Debugging?"
- 13. Check "Always allow from this computer" and then hit "OK"

#### **Running your App**

Now, we can launch apps from Android Studio onto our device:

1. Select one of your projects and click "Run" from the toolbar.

2. In the "Choose Device" window that appears, select the "Choose a running device" radio button, select the

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device, and click OK.

#### **II)** Running app on Emulator(AVD)

To run the app from Android studio, open one of your project's activity files and click Run icon from the toolbar. Android studio installs the app on your AVD and starts it and if everything is fine with your set-up and application, it will display following Emulator window –Once Gradle finishes building, Android Studio should install the app on your connected device and start it.





**3.** Program for building a simple user interface using a XML for UI layout

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Aim:- Program for building a simple user interface using a XML for UI layout

**Objective: Student should be able to design their own UI for android application using XML.** 

Outcome:- Student will demonstrate the basic application using UI in android. Software: Microsoft Windows (07 or later) The Android SDK (Starter Package) Java Development Kit (JDK) 5 or 6. Eclipse Code: Activity\_main.xml:

<?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="horizontal">

<EditText android:id="@+id/edit\_message" android:layout\_weight="1" android:layout\_width="0dp" android:layout\_height="wrap\_content" android:hint="@string/edit\_message" /> <Button android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_height="wrap\_content" android:text="@string/button\_send" /> </LinearLayout> **Res/values/Strings.xml:** <?xml version="1.0" encoding="utf-8"?>

<string name="app\_name">second</string>
<string name="edit\_message">Enter a message</string>
<string name="button\_send">Send</string>
<string name="menu\_settings">Settings</string>
<string name="title\_activity\_main">MainActivity</string>



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#### Output:







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## 4. Program for developing an Android Application using a linear layout.

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Aim:- Program for developing an Android Application using a linear layout Objective:

Student should be able to design android application using linear layout.

**Outcome:** Student will demonstrate the android application using linear layout.

#### Software:

1.	Microsoft Windows (07 or later)
2.	The Android SDK (Starter Package)
3.	Java Development Kit (JDK) 5 or 6.
4.	Eclipse

#### Theory:

The Linear Layout is one of the simplest layout classes. It allows you to create simple UIs (or UI elements) that align a sequence of child Views in either a vertical or a horizontal line. Linear Layout is a view group that aligns all children in a single direction, vertically or horizontally.

#### Code:

Activity\_main.xml:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools" android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:orientation="vertical" >
<Button
android:id="@+id/btnStartService" android:layout_width="150dp"
android:layout_height="wrap_content"android:text="@string/start_service"/>
```

<Button android:id="@+*id/btnPauseService*" android:layout\_width="150dp" android:layout\_height="wrap\_content" android:text="@string/pause\_service"/>



<Button android:id="@+id/btnStopService" android:layout\_width="150dp" android:layout\_height="wrap\_content" android:text="@string/stop\_service" />

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</LinearLayout>

Res/values/Strings.xml:

<?xml version="1.0" encoding="utf-8"?> <resources>

<string name="app\_name">linearapp</string> <string name="menu\_settings">Settings</string> <string name="start\_service">Start</string> <string name="pause\_service">Pause</string> <string name="stop\_service">Stop</string>

</resources>

Output:





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**Conclusion:** Thus, students understood how to demonstrate an android application using linear



# 5. Program for developing an Android Application using a Relative layout

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Aim:- Program for developing an Android Application using a Relative layout.

**Objective:** Student should be able to design android application using relative layout.

**Outcome:** Student will demonstrate the android application using relative layout.

#### <u>Software:</u>

- 1. Microsoft Windows (07 or later)
- 2. The Android SDK (Starter Package)
- 3. Java Development Kit (JDK) 5 or 6.
- 4. Eclipse

#### Theory:

The Relative Layout provides a great deal of flexibility for your layouts, allowing you to define the position of each element within the layout in terms of its parent and other views. Relative Layout is a view group that displays child views in relative positions.

#### Code:

Activity\_main.xml:

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools" android:layout\_width="fill\_parent" android:layout\_height="fill\_parent" android:orientation="vertical">

<Button android:id="@+id/btnStartService" android:layout\_width="100dp" android:layout\_height="wrap\_content" android:text="@string/start\_service"/> <Button android:id="@+id/btnPauseService" android:layout\_width="350dp" android:layout\_height="wrap\_content" android:text="@string/pause\_service" />



<Button android:id="@+*id/btnStopService*" android:layout\_width="100dp" android:layout\_height="*wrap\_content*" android:layout\_alignParentRight="*true*"

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android:layout\_alignParentTop="true" android:text="@string/stop\_service" /> </RelativeLayout>

Res/values/Strings.xml:

<?xml version="1.0" encoding="utf-8"?> <resources>

<string name="app\_name">third</string> <string name="menu\_settings">Settings</string> <string name="start\_service">Start</string> <string name="pause\_service">Pause</string> <string name="stop\_service">Stop</string>

</resources>

## **OUTPUT:**





**<u>Result</u>:** - Students design an android application using relative layout.

**Conclusion:** Thus, students understood how to demonstrate an android application using relative layout.



# 6. Program for developing an Android Application using a Table layout

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Aim:- Program for developing an Android Application using a Table layout.

**Objective:** Student should be able to design android application using Table layout.

**Outcome:** Student will demonstrate the android application using Table layout.

#### <u>Software:</u>

- 1. Microsoft Windows (07 or later)
- 2. The Android SDK (Starter Package)
- 3. Java Development Kit (JDK) 5 or 6.
- 4. Eclipse

#### Theory:

Table Layout is a view that groups views into rows and columns.

#### Code:

Activity\_main.xml:

<?xml version="1.0" encoding="utf-8"?>

<TableLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools" android:layout\_width="fill\_parent" android:layout\_height="fill\_parent" >

<TableRow>

<Button android:id="@+id/backbutton"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Back" />

</TableRow>

<TableRow>



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<TextView>

android:text="FirstName" android:layout\_width="wrap\_content"
android:layout\_height="wrap\_content"android:layout\_column="1" />

<<u>EditText</u> android:width="100dp" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"/> </TableRow>

<TableRow>

<TextView <u>android:text="Last Name"</u> android:layout\_width="wrap\_content android:layout\_height="wrap\_content" android:layout\_column="1" /> <<u>EditText</u> android:width="100dp" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"/>

</TableRow>

</TableLayout>

Res/values/Strings.xml

<?xml version="1.0" encoding="utf-8"?> <resources>

<string name="app\_name">tablelayout</string> <string name="menu\_settings">Settings</string>

</resources>

Output:





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**<u>Result</u>:** - Students design an android application using table layout.

**Conclusion:** Thus, students understood how to demonstrate an android application using table layout.



# 7. Program for developing an Android Application using Absolute layout

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Aim:- Program for developing an Android Application using Absolute layout.

**Objective:** Student should be able to design android application using absolute layout.

**Outcome:** Student will demonstrate the android application using absolute layout.

#### Software:

- 1. Microsoft Windows (07 or later)
- 2. The Android SDK (Starter Package)
- 3. Java Development Kit (JDK) 5 or 6.
- 4. Eclipse

#### Theory:

Absolute Layout enables you to specify the exact location of its children.

#### Code:

Activity\_main.xml:

<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android" android:layout\_width="fill\_parent" android:layout\_height="fill\_parent" >

<Button android:layout\_width="100dp" android:layout\_height="wrap\_content"android:text="ok" android:layout\_x="50dp" android:layout\_y="361dp" />

<Button android:layout\_width=" 100dp" android:layout\_height="wrap\_content"android:text="Cancel" android:layout\_x="225dp" android:layout\_y="361dp" />



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</AbsoluteLayout>

Res/values/Strings.xml <?xml version="1.0" encoding="utf-8"?> <resources>

<string name="app\_name">absolutelayout</string> <string name="menu\_settings">Settings</string>

</resources>

Output:

😔 5554:tableavd				
		<sup>36</sup> 7:34	Basic Controls	
💼 absolutear	op	=	Hardware Buttons	•
				$\Theta$
			DPAD not enabled in AVE	
			Hardware Keyboard Use your physical keybo	ard to provide input
ok	cancel			-

**<u>Result</u>:** - Students design an android application using absolute layout.

**Conclusion:** Thus, students understood how to demonstrate an android application using absolute layout.



## 8. Program for developing an Android Application using a Frame layout.

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<u>Aim:-</u> Program for developing an Android Application using a Frame

layout. **Objective:** Student should be able to design android application

using Frame layout. Outcome: Student will demonstrate the android

application using Frame layout.

#### Software:

- 1. Microsoft Windows (07 or later)
- 2. The Android SDK (Starter Package)
- 3. Java Development Kit (JDK) 5 or 6.
- 4. Eclipse

#### **Theory**:

The Frame Layout is a placeholder on screen that you can use to display a single view.

#### Code:

#### a. MainActivity.Java code

package

com.example.framelayo

ut;import

android.os.Bundle; import android.app.Activity;



public class MainActivity

extends Activity { @Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity\_main);

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} }

#### b. activity\_main.xml code

<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android" android:layout\_width="fill\_parent" android:layout\_height="fill\_parent" >

<ImageView
android:src="@drawable/ic\_launcher"
android:scaleType="fitCenter"
android:layout\_height="250dp"
android:layout\_width="250dp"/>

<TextView <u>android:text="Frame</u> <u>Demo"</u> android:textSize="30 sp" android:textStyle="b old" android:layout\_height="fill\_ parent" android:layout\_width="fill\_ parent" android:gravity="center" />

</Frame



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Layout>

Res/valu

es/String

s.xml <?xml version="1.0" encoding="utf-8"?> <resources>

<string name="app\_name">framelayout</string> <string name="menu\_settings">Settings</string>

</resources>



#### Output:



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**<u>Result</u>**: - Students design an android application using frame layout.

**<u>Conclusion</u>**: Thus, students understood how to demonstrate an android application Using frame layout



## 9. Developing an android application using Relative layout to display Date and time.

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Aim:- Developing an android application using Relative layout to display Date and time.

**Objective:** Student should be able to design android application using relative layout todisplay Date and time.

**Outcome:** Student will demonstrate the android application using relative layout to displayDate and time.

#### Software:

- 1. Microsoft Windows (07 or later)
- 2. The Android SDK (Starter Package)
- 3. Java Development Kit (JDK) 5 or 6.
- 4. Eclipse

#### Theory:

Relative Layout is a view group that displays child views in relative positions.

#### Code:

#### 1. MainActivity.Java

package com.example.relativeapp;

import java.text.SimpleDateFormat; import java.util.Date; import android.os.Bu



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ndle; **import** android.app.A ctivity; **import** android.view.M enu; **import** android.widget.TextView;

public class MainActivity

extends Activity { @Override
protected void onCreate(Bundle savedInstanceState)
{super.onCreate(savedInstanceState);
setContentView(R.layout.activity\_main);

SimpleDateFormat dateFormat = **new** SimpleDateFormat("yyyy/MM/dd");

Date date = new Date(); String nowDate = dateFormat.format(date); TextView dateView = (TextView)findViewById(R.id.dates); dateView.setText(nowDate);

SimpleDateFormat timeFormat= **new** SimpleDateFormat("HH:mm:ss");String nowTime = timeFormat.format(date);

TextView timeView = (TextView)findViewById(R.id.*times*); timeView.setText(nowTime);

}

@Override
public boolean onCreateOptionsMenu(Menu menu) {
// Inflate the menu; this adds items to the action bar if it is present.
getMenuInflater().inflate(R.menu.main, menu);
return true;
}

}





#### 1. res/layout/activity\_main.xml

```
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:paddingLeft="
16dp"
android:paddingRight=
"16dp"
>
<EditText android:id = "@+id/name"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:hint = "@string/reminder" />
<TextView
android:id = "@+id/dates" android:layout_width="96dp"
android:layout_height="wrap_content"
android:layout_below="@id/name"
android:layout_alignParentLeft="true"
android:layout_toLeftOf="@+id/times"
>
<TextView android:id="@+id/times"
android:layout_width="96dp"
android:layout_height="wrap_content"
android:layout_below="@id/name"
android:layout_alignParentRight="true
" />
```

<Button android:layout\_width



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="96dp" android:layout\_height="wrap\_content" android:layout\_below="@+id/dates" android:layout\_toLeftOf="@+id/times" android:text="@string/done" />

</RelativeLayout>

#### 1. res/values/strings.xml

<?xml version="1.0" encoding="utf-8"?> <resources>

<string name="app\_name">relativeapp</string> <string name="action\_settings">Settings</string> <string name="reminder">Enter your name</string> <string name = "done">Done</string>

</resources>





**<u>Result</u>:** - Students design an android application using relative layout to display Date & Time.

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**<u>Conclusion</u>**: Thus, students understood how to demonstrate an android application using relative layout to display Date & Time.



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