Department of Information Technology

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Subject: MAD & PWA Lab
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Aim: To design a layout of Flutter App using layout widgets.

Theory:

The main concept of the layout mechanism is the widget. We know that flutter assume everything as a widget. So the image, icon, text, and even the layout of your app are all widgets. Here, some of the things you do not see on your app UI, such as rows, columns, and grids that arrange, constrain, and align the visible widgets are also the widgets.

Layout a widget

Let us learn how we can create and display a simple widget. The following steps show how to layout a widget:

Step 1: First, you need to select a Layout widget.

Step 2: Next, create a visible widget.

Step 3: Then, add the visible widget to the layout widget.

Step 4: Finally, add the layout widget to the page where you want to display.

Types of Layout Widgets

We can categories the layout widget into two types:

1. Single Child Widget
2. Multiple Child Widget

Single Child Widgets

The single child layout widget is a type of widget, which can have only **one child widget** inside the parent layout widget. These widgets can also contain special layout functionality. The list of different types of single child widgets are:

Container, Padding, Center, Allign, ConstrainedBox, Baseline, FractinallySizedBox, IntrinsicHeight, IntrinsicWidth, LiimitedBox, OffStage, OverflowBox, SizedBox, SizedOverflowBox, Transform, CustomSingleChildLayout

Multiple Child widgets

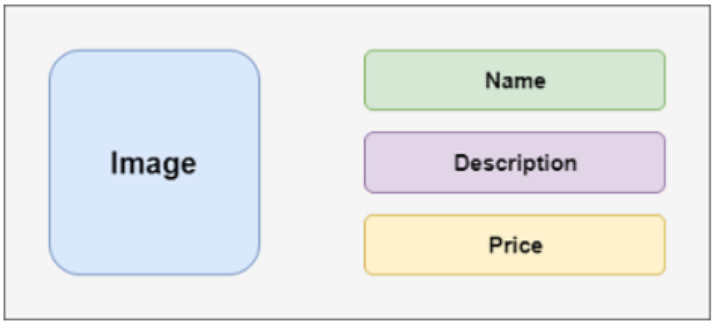
The multiple child widgets are a type of widget, which contains **more than one child widget**, and the layout of these widgets are **unique**.

Column, ListView, GridView, Expanded, Table, Flow, Stack.

Building Complex Layout

In this section, we are going to learn how you can create a complex user interface using both single and multiple child layout widgets. The layout framework allows you to create a complex user interface layout by nesting the rows and columns inside of rows and columns.

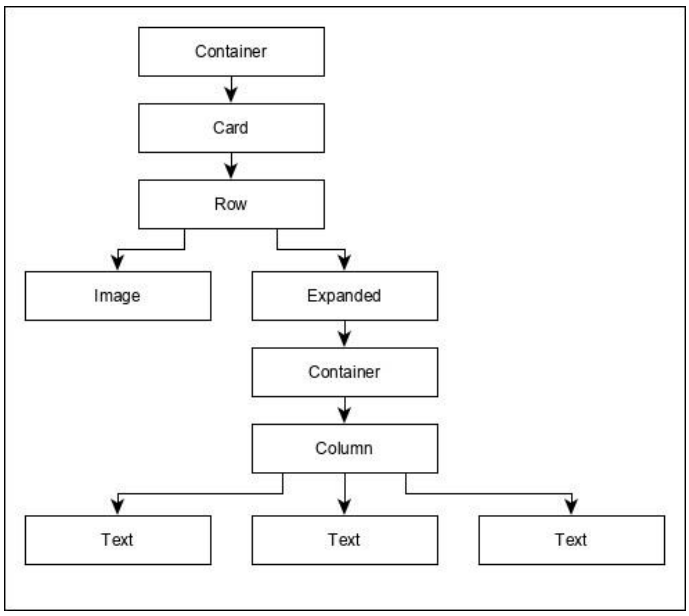
Let us see an example of a complex user interface by creating the **product list**. For this purpose, you need first to replace the code of **main.dart** file with the following code snippet.



- ProductBox has used four arguments as specified below −
  - name - Product name
  - description - Product description
  - price - Price of the product
  - image - Image of the product
- ProductBox uses seven build-in widgets as specified below −
  - Container
  - Expanded
  - Row
  - Column
  - Card
  - Text

- Image

- ProductBox is designed using the above mentioned widget. The arrangement or hierarchy of the widget is specified in the diagram shown below −



Conclusion: In this experiment we have designed a layout by using flutter various layout widgets.