| **Tutorial 1 :**  **Container:**   * class in flutter is a convenience widget that combines common painting, * positioning, and sizing of widgets. A Container class can be used to store one or more widgets and position them on the screen according to our convenience. Basically, a container is like a box to store contents * Containers with no children try to be as big as possible unless the incoming constraints are unbounded, in which case they try to be as small as possible. Containers with children size themselves to their children. The width, height, and constraints arguments to the constructor override this.   **Column Class:**   * A widget that displays its children in a vertical array. To cause a child to expand to fill the available vertical space, wrap the child in an Expanded widget. * The Column widget does not scroll (and in general it is considered an error to have more children in a Column than will fit in the available room). If you have a line of widgets and want them to be able to scroll if there is insufficient room, consider using a ListView.   Ex:    **Row Class:**   * A widget that displays its children in a horizontal array. To cause a child to expand to fill the available horizontal space, wrap the child in an Expanded widget. * The Row widget does not scroll (and in general it is considered an error to have more children in a Row than will fit in the available room). If you have a line of widgets and want them to be able to scroll if there is insufficient room, consider using a ListView.   Ex:      Main.dart :  import 'package:flutter/material.dart';  void main() {  runApp(const MyApp());  }  class MyApp extends StatelessWidget {  const MyApp({Key? key}) : super(key: key);  @override  Widget build(BuildContext context) {  return MaterialApp(  debugShowCheckedModeBanner: false,  home: Scaffold(  appBar: AppBar(  title: const Text("First App"),  centerTitle: true,  backgroundColor: Colors.blue[600],  ),  body: Row(  mainAxisAlignment: MainAxisAlignment.start,  crossAxisAlignment: CrossAxisAlignment.start,  children: [  Container(  color: Colors.deepOrange[800],  padding:  const EdgeInsets.symmetric(horizontal: 95, vertical: 25),  child: const Text("1"),  ),  Container(  color: Colors.limeAccent,  padding:  const EdgeInsets.symmetric(horizontal: 72, vertical: 25),  child: const Text("2"),  ),  Container(  color: Colors.greenAccent[700],  padding: const EdgeInsets.all(25),  child: const Text("3"),  )  ],  ),  ));  }  }    **Tutorial 2 :**    **Card:**   * A Material Design card: a panel with slightly rounded corners and an elevation shadow. A card is a sheet of Material used to represent some related information, for example an album, a geographical location, a meal, contact details, etc.   **BoxDecoration Class:**   * An immutable description of how to paint a box. The BoxDecoration class provides a variety of ways to draw a box. The box has a border, a body, and may cast a boxShadow. The shape of the box can be a circle or a rectangle. If it is a rectangle, then the borderRadius property controls the roundness of the corners. * The body of the box is painted in layers. The bottom-most layer is the color, which fills the box. Above that is the gradient, which also fills the box. Finally there is the image, the precise alignment of which is controlled by the DecorationImage class.   **SizedBox Class:**   * A box with a specified size. If either the width or height is null, this widget will try to size itself to match the child's size in that dimension. If the child's size depends on the size of its parent, the height and width must be provided. * If given a child, this widget forces it to have a specific width and/or height. These values will be ignored if this widget's parent does not permit them. * For example, this happens if the parent is the screen (forces the child to be the same size as the parent), or another SizedBox (forces its child to have a specific width and/or height). * This can be remedied by wrapping the child SizedBox in a widget that does permit it to * be any size up to the size of the parent, such as Center or Align.     Ex :    **Main.dart :**  **void main() => runApp(const MaterialApp(**  **debugShowCheckedModeBanner: false,**  **home: EchoList(),**  **));**  **class EchoList extends StatefulWidget {**  **const EchoList({super.key});**  **@override**  **State<EchoList> createState() => \_EchoListState();**  **}**  **class \_EchoListState extends State<EchoList> {**  **Widget quoteTemplate(quote) {**  **return Card(**  **margin: const EdgeInsets.fromLTRB(20.0, 30.0, 40.0, 10.0),**  **child: Padding(**  **padding: const EdgeInsets.all(12.0),**  **child: Column(**  **crossAxisAlignment: CrossAxisAlignment.end,**  **children: [**  **Text(**  **quote.text,**  **style: const TextStyle(**  **fontSize: 24,**  **color: Colors.indigo,**  **),**  **),**  **const SizedBox(height: 10),**  **Text(**  **"- ${quote.author}",**  **style: const TextStyle(**  **fontSize: 20,**  **color: Colors.indigoAccent,**  **),**  **),**  **],**  **),**  **),**  **);**  **}**  **List<Quote> quotes = [**  **Quote(**  **text: "Arise, awake, stop not till the goal is reached.",**  **author: "Swami Vivekananda"),**  **Quote(**  **text:**  **"Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.",**  **author: "Albert Einstein"),**  **Quote(**  **text:**  **"Live as if you were to die tomorrow. Learn as if you were to live forever.",**  **author: "Mahatma Gandhi"),**  **];**  **@override**  **Widget build(BuildContext context) {**  **return Scaffold(**  **appBar: AppBar(**  **backgroundColor: Colors.deepPurple,**  **title: const Text("Quote"),**  **centerTitle: true,**  **),**  **body: Column(**  **children: quotes.map((quote) => quoteTemplate(quote)).toList(),**  **),**  **);**  **}**  **}**  **After separation of all codes and delete quote functionality:**    **Quote.dart:**  **class Quote {**  **String text;**  **String author;**  **Quote({**  **required this.text,**  **required this.author,**  **});**  **}**  **Quote\_card.dart**  **import 'package:flutter/material.dart';**  **import 'package:flutter\_lab/qoute.dart';**  **class QuoteCard extends StatelessWidget {**  **final Quote quote;**  **final VoidCallback delete;**  **const QuoteCard({required this.quote, required this.delete});**  **@override**  **Widget build(BuildContext context) {**  **return Card(**  **margin: const EdgeInsets.fromLTRB(20.0, 30.0, 40.0, 10.0),**  **child: Padding(**  **padding: const EdgeInsets.all(12.0),**  **child: Column(**  **crossAxisAlignment: CrossAxisAlignment.end,**  **children: [**  **Text(**  **quote.text,**  **style: const TextStyle(**  **fontSize: 24,**  **color: Colors.indigo,**  **),**  **),**  **const SizedBox(height: 10),**  **Text(**  **"- ${quote.author}",**  **style: const TextStyle(**  **fontSize: 20,**  **color: Colors.indigoAccent,**  **letterSpacing: 2,**  **fontWeight: FontWeight.w500),**  **),**  **const SizedBox(**  **height: 10,**  **),**  **TextButton.icon(**  **onPressed: delete,**  **icon: const Icon(**  **Icons.delete,**  **color: Colors.red,**  **),**  **label: const Text(**  **"Delete Quote",**  **style: TextStyle(color: Colors.red, fontSize: 18),**  **),**  **)**  **],**  **),**  **),**  **);**  **}**  **}**  **Main.dart :**  **void main() => runApp(const MaterialApp(**  **debugShowCheckedModeBanner: false,**  **home: EchoList(),**  **));**  **class EchoList extends StatefulWidget {**  **const EchoList({super.key});**  **@override**  **State<EchoList> createState() => \_EchoListState();**  **}**  **class \_EchoListState extends State<EchoList> {**  **List<Quote> quotes = [**  **Quote(**  **text: "Arise, awake, stop not till the goal is reached.",**  **author: "Swami Vivekananda"),**  **Quote(**  **text:**  **"Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.",**  **author: "Albert Einstein"),**  **Quote(**  **text:**  **"Live as if you were to die tomorrow. Learn as if you were to live forever.",**  **author: "Mahatma Gandhi"),**  **];**  **@override**  **Widget build(BuildContext context) {**  **return Scaffold(**  **appBar: AppBar(**  **backgroundColor: Colors.deepPurple,**  **title: const Text(**  **"Quote",**  **style: TextStyle(letterSpacing: 4),**  **),**  **centerTitle: true,**  **),**  **body: Column(**  **children: quotes**  **.map((quote) => QuoteCard(**  **quote: quote,**  **delete: () {**  **setState(() {**  **quotes.remove(quote);**  **});**  **}))**  **.toList(),**  **),**  **);**  **}**  **}**  **Stateful Widget :**   * The widgets whose state can be altered once they are built are called stateful Widgets. * These states are mutable and can be changed multiple times in their lifetime. This simply means the state of an app can change multiple times with different sets of variables, inputs, data.   **Ex: Profile card with increment and decrement age with button.**    Main.dart  void main() => runApp(MaterialApp(  debugShowCheckedModeBanner: false,  home: FinalTest1(),  ));  class FinalTest1 extends StatefulWidget {  // const FinalTest1({super.key});  @override  State<FinalTest1> createState() => \_FinalTest1State();  }  class \_FinalTest1State extends State<FinalTest1> {  num age = 18.0;  @override  Widget build(BuildContext context) {  return Scaffold(  backgroundColor: Colors.blueAccent[50],  appBar: AppBar(  title: const Text('Profile'),  centerTitle: true,  backgroundColor: Colors.lightBlue[600],  elevation: 0.0,  ),  body: Padding(  padding: const EdgeInsets.fromLTRB(30, 40, 30, 0),  child: Column(  crossAxisAlignment: CrossAxisAlignment.start,  children: [  const Center(  child: CircleAvatar(  radius: 50,  backgroundImage: AssetImage("assets/images/MS-DHONI.jpg"),  ),  ),  const SizedBox(  height: 10,  ),  const Text(  "NAME :",  style: TextStyle(letterSpacing: 2),  ),  const Text(  "M.S. DHONI",  style: TextStyle(  letterSpacing: 2,  color: Colors.blue,  fontSize: 20,  fontWeight: FontWeight.bold),  ),  const SizedBox(  height: 10,  ),  const Text(  "AGE :",  style: TextStyle(letterSpacing: 2),  ),  Text(  "$age",  style: const TextStyle(  color: Colors.blue,  fontSize: 20,  fontWeight: FontWeight.bold),  ),  const SizedBox(height: 50),  Row(  children: const [  Icon(  Icons.email\_outlined,  color: Colors.blue,  size: 30,  ),  SizedBox(  width: 12,  ),  Text(  "msdhoni@gmail.com",  style: TextStyle(  color: Colors.brown, fontSize: 20, letterSpacing: 1.5),  )  ],  )  ],  ),  ),  floatingActionButton: Row(  mainAxisAlignment: MainAxisAlignment.spaceAround,  children: [  FloatingActionButton(  onPressed: () {  setState(() {  age += 1;  });  },  backgroundColor: Colors.blue,  child: const Icon(Icons.add),  ),  FloatingActionButton(  onPressed: () {  setState(() {  age -= 1;  });  },  backgroundColor: Colors.blue,  child: const Icon(Icons.remove)),  ],  ));  }  } |
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