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ICT Department

របៀបប្រើ Text, Icon, Image, Container, TextField Event Listener និង StatefulWidget

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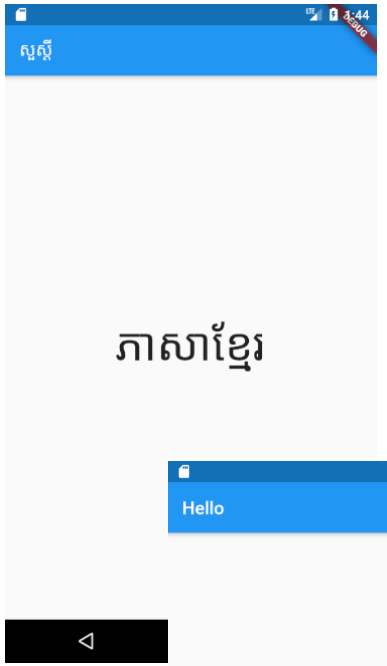
Text

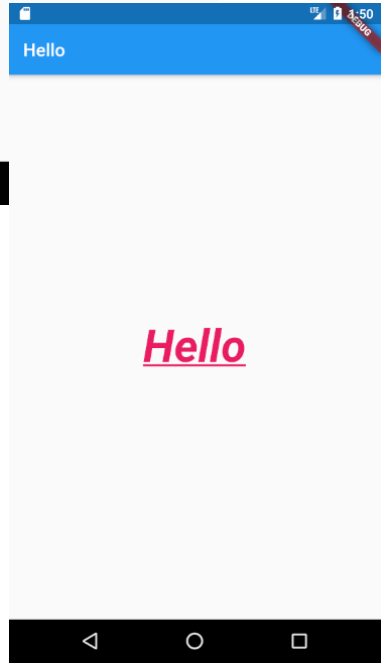
- Text សំរាប់បង្ហាញអក្សរ។ វាអាច support អក្សរខ្មែរ Unicode ផងដែរ។

```
return Scaffold(
      appBar: AppBar(title: Text("សួស្តី"),),
      body: Container(
        alignment: Alignment.center,
        child: Text("ភាសាខ្មែរ", style: TextStyle(fontSize: 50.0),),
      ),
    );
```



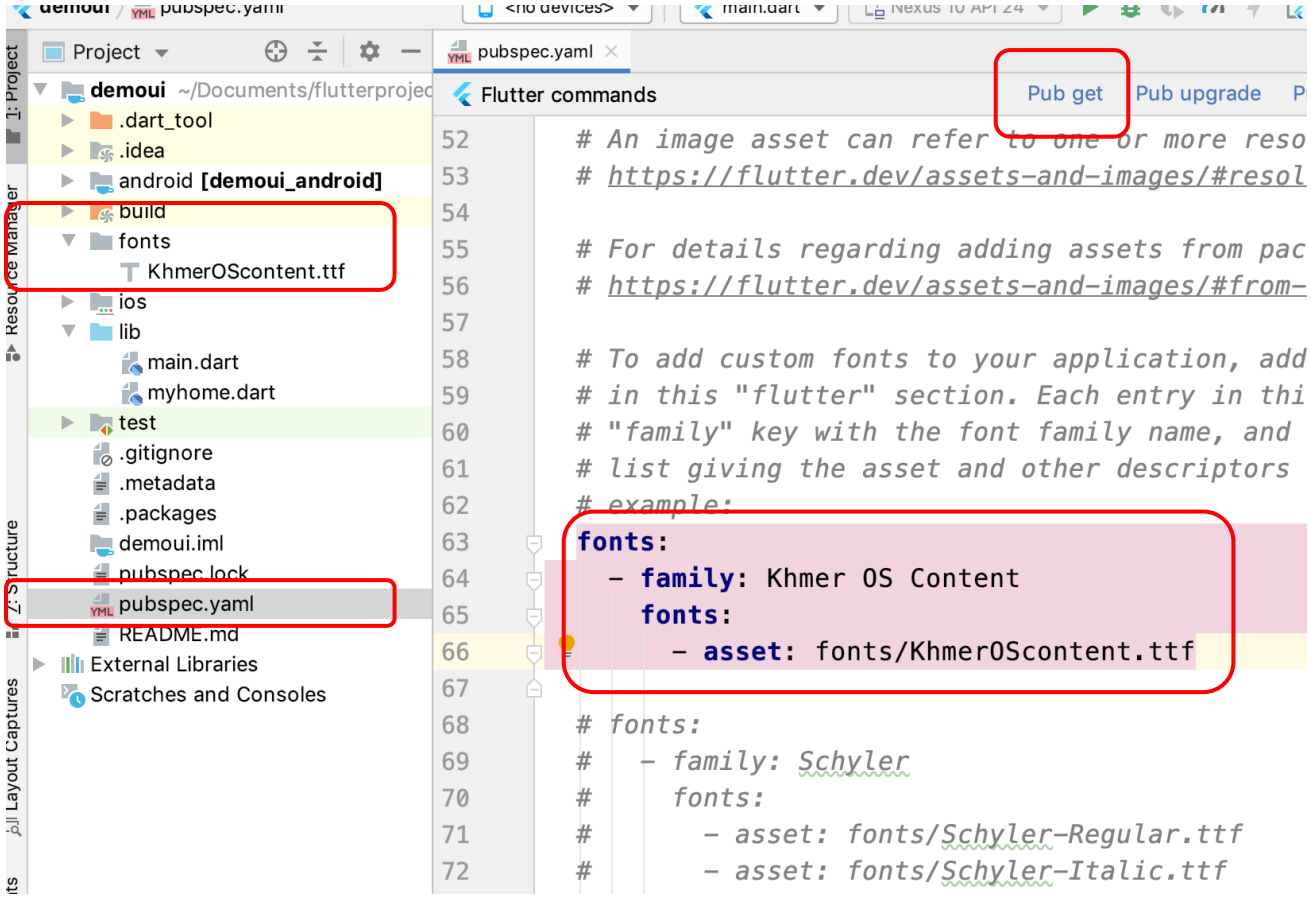
- style property:

```
Text("Hello",
     style: TextStyle(
            fontSize: 50.0,
            color: Colors.blue,
            fontWeight: FontWeight.bold,
            fontStyle: FontStyle.italic,
            decoration: TextDecoration.underline,
          ),
        ),
```



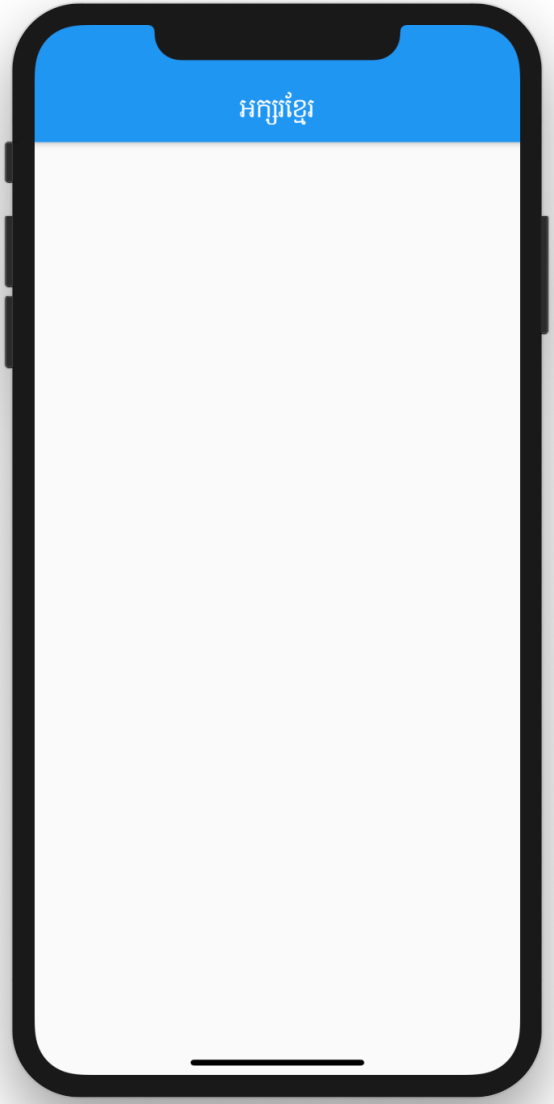
របៀបដាក់ Font ខ្មែរ

1. យក font ណាមួយយកមកដាក់ក្នុង folder "fonts"
2. សរសេរកូដបន្ថែមក្នុង pubspec.yaml -> ចុច Pub get



3. បន្ទាប់មកយើងហៅប្រើតាម fontFamily:

```dart
@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text(
        "អក្សរខ្មែរ",
        style: TextStyle(fontFamily: "Khmer OS Content"),
      ),
    ),
  );
}
```



iPhone 11 Pro Max — 13.2.2

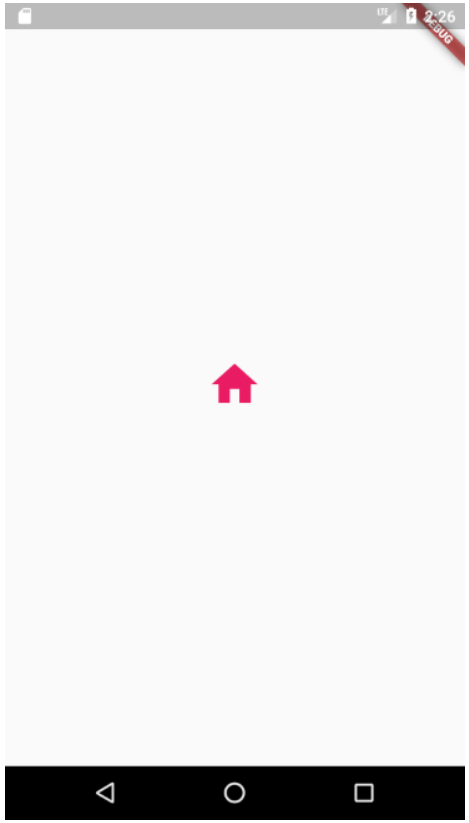
Icon

- Flutter ផ្តល់នូវរូបភាព material icon ស្អាតៗរួចជាស្រេច។

```
Icon(Icons.home, size: 50.0, color: Colors.pink,),
```

- បើយើងចង់ចុចលើ button នោះ យើងអាចប្រើ IconButton widget បាន។

```
IconButton(
   icon: Icon(Icons.home, size: 50.0, color: Colors.pink,),
   onPressed: (){
     print("icon pressed");
   },
),
```



Image

- Image សំរាប់បង្ហាញរូបភាពដែលយកចេញពី network, asset, និង file។
- fit property:
  - fit: BoxFit.contain

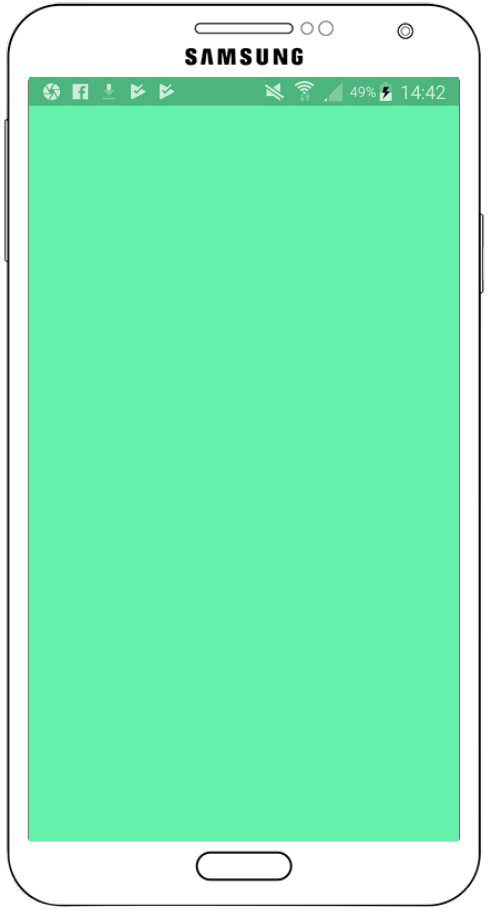
```
Container(
          color: Colors.orange,
          width: 200.0,
          height: 200.0,
          child: Image.network(
            "http://bit.ly/2IGluzb",
            fit: BoxFit.contain,
          ),
        ),
```

  - fit: BoxFit.cover

```
Container(
          color: Colors.orange,
          width: 200.0,
          height: 200.0,
          child: Image.network(
            "http://bit.ly/2IGluzb",
            fit: BoxFit.cover,
          ),
        ),
```

Container

container គឺជា widget ដែលងាយស្រួលប្រើ និងមានប្រយោជន៍ជាងគេបំផុត វាអនុញ្ញាតិចាក់ពណ៌ កំណត់ទំហំ ទីតាំង ជាដើមបានយ៉ាងងាយ។ container អាចដើរតួរជាអ្នកបង្ហាញរូបរាងដោយខ្លួនឯង ឬក៏អាចប្រើជាមេរបស់ widget កូនដទៃណាទៀត។



- height & width
- color
- alignment
- padding
- margin
- decoration
- transform
- child

Color Properties | Container

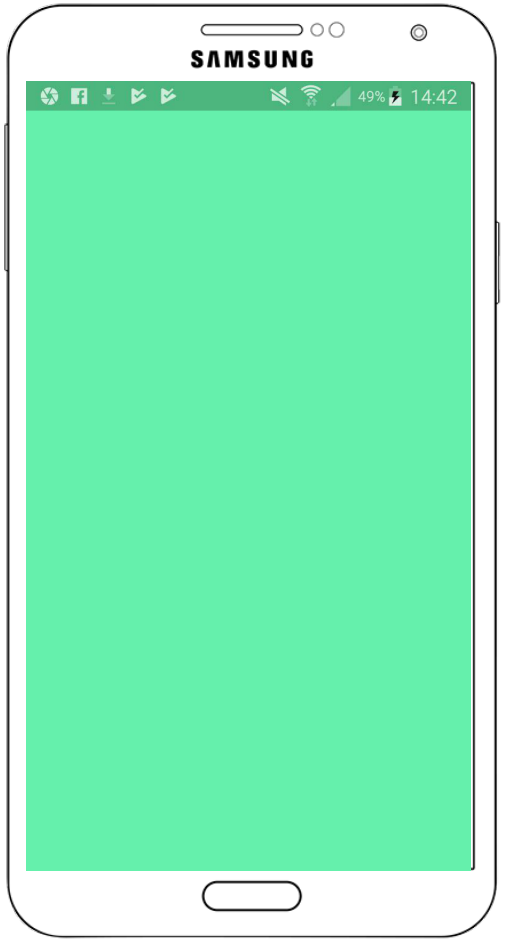
```
color: Colors.green
```

```
color: Colors.green[100]
```

```
color: Colors.green.withOpacity(0.5),
```

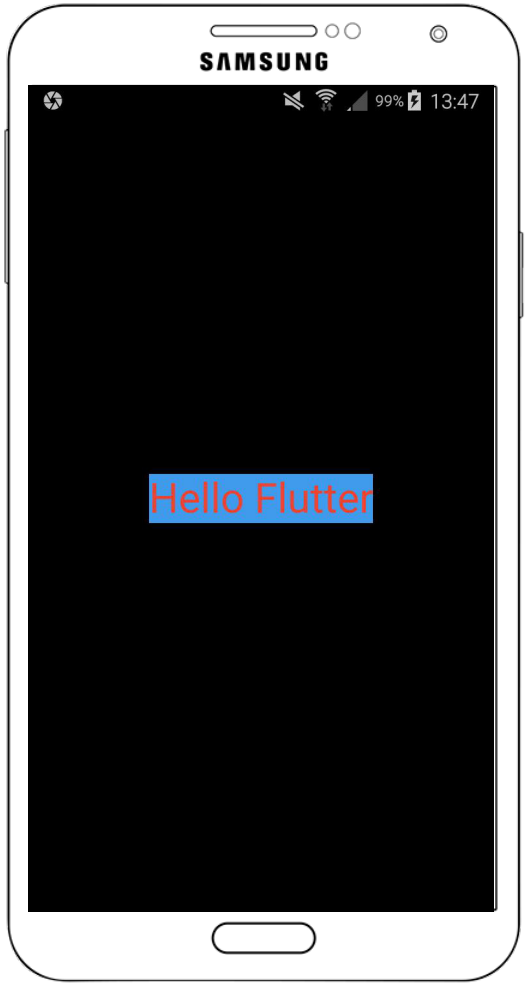
```
color: Color.fromARGB(100, 255, 10, 255)
```

```
color: Color.fromRGBO(255, 0, 128, 0.5),
```



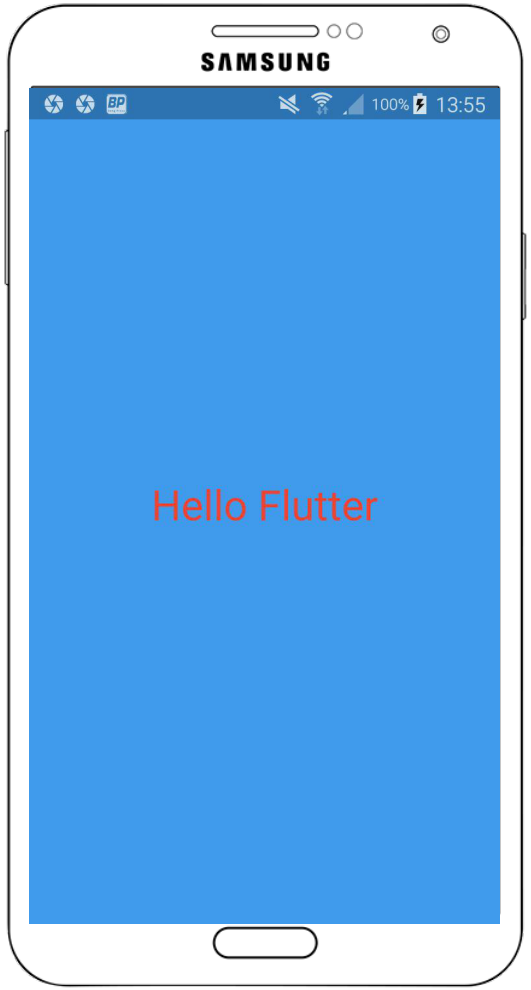
Child Properties | Container

```
Container(
    color: Color.fromRGBO(66, 155, 243, 1.0),
    child:  Text(
      "Hello Flutter",
       style:  TextStyle(color:Colors.red,fontSize: 32.0),
    ),
  ),
```



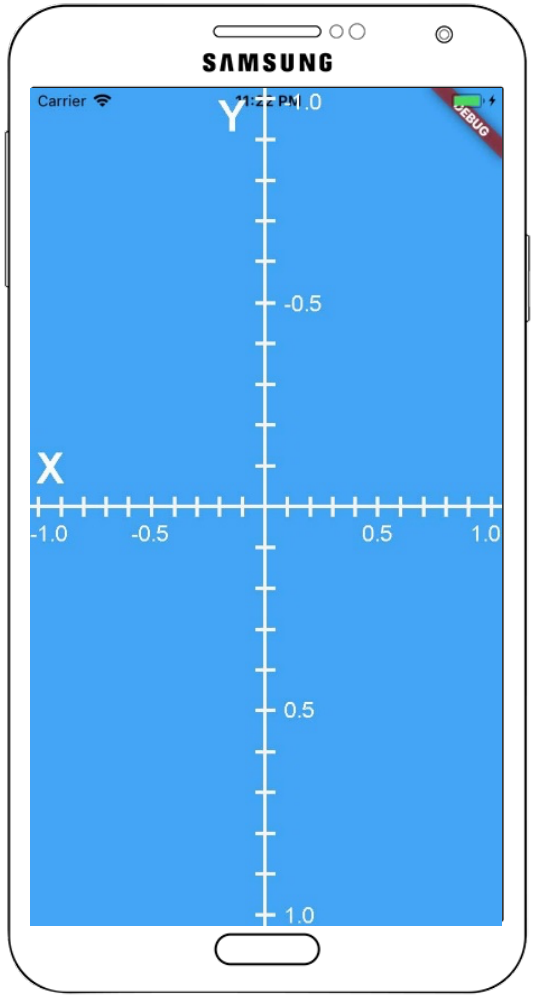
Alignment Properties | Container

```
Container(
     color: Color.fromRGBO(66, 155, 243, 1.0),
     child: Text(
       "Hello Flutter",
       style: TextStyle(
         color:Colors.red, fontSize: 32.0),
     ),
     alignment: Alignment.center,
   ),
```



Alignment Properties | Container

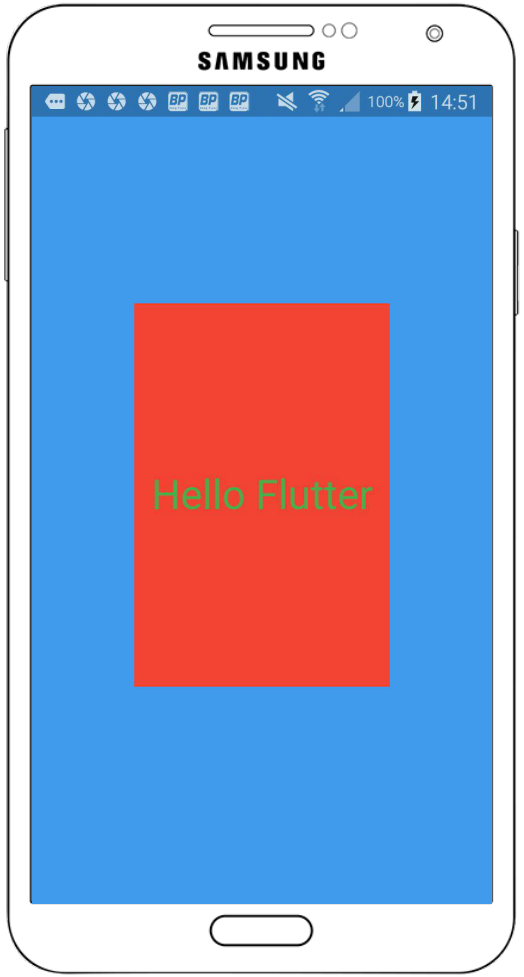
- bottomCenter = (0.0, 1.0)
- bottomLeft = (-1.0, 1.0)
- bottomRight = (1.0, 1.0)
- center = (0.0, 0.0)
- centerLeft = (0.0, 1.0)
- centerRight = (0.0, 1.0)
- topCenter = (0.0, 1.0)
- topLeft = (0.0, 1.0)
- topRight = (0.0, 1.0)



Constraints Property | Container

constraints គឺសំរាប់កំណត់ទំហំ ធំបំផុតប៉ុន្មាន និងតូចបំផុតប៉ុន្មាន។ constrains មានប្រយោជន៍សំរាប់អោយ App យើងមានទំហំជាលក្ខណៈ responsive ទៅតាមទំហំ screen របស់ device។

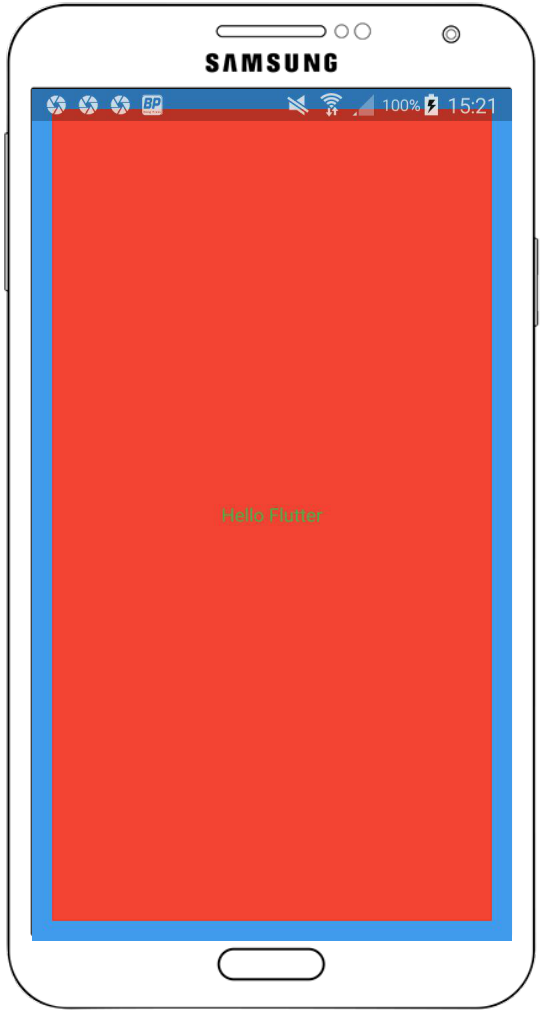
```
constraints: BoxConstraints(
          maxHeight: 300.0,
          maxWidth: 200.0,
          minWidth: 150.0,
          minHeight: 150.0
      ),
```



Margin Property | Container

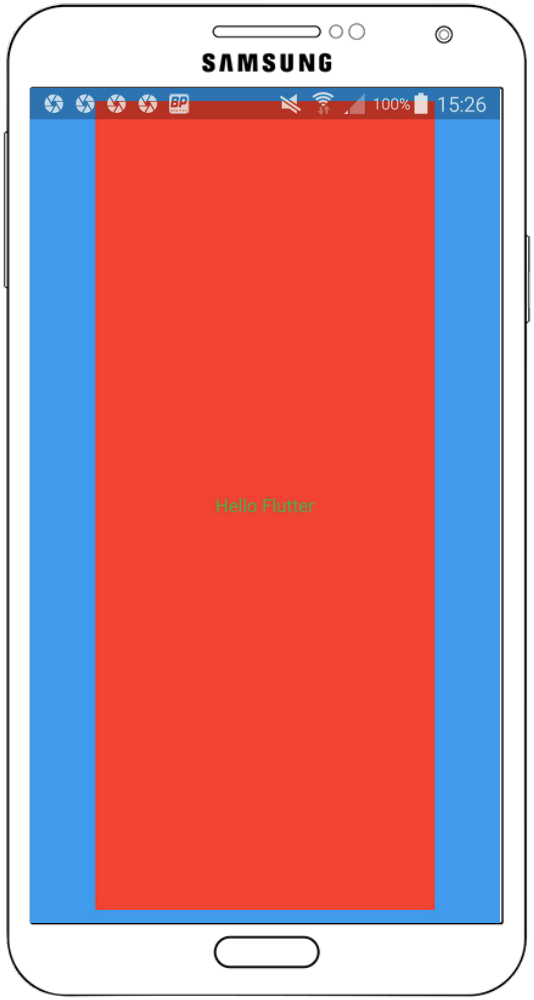
margin សំរាប់កំណត់ចន្លោះទទេរជុំវិញ container

```
margin:  EdgeInsets.all(15.0),
```



Margin Property | Container

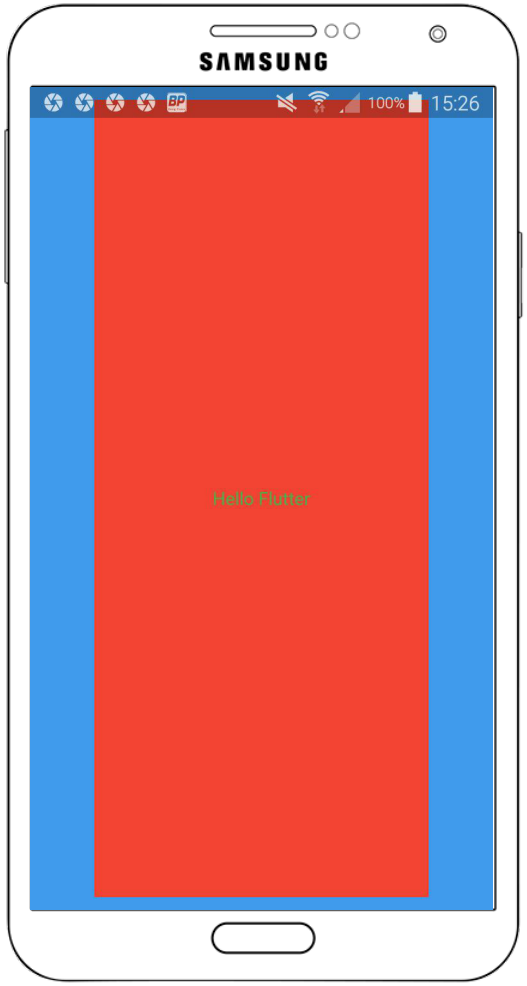
```
margin:  EdgeInsets.symmetric(
            vertical: 10.0,
            horizontal: 50.0
         ),
```



Margin Property | Container

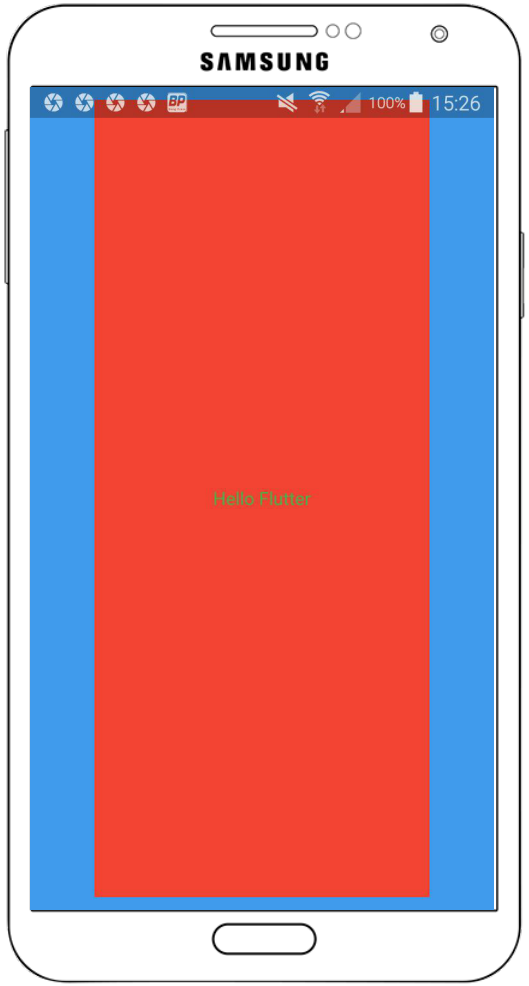
LTRB មាននំយថា Left, Top, Right, Bottom

```
margin:  EdgeInsets.fromLTRB(
             20.0,
             30.0,
             40.0,
             50.0),
```



Margin Property | Container

```
margin:  EdgeInsets.only(
        left: 20.0,
        bottom: 40.0,
        right: 40.0,
        top: 50.0,
        ),
```



Padding Property | Container

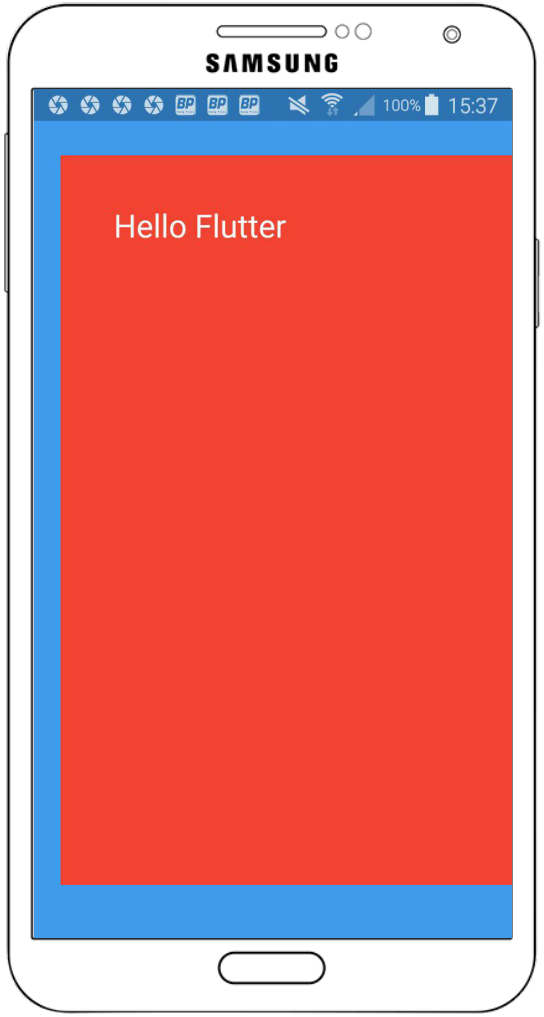
padding សំរាប់ដាក់ចន្លោះពីគែមរបស់ container ចូលទៅខាងក្នុង container។ វាផ្ទុយពី margin ដែល margin គឺចន្លោះខាងក្រៅ container រីឯ padding គឺដាក់ចន្លោះខាងក្នុង container។

```
padding:  EdgeInsets.all(40.0),
```

```
padding:  EdgeInsets.symmetric(
            vertical: 10.0,
            horizontal: 50.0
          ),
```

```
padding:  EdgeInsets.fromLTRB(20.0, 30.0, 40.0, 50.0),
```

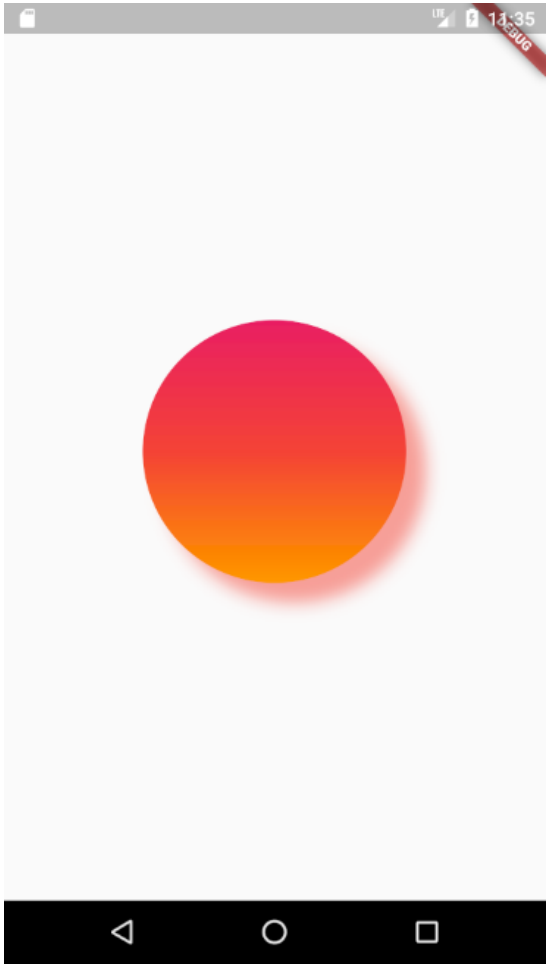
```
padding:  EdgeInsets.only(
          left: 20.0,
          bottom: 40.0,
          right: 40.0,
          top: 50.0,
          ),
```



BoxDecoration | Decoration | Container

- decoration គឺសំរាប់រចនា container អាចដាក់ពណ៌លាយស្រមោល ឬ កំណាត់រូបរាង container អោយទៅជាមូលក៏បាន។

```
child: Container(
          width: 200.0, height: 200.0,
          decoration: BoxDecoration(
            gradient: LinearGradient(
              begin: Alignment.topCenter,
              end: Alignment.bottomCenter,
              colors: [Colors.pink, Colors.red, Colors.orange,],
            ),
            color: Colors.deepPurple,
            shape: BoxShape.circle,
            boxShadow: [BoxShadow(
                  color: Colors.red.withOpacity(0.5),
                  offset: Offset(15.0, 15.0),
                  blurRadius: 10.0),
            ],),),),),
```



Transform Property | Container

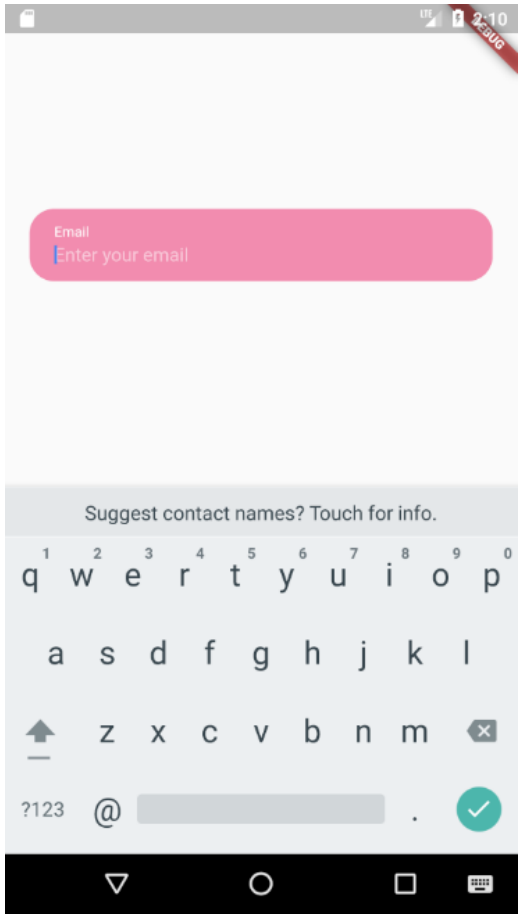
- transform សំរាប់ផ្លាស់ប្តូរទំរង់ ឬបង្វិល container

```
body: Container(
        alignment: Alignment.center,
        child: Container(
          width: 200.0,
          height: 200.0,
          transform: Matrix4.rotationZ(0.2),
          decoration: BoxDecoration(
            color: Colors.deepPurple,
            borderRadius: BorderRadius.only(
                topLeft: Radius.circular(30.0),
                bottomRight: Radius.circular(30.0)),
          ),
        ),
      ),
```

TextField

- TextField សំរាប់អោយយើងអាចវាយអក្សរបញ្ចូលបាន។ ដើម្បីទទួលទិន្នន័យ ពី TextField ត្រូវប្រើ TextEditingController។
- properties:
  - obscureText: true សំរាប់ដាក់ password
  - keyboardType: សំរាប់ដាក់ keyboard
  - decoration: សំរាប់តុបតែងអក្សរដូចជា label, hint, border ។ល។

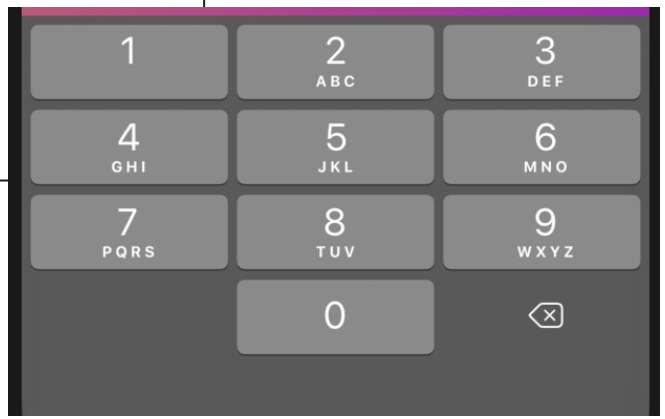
```
Container(
  padding: EdgeInsets.only(left: 20.0, right: 20.0),
  decoration: BoxDecoration(
    borderRadius: BorderRadius.circular(20.0),
    color: Colors.pink.withOpacity(0.5),
  ),
  child: TextField(
    keyboardType: TextInputType.emailAddress,
    decoration: InputDecoration(
       labelStyle: TextStyle(fontSize: 15.0, color: Colors.white),
       hintText: "Enter your email",
       hintStyle: TextStyle(fontSize: 15.0, color: Colors.white54),
       labelText: "Email",
       border: InputBorder.none,
    ),
    obscureText: false,
  ),
),
```



ដោះស្រាយបញ្ហាTextField ជាមួយ Number Keyboard នៅលើ iOS

- សំរាប់ Number Keyboard នៅលើ iOS គឺមិនមានប៊ូតុងបិទដូច Android ទេ។ ចឹង យើងត្រូវសរសេរកូដបន្ថែមអោយបិទពេលចុចលើផ្ទៃ App:

```
@override
Widget build(BuildContext context) {
  return Scaffold(
    key: _scaffoldKey,
    body: InkWell(
      onTap: () {
        FocusScope.of(context).requestFocus(FocusNode());
      },
      child: _buildBody,
    ),
  );
}
```



Event Listener

- សំរាប់ event listener ក្នុង dart គឺងាយស្រួលប្រើ ព្រោះវាប្រើទំរង closure។
- យើងអាចប្រើ Widget មួយចំនួនដូចជា៖ InkWell, RaisedButton, FlatButton, MaterialButton និង GestureDetector សំរាប់ដាក់អោយ Widget ណាមួយអាច click បាន។

```
InkWell(
  onLongPress: (){
    print("long pressed");
  },
  onDoubleTap: (){
    print("double tapped");
  },
  onTap: (){
    print("tapped");
  },
  child: Container(
    child: Image.network(
      "http://bit.ly/2IGluzb",
      fit: BoxFit.contain,
    ),
  ),
),
```

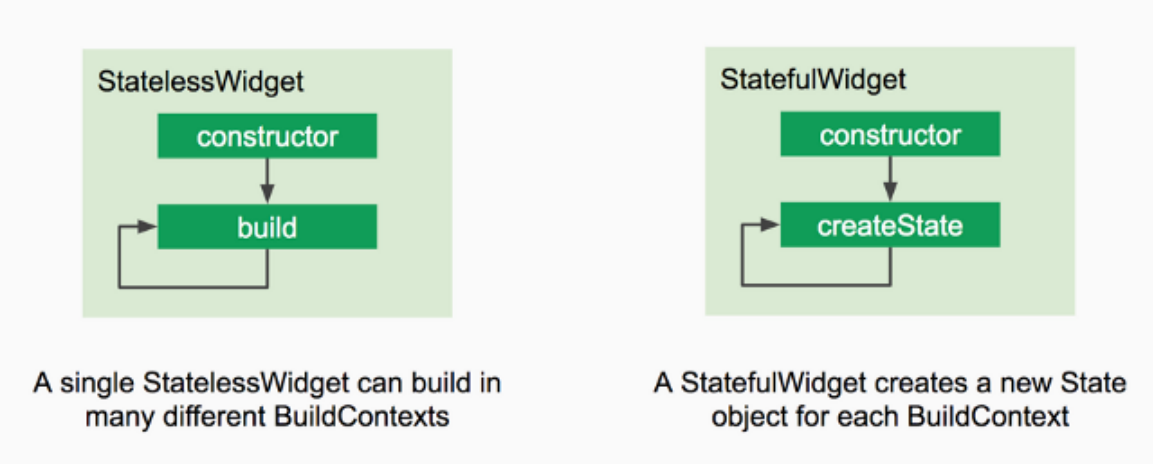
```
FlatButton(
  onPressed: (){
    print("pressed");
  },
  child: Container(
    child: Image.network(
      "http://bit.ly/2IGluzb",
      fit: BoxFit.contain,
    ),
  ),
),
```

```
RaisedButton(
  onPressed: (){
    print("pressed");
  },
  child: Container(
    child: Image.network(
      "http://bit.ly/2IGluzb",
      fit: BoxFit.contain,
    ),
  ),
),
```

```
GestureDetector(
  onTap: (){},
  onTapDown: (details){
      //code
  },
  onLongPress: (){
      //code
  },
  onVerticalDragStart: (details){
      //code
  },
  child: Container(
    child: Image.network(
      "http://bit.ly/2IGluzb",
    ),
  ),
),
```

StatefulWidget

- គ្រប់ផ្នែកទាំងអស់នៅក្នុង UI នៃ Flutter គឺសុទ្ធតែជា Widget។ តែ Flutter បានបែងចែក Widget ជា២ប្រភេទគឺ StatelessWidget (Widget ដែលគ្មាន State) និង StatefulWidget (Widget ដែលពោរពេញទៅដោយ State)
- បើនិយាយអោយស្រួលស្តាប់ បើយើងចង់ចុចអ្វីមួយ ហើយវាផ្លាស់ប្តូររូបរាង (UI) គឺយើងត្រូវប្រើ StatefulWidget។



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នៅក្នុង StatefulWidget គឺមាន class ២គឺ៖

1- class គោលដៅលជាកូនរបស់ StatefulWidget

2- និង class មួយទៀតជាកូនរបស់ State

```dart
import 'package:flutter/material.dart';

class MyHome extends StatefulWidget {
  @override
  _MyHomeState createState() => _MyHomeState();
}

class _MyHomeState extends State<MyHome> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(...),
      body: Container(),
    );
  }

```

ហើយរាល់ពេលដែលយើងចង់កែរអ្វីមួយ គឺយើងគ្រាន់ប្តូរតំលៃ variable នៅក្នុង method ពិសេសមួយឈ្មោះថា setState() ជាការស្រេចនៃ

```dart
import 'package:flutter/material.dart';

class MyHome extends StatefulWidget {
  @override
  _MyHomeState createState() => _MyHomeState();
}

class _MyHomeState extends State<MyHome> {

  String text = "អក្សរខ្មែរ";

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text(text, style: TextStyle(fontFamily: "Khmer OS Content"),
        ),
        actions: <Widget>[
          IconButton(
            onPressed: (){
              setState(() {
                text = "អក្សរខ្មែរស្អាតណាស់";
              });
            },
          ),
        ],
      ),
      body: Container(),
    );
  }
```