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Introduction to Mobile Computing with Android

Prof. Manish Kumar Joshi, Assistant Professor
IT & Computer Science

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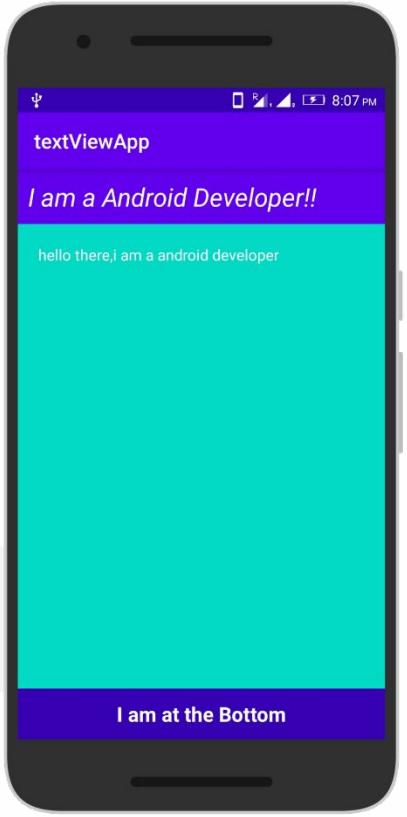
DIGITAL LEARNING CONTENT

CHAPTER-3

Master Android UI Components

TextView

A **TextView** displays text to the user and optionally allows them to edit it. A TextView is a complete text editor, however the basic class is configured to not allow editing.



TextView Attributes

Following are the important attributes related to TextView control. You can check Android official documentation for complete list of attributes and related methods which you can use to change these attributes are run time.

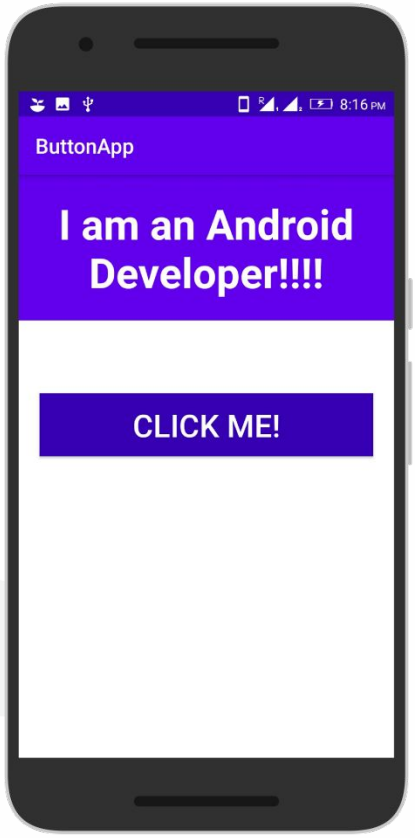
- android:id
- android:capitalize
- android:cursorVisible
- android:editable
- android:fontFamily
- android:gravity

TextView Attributes

- android:hint
- android:inputType
- android:maxHeight
- android:maxWidth
- android:minHeight
- android:minWidth
- android:password
- android:phoneNumber
- android:text
- android:textAllCaps
- android:textColor
- android:textColorHighlight
- android:textColorHint
- android:textIsSelectable

Button

In Android, **Button** represents a push button. A Push buttons can be clicked, or pressed by the user to perform an action. There are different types of buttons used in android such as Compound Button, Toggle Button, Radio Button.



Button

Button is a subclass of TextView class and compound button is the subclass of Button class. **On a button we can perform different actions or events like click event, pressed event, touch event etc.**
Android buttons are GUI components which are sensible to taps (clicks) by the user. When the user taps/clicks on button in an Android app, the app can respond to the click/tap. These buttons can be divided into two categories: the first is Buttons with text on, and second is buttons with an image on. A button with images on can contain both an image and a text. Android buttons with images on are also called ImageButton.

Button Attributes

Following are the important attributes related to Button control. You can check Android official documentation for complete list of attributes and related methods which you can use to change these attributes are run time.

Inherited from **android.widget.TextView** Class

- android:autoText
- android:drawableButtom
- android:drawableRight
- android:editable
- android:text

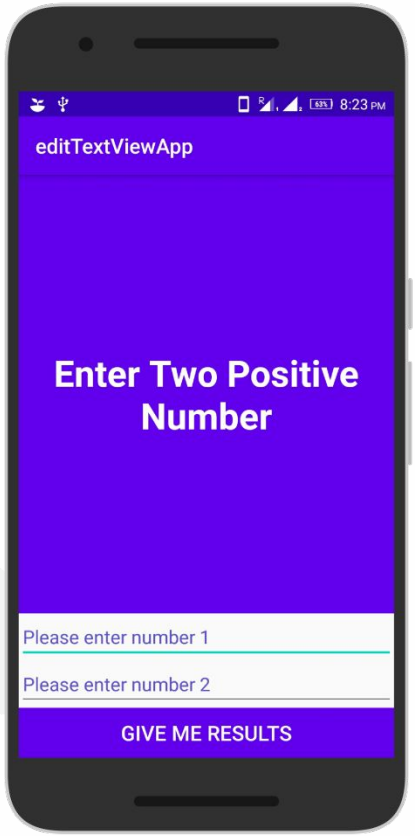
Button Attributes

Inherited from **android.view.View** Class −

- android:background
- android:contentDescription
- android:id
- android:onClick
- android:visibility

EditText

A EditText is an overlay over TextView that configures itself to be editable. It is the predefined subclass of TextView that includes rich editing capabilities.



EditText

In Android, EditText is a standard entry widget in android apps. It is an overlay over TextView that configures itself to be editable. EditText is a subclass of TextView with text editing operations. **We often use EditText in our applications in order to provide an input or text field, especially in forms.** The most simple example of Edit Text is Login or Sign-in form.

EditText Attributes

Following are the important attributes related to EditText control. You can check Android official documentation for complete list of attributes and related methods which you can use to change these attributes are run time.

Inherited from **android.widget.TextView** Class

- android:autoText
- android:drawableButtom
- android:drawableRight
- android:editable
- android:text

EditText Attributes

Inherited from **android.view.View** Class −

- android:background
- android:contentDescription
- android:id
- android:onClick
- android:visibility

ImageView

In Android, ImageView class is used to display an image file in application. Image file is easy to use but hard to master in Android, because of the various screen sizes in Android devices. An android is enriched with some of the best UI design widgets that allows us to build good looking and attractive UI based application.

ImageView Attributes

- android:background
- android:src
- android:id
- android:scaleType

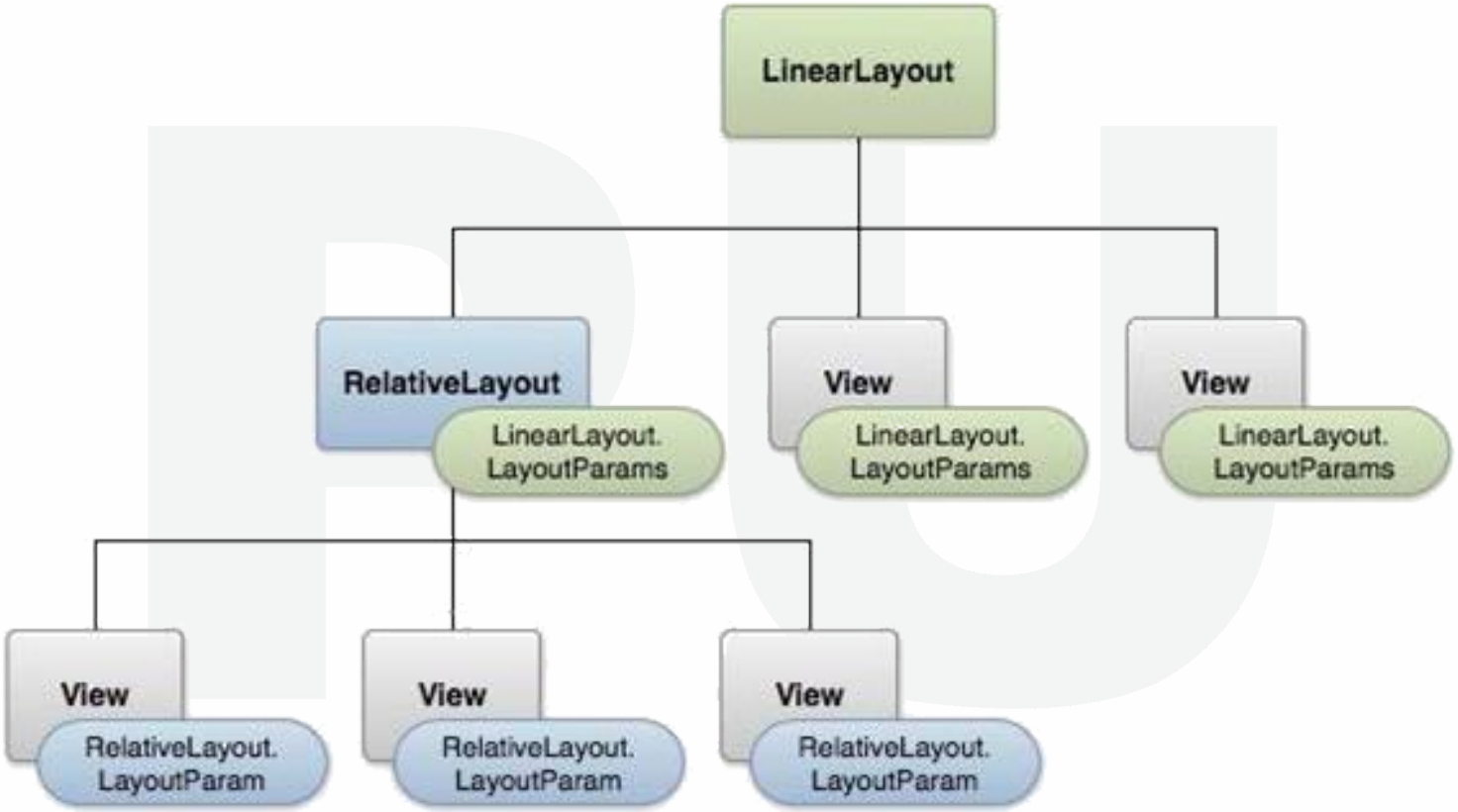
Android Layouts

Android **Layout** is used to define the user interface which holds the UI controls or widgets that will appear on the screen of an android application or activity. Generally, every application is combination of View and ViewGroup. As we know, an android application contains a large number of activities and we can say each activity is one page of the application. So, each activities contains multiple user interface components and those components are the instances of the View and ViewGroup.

Android Layouts

A View is defined as the user interface which is used to create an interactive UI components such as TextView, EditText, Radio Button, etc. and it responsible for event handling and drawing.
A ViewGroup act as a base class for layouts and layouts parameters which hold other Views or ViewGroups and to define the layout properties.

Android Layouts



Types of Android Layouts

- ***Android Linear Layout:*** LinearLayout is a ViewGroup subclass, used to provide child View elements one by one either in a particular direction either horizontally or vertically based on the orientation property.

- ***Android Relative Layout:*** RelativeLayout is a ViewGroup subclass, used to specify the position of child View elements relative to each other like (A to the right of B) or relative to the parent (fix to the top of parent).

- ***Android Constraint Layout:*** ConstraintLayout is a ViewGroup subclass, used to specify the position of a layout constraints for every child View relative to other views present. A ConstraintLayout is similar to a RelativeLayout, but having more power.

Types of Android Layouts

- ***Android Frame Layout:*** FrameLayout is a ViewGroup subclass, used to specify the position of View elements it contains on the top of each other to display only single View inside the FrameLayout.
- ***Android Table Layout:*** TableLayout is a ViewGroup subclass, used to display the child View elements in rows and columns.
- ***Android Web View:*** WebView is a browser which is used to display the web pages in our activity layout.
- ***Android List View:*** ListView is a ViewGroup, used to display scrollable list of items in single column.
- ***Android Grid View:*** GridView is a ViewGroup which is used to display scrollable list of items in grid View of rows and columns.

Layout Attributes

- android:id
- android:layout_width
- android:layout_height
- android:layout_marginLeft
- android:layout_marginRight
- android:layout_marginTop
- android:layout_marginBottom
- android:layout_gravity

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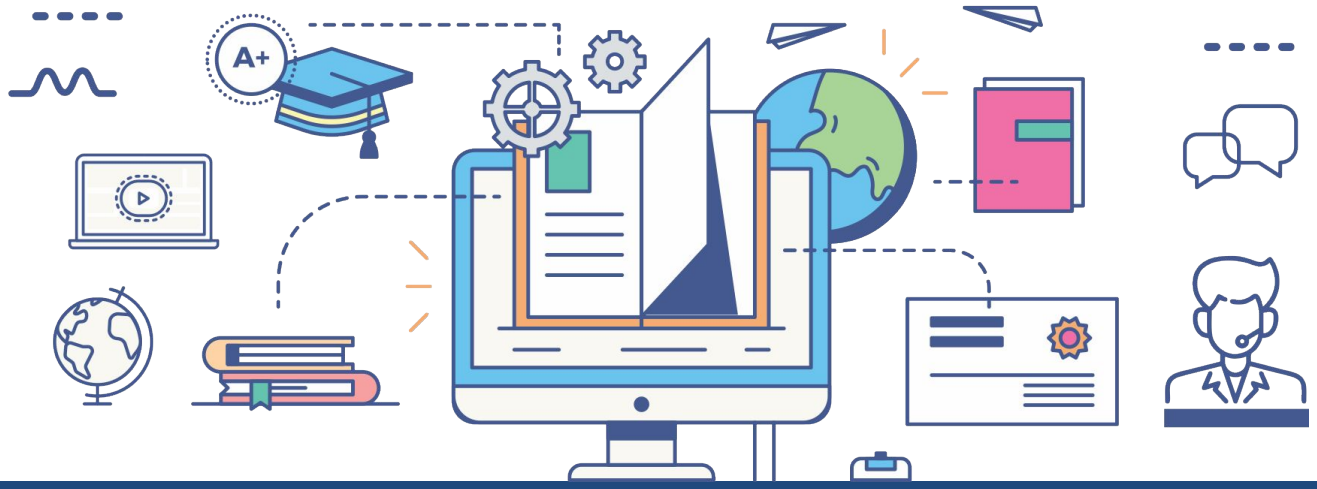

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