

Flutter 2

Details On Widgets



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Details on Widgets

Scaffold Widget

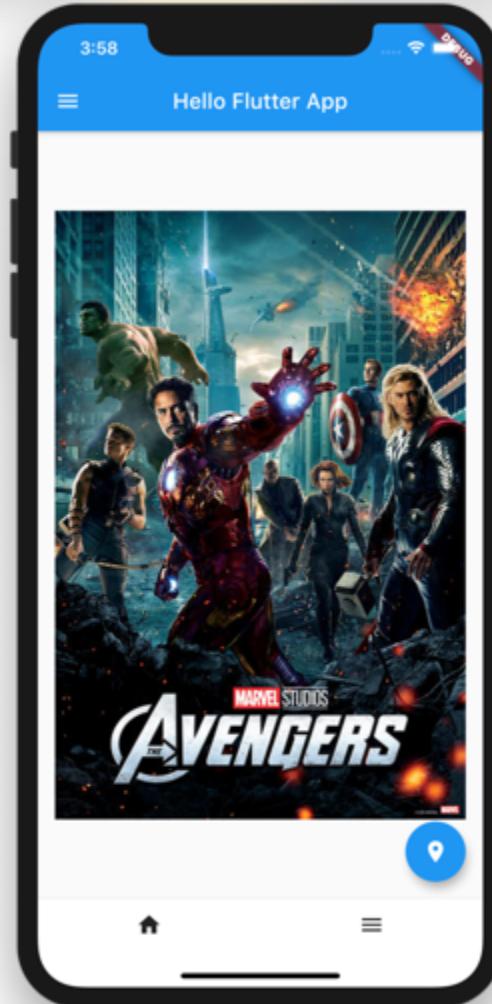
- Scaffold គឺជា class មួយដែលផ្តល់ APIs សំរាប់បង្ហាញ

- appBar
- drawer
- bottomNavigationBar
- floatingActionButton
- body

```
class MyApp extends StatelessWidget {

  final img = "https://terrigen-cdn-dev.marvel.com/content/prod/1x/theavengers_lob_crd_03.jpg";

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        appBar: AppBar(title: Text("Hello Flutter App")),
        drawer: Drawer(),
        floatingActionButton: FloatingActionButton(
          onPressed: (){},
          child: Icon(Icons.place),
        ),
        body: Container(
          alignment: Alignment.center,
          child: Image.network(img),
        ),
        bottomNavigationBar: BottomAppBar(
          child: Row(
            mainAxisAlignment: MainAxisAlignment.spaceAround,
            children: <Widget>[
              IconButton(icon: Icon(Icons.home), onPressed: (){}),
              IconButton(icon: Icon(Icons.menu), onPressed: (){}),
            ],
          ),
        ),
      );
  }
}
```

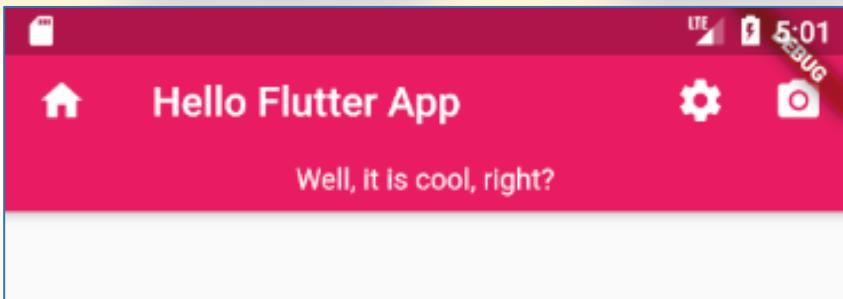


iPhone 11 Pro Max — 13.2.2

AppBar | Scaffold Widget

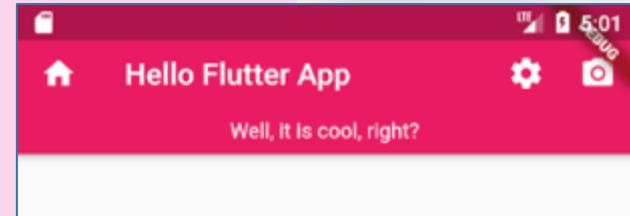
- Property សំខាន់ៗ របស់ appBar:

- ❖ **leading**
- ❖ **title**
- ❖ **actions**
- ❖ **bottoms**



AppBar | Scaffold Widget

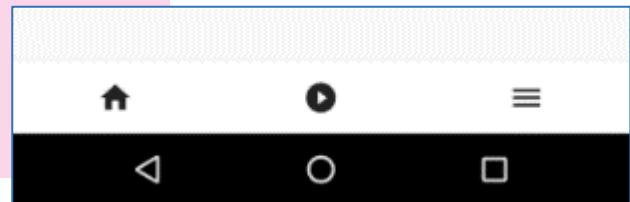
```
appBar: AppBar(  
    backgroundColor: Colors.pink,  
    leading: IconButton(icon: Icon(Icons.home),  
        onPressed: (){},),  
    title: Text("Hello Flutter App"),  
    actions: <Widget>[  
        IconButton(icon: Icon(Icons.settings), onPressed: (){},),  
        IconButton(icon: Icon(Icons.camera_alt), onPressed: (){},),  
    ],  
    bottom: PreferredSize(  
        preferredSize: Size.fromHeight(20.0),  
        child: Padding(  
            padding: const EdgeInsets.all(8.0),  
            child: Text("Well, it is cool, right?",  
                style: TextStyle(color: Colors.white),  
            ),  
        ),  
    ),  
),
```



BottomAppBar | Scaffold Widget

- bottomNavigationBar ត្រូវ BottomAppBar សំរាប់បង្ហាញ menu នៅផ្លូវខាងក្រោម។

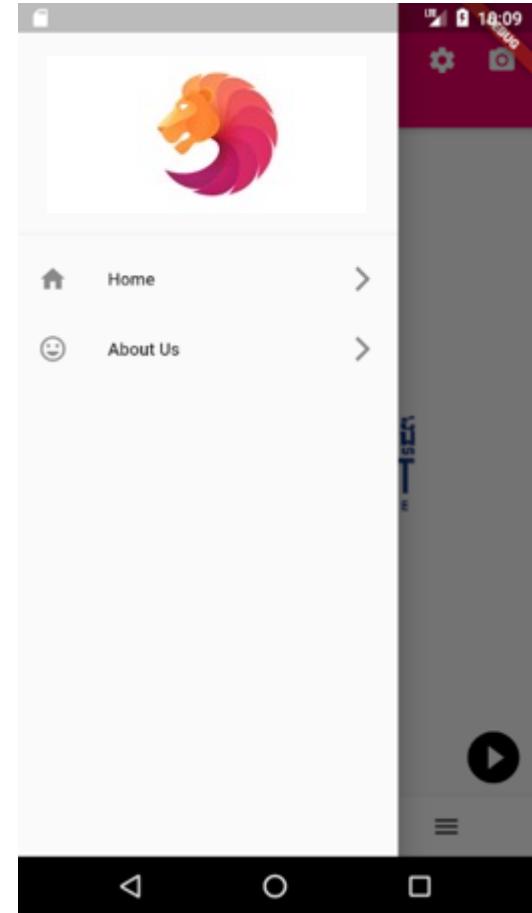
```
bottomNavigationBar: BottomAppBar(  
    child: Row(  
        mainAxisAlignment: MainAxisAlignment.spaceAround,  
        children: <Widget>[  
            IconButton(icon: Icon(Icons.home),  
            onPressed: (){},),  
            IconButton(icon: Icon(Icons.play_circle_filled),  
            onPressed: (){},),  
            IconButton(icon: Icon(Icons.menu),  
            onPressed: (){},),  
        ],  
    ),  
,  
,
```



Drawer | Scaffold Widget

- drawer: (បកត្រូវ ចំណាំ) រាជធានី menu ដែលយើងទាញចេញពី ខាងឆ្វេង ប្រើបាយស្ថាននៃ App ។

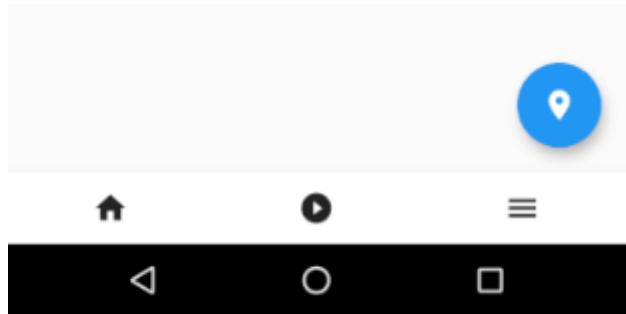
```
drawer: Drawer(  
    child: ListView(  
        children: <Widget>[  
            DrawerHeader(  
                child: Image.network("http://bit.ly/2IGluzb"),  
            ),  
            ListTile(  
                leading: Icon(Icons.home),  
                title: Text("Home"),  
                trailing: Icon(Icons.arrow_forward_ios),  
            ),  
            ListTile(  
                leading: Icon(Icons.insert_emoticon),  
                title: Text("About Us"),  
                trailing: Icon(Icons.arrow_forward_ios),  
            ),  
        ],  
    ),  
,
```



FloatingActionButton | Scaffold Widget

- floatingActionButton គឺជា button មួយដែលវាមានទំនើងជាលក្ខណៈ button អំណែកតាមលក្ខណៈ App

```
floatingActionButton: FloatingActionButton(  
    onPressed: (){},  
    child: Icon(Icons.place),  
,
```



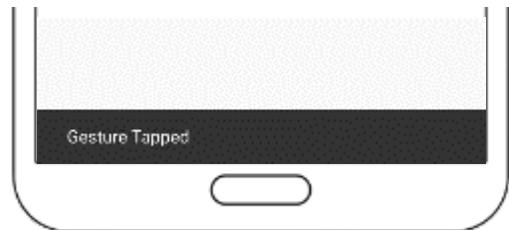
SnackBar Widget

SnackBar គឺជាឌាម្បី Message ទៅនឹងបច្ចុប្បន្នរបស់ Material Design គឺវាជូសចេញពីផ្ទៃការងារ ក្រោមនៃ App រយៈមួយភ្លើតហើយការតាត់ទេវិញ។

Property:

- Content
- Action
- BackgroundColor
- Duration

```
SnackBar(  
    content: Text("Gesture Tapped"),  
);
```

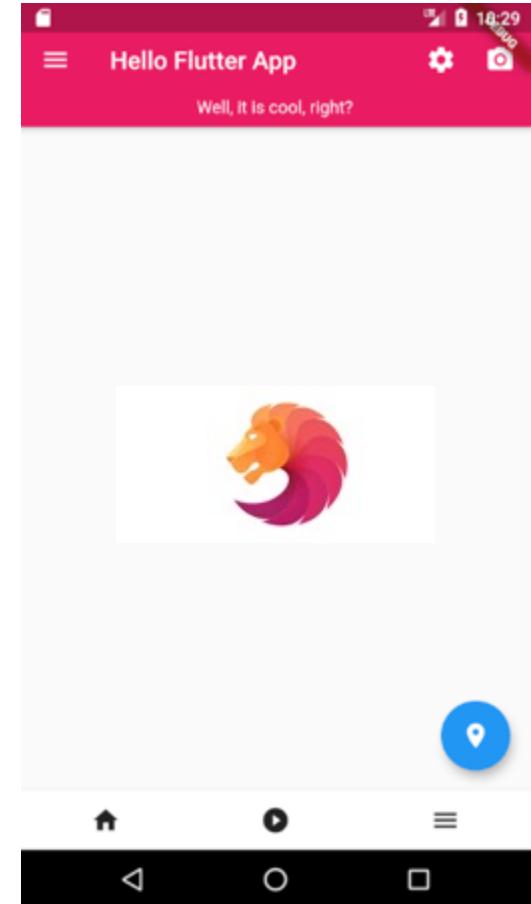


```
var _scaffoldKey = GlobalKey<ScaffoldState>();  
  
_showSnackBar(String txt) {  
    SnackBar snackBar = SnackBar(content: Text(txt));  
    _scaffoldKey.currentState.showSnackBar(snackBar);  
}  
  
@override  
Widget build(BuildContext context) {  
    return Scaffold(  
        key: _scaffoldKey,  
        body: _buildBody,  
    );  
}
```

body | Scaffold Widget

- body property: គឺស្ថិតចំកណ្តាលនៃ App ។ វាអនុញ្ញាតិយោយយើងប្រើ Widget អីក៏បាន។

```
body: Container(  
    alignment: Alignment.center,  
    child: Image.network("http://bit.ly/2IGluzb")),
```



**Text, Icon, Image, Container, TextField,
Event Listener ແລະ StatefulWidget**

Text

- Text សំរាប់បង្ហាញអក្សរាយ វាគារច support អក្សរខ្លួន Unicode ដឹងដោយ

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



ភាសាខ្មែរ

- style property:

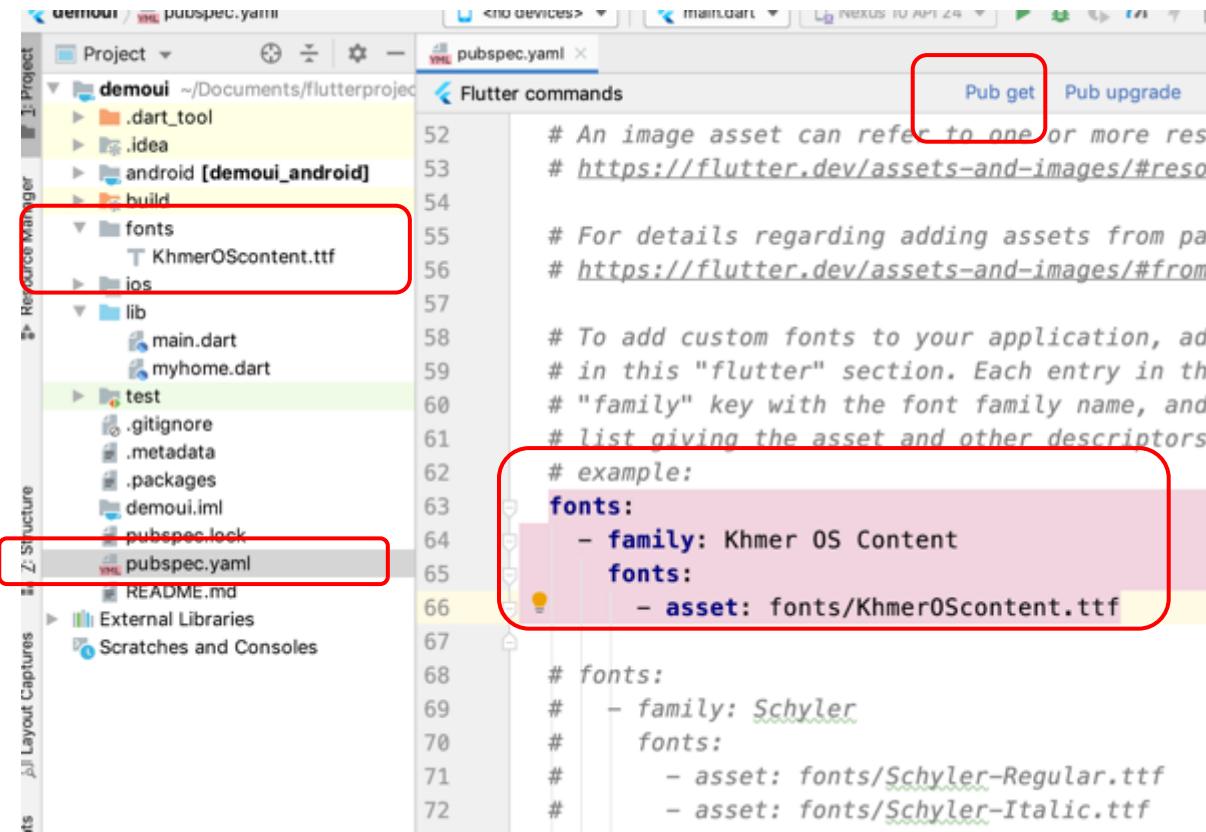
```
Text("Hello",  
    style: TextStyle(  
        fontSize: 50.0,  
        color: Colors.blue,  
        fontWeight: FontWeight.bold,  
        fontStyle: FontStyle.italic,  
        decoration: TextDecoration.underline,  
    ),  
,);
```



Hello

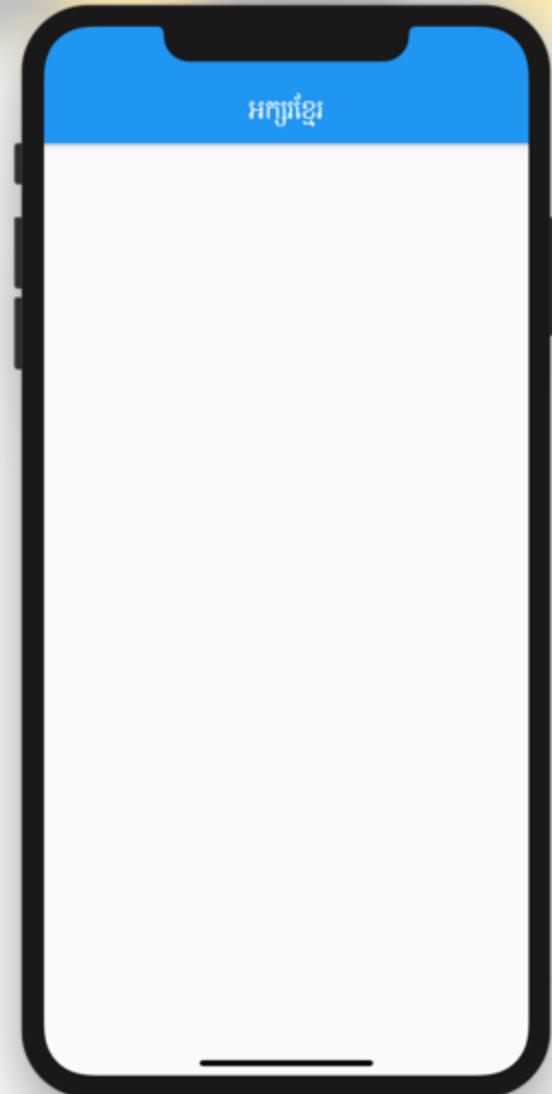
របៀបដាក់ Font ខ្សែ

- យក font ឈាមូយយកមកដាក់ក្នុង folder "fonts"
- សរសេរក្នុងបន្ថែមក្នុង pubspec.yaml -> ចូច Pub get



3. បន្ទាប់មកយើងហេរប្រើតាម fontFamily:

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



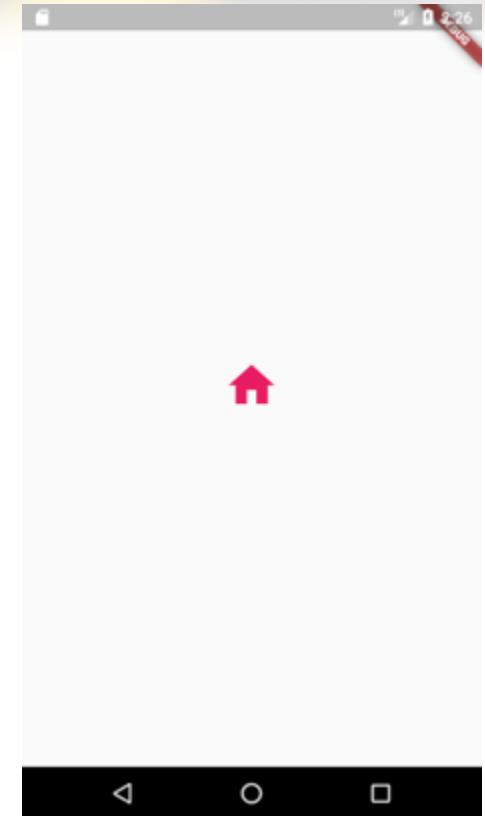
Icon

- Flutter ផ្តល់នូវបរាជ material icon ស្ថាតចុរចជាប្រសិទ្ធភាព

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

- បើយើងចង់ចុចលើ button នេះ យើងអាចប្រើ IconButton widget បាន៖

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



Image

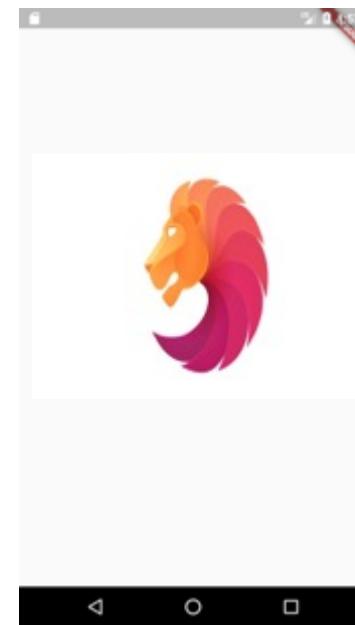
- Image សំរាប់បង្ហាញរបាយដែលយកចេញពី network, asset, និង file។
- fit property:
 - **fit: BoxFit.contain**

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



- **fit: BoxFit.cover**

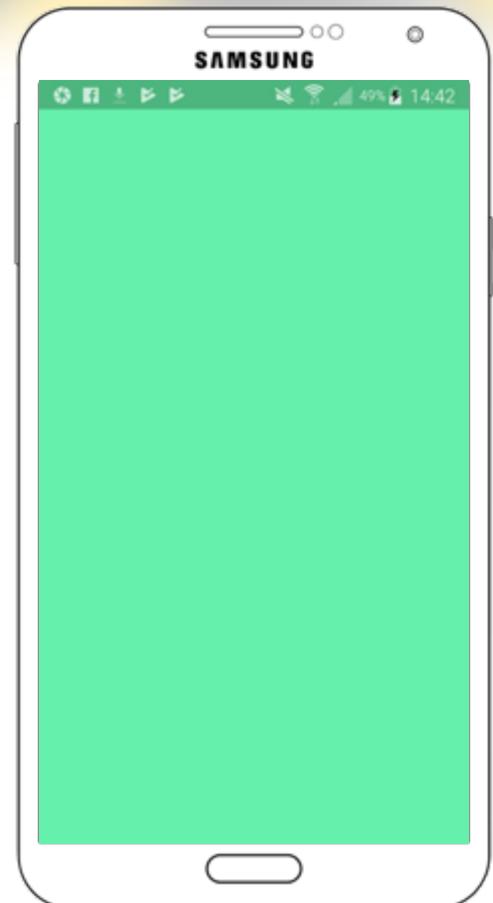
```
Container(  
    color: Colors.orange,  
    width: 200.0,  
    height: 200.0,  
    child: Image.network(  
        "http://bit.ly/2IGluzb",  
        fit: BoxFit.cover,  
    ),  
,
```



Container

container គឺជា widget ដែលអាយក្សូលប្រើ និងមានប្រយោជន៍
ជាន់តែបំផុត វាអនុញ្ញាតឱចក់ពណ៌រ កំណត់ទំហំ ទីតាំង ជាដើមបាន
យ៉ាងអាយ។ container អាចធ្វើត្រូវជាអ្នកបង្ហាញបរភេទដោយខ្លួន
ឯង បុរក់អាចប្រើជាមែរបស់ widget ក្នុងដែលបានឡើង។

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



Color Properties | Container

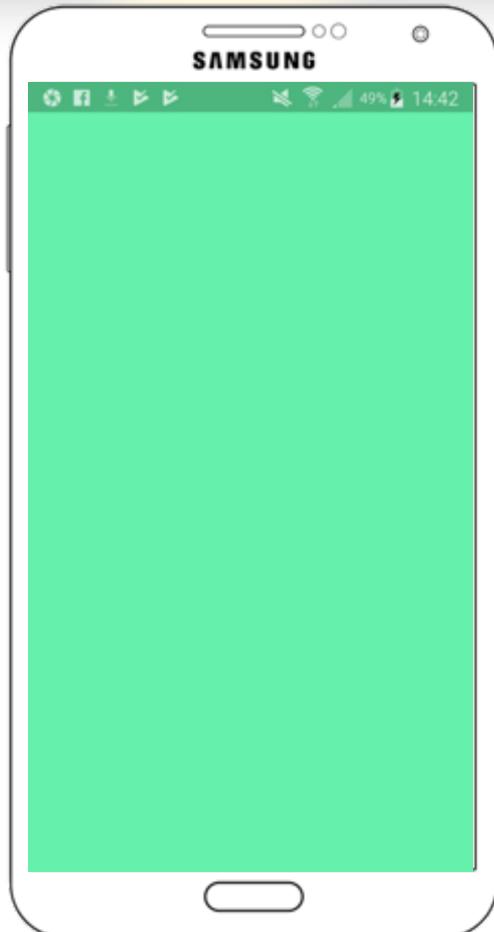
```
color: Colors.green
```

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

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

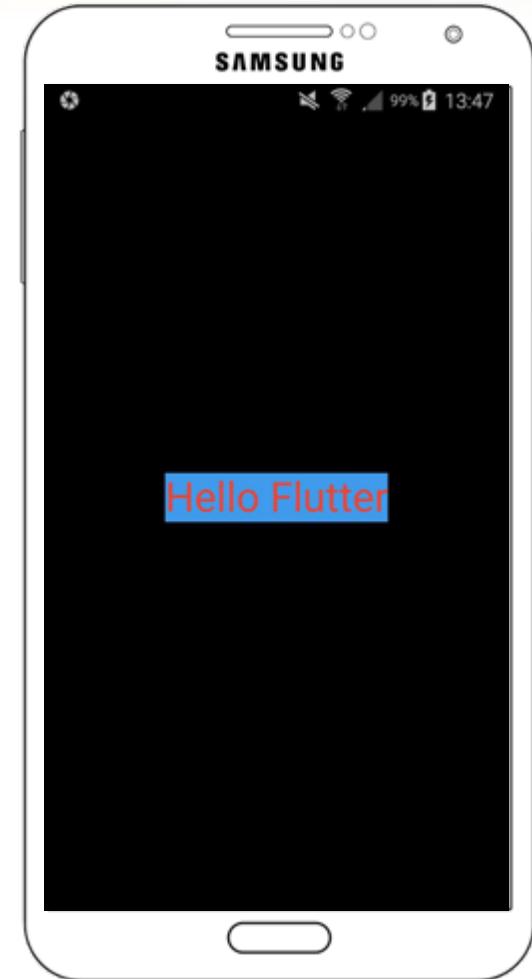
```
color: Color.fromARGB(100, 255, 10, 255)
```

```
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),  
    ),  
,
```



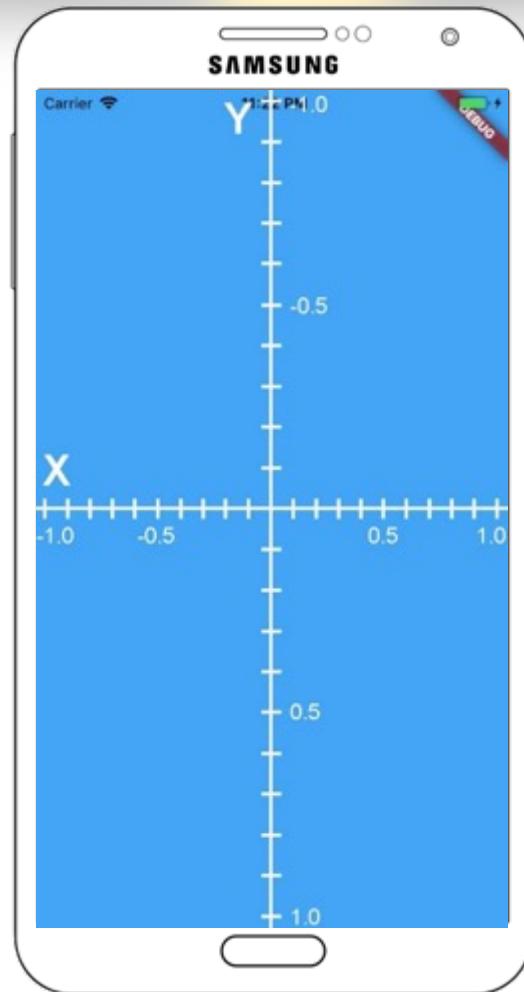
Alignment Properties | Container

```
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

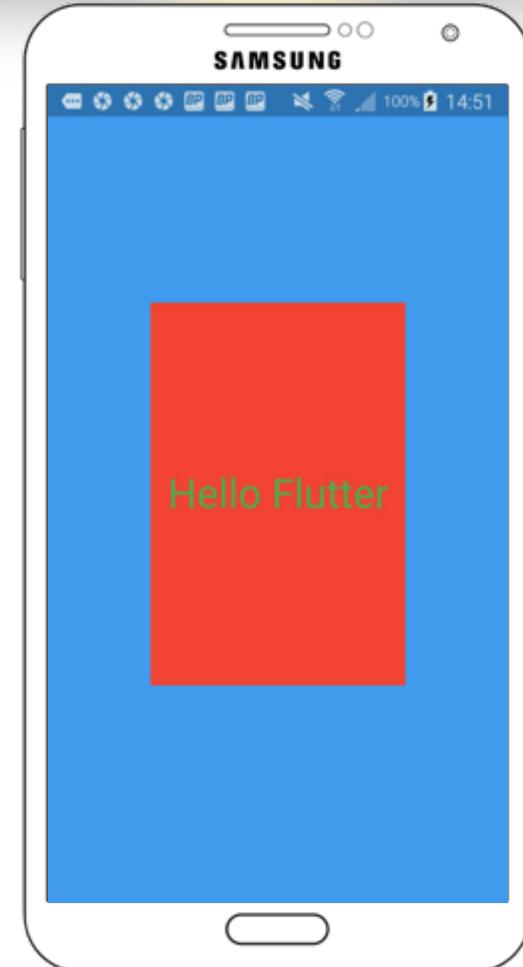
- bottomCenter = (0.0, 1.0)
- bottomLeft = (-1.0, 1.0)
- bottomRight = (1.0, 1.0)
- center = (0.0, 0.0)
- centerLeft = (0.0, 1.0)
- centerRight = (0.0, 1.0)
- topCenter = (0.0, 1.0)
- topLeft = (0.0, 1.0)
- topRight = (0.0, 1.0)



Constraints Property | Container

constraints គឺសំរាប់កំណត់ទំហំ ធំបំផុតបូន្ថាន និង
តូចបំផុតបូន្ថាន។ constrains មានប្រយោជន៍សំរាប់
អេក្រូយ App ដើម្បីអានទំហំជាលក្ខណៈ responsive
ទៅតាមទំហំ screen របស់ device។

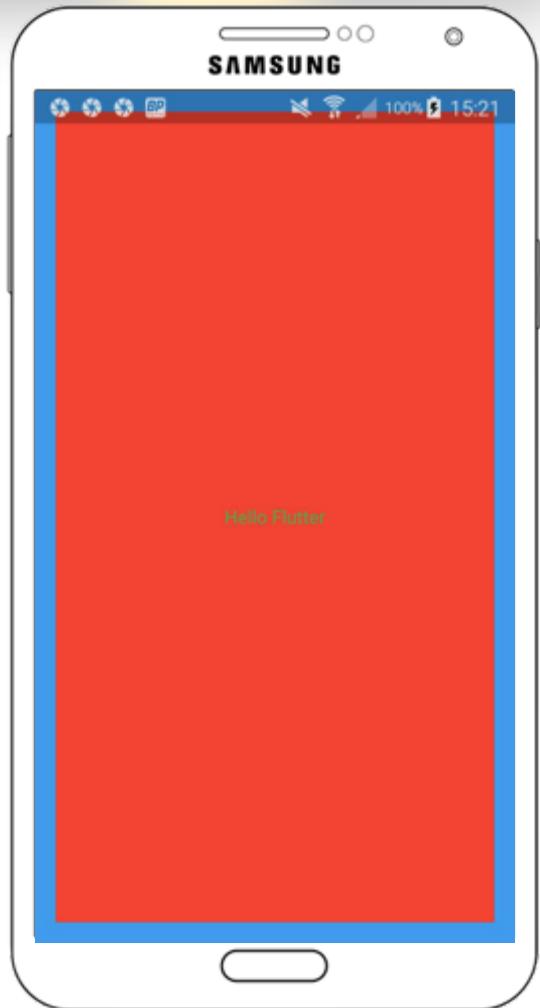
```
constraints: BoxConstraints(  
    maxHeight: 300.0,  
    maxWidth: 200.0,  
    minWidth: 150.0,  
    minHeight: 150.0  
),
```



Margin Property | Container

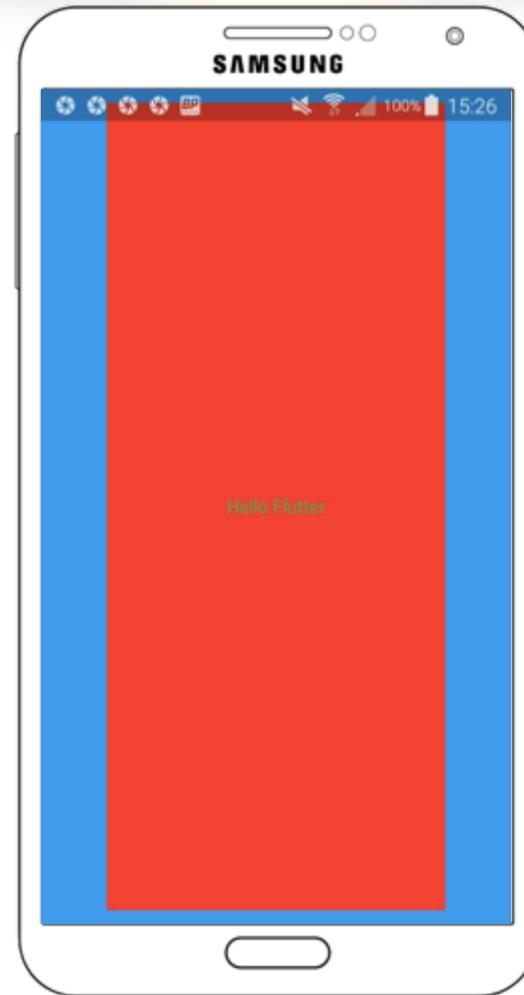
margin សំរាប់កំណត់ចន្លោះទេរជូន container

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



Margin Property | Container

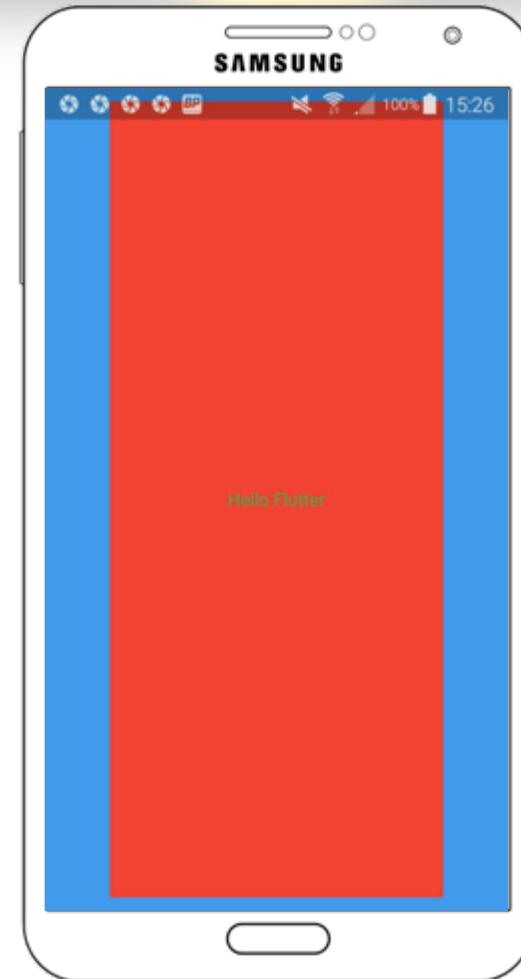
```
margin: EdgeInsets.symmetric(  
    vertical: 10.0,  
    horizontal: 50.0  
,
```



Margin Property | Container

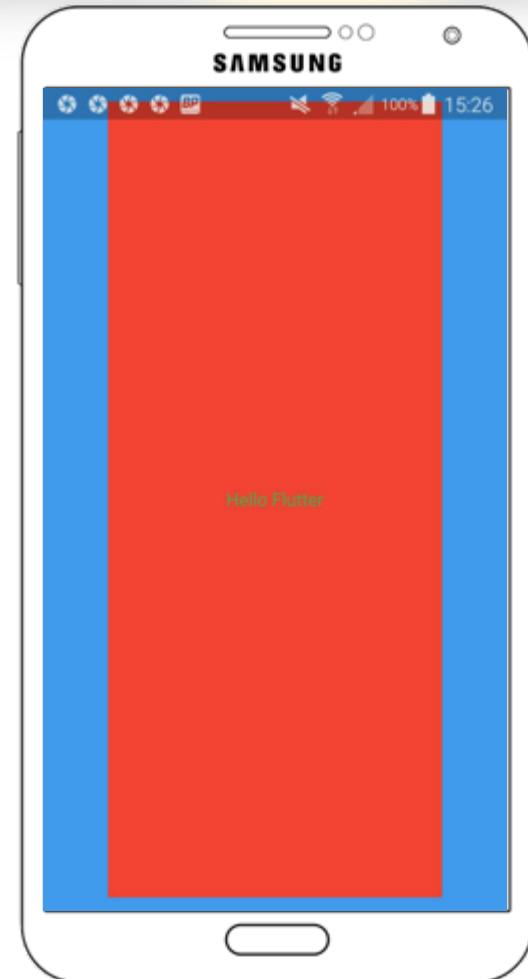
LTRB ମାନ୍ସିଯତ୍ତା Left, Top, Right, Bottom

```
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

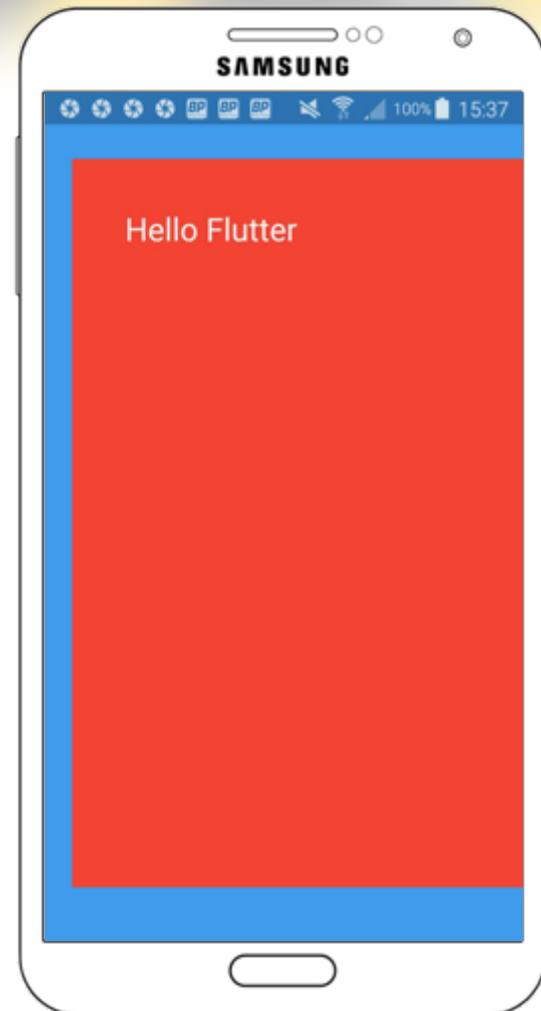
padding សំរាប់ជាក់ចន្លោះពីគេមរបស់ container ចូលទៅខាងក្រុង container ។ វាត្រូវយើង margin ដើម្បី margin គឺចន្លោះខាងក្រោម container វិនិយោគ padding តិជាក់ចន្លោះខាងក្រុង container ។

```
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),
```

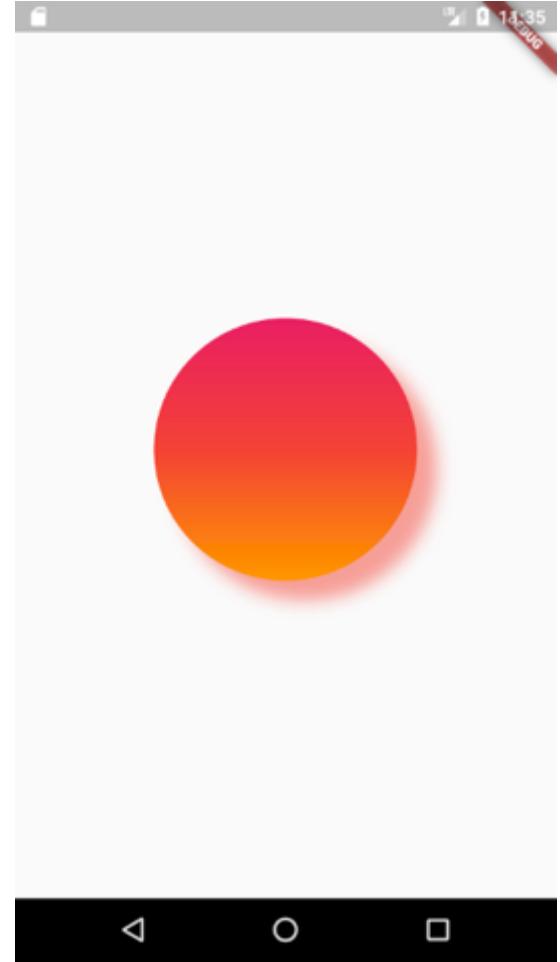
```
padding: EdgeInsets.only(  
    left: 20.0,  
    bottom: 40.0,  
    right: 40.0,  
    top: 50.0,  
,
```



BoxDecoration | Decoration | Container

- decoration គីសំរាប់រចនា container អាចជាក់ពណ៌លាយ
ស្រស់មេល បុត្រិកក្នុង container នៅយោទៅជាមួលក៏
បាន។

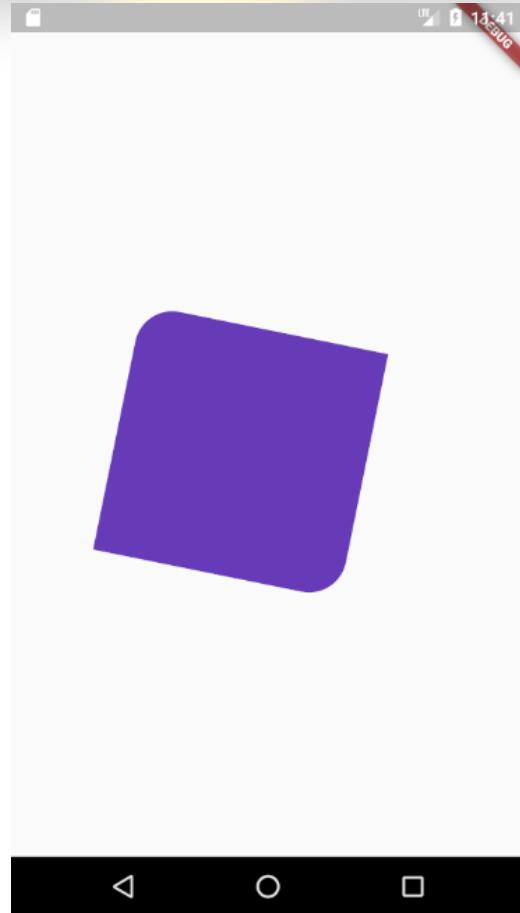
```
child: Container(  
    width: 200.0, height: 200.0,  
    decoration: BoxDecoration(  
        gradient: LinearGradient(  
            begin: Alignment.topCenter,  
            end: Alignment.bottomCenter,  
            colors: [Colors.pink, Colors.red, Colors.orange,],  
        ),  
        color: 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 សំរាប់ធ្វើសំបុរកំរង់ បូបង្កិល container

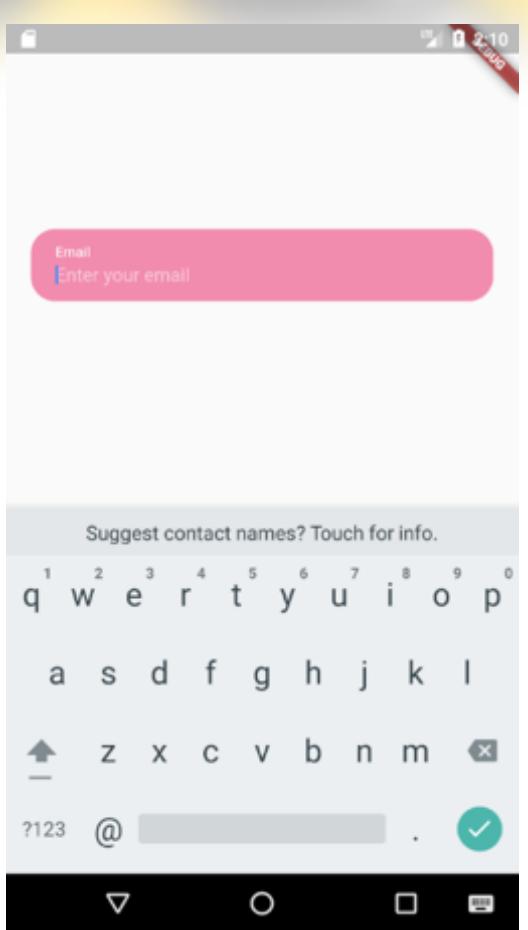
```
body: Container(  
    alignment: Alignment.center,  
    child: Container(  
        width: 200.0,  
        height: 200.0,  
        transform: Matrix4.rotationZ(0.2),  
        decoration: BoxDecoration(  
            color: Colors.deepPurple,  
            borderRadius: BorderRadius.only(  
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



TextField

- TextField សំរាប់អោយយើងអាចវិភាគក្នុងពាណិជ្ជកម្មបញ្ហាលាតាន។ ដើម្បីទទួលទិន្នន័យ ពី TextField ត្រូវប្រើ TextEditingController។
- properties:
 - obscureText: true សំរាប់ជាក់ password
 - keyboardType: សំរាប់ជាក់ keyboard
 - decoration: សំរាប់គុណអក្សរ៖ label, hint, border

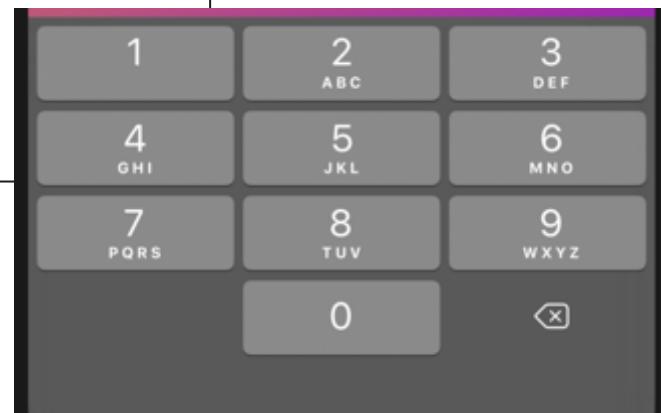
```
Container(  
    padding: EdgeInsets.only(left: 20.0, right: 20.0),  
    decoration: BoxDecoration(  
        borderRadius: BorderRadius.circular(20.0),  
        color: Colors.pink.withOpacity(0.5),  
    ),  
    child: TextField(  
        keyboardType: TextInputType.emailAddress,  
        decoration: 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,  
    ),  
,
```



ដោះស្រាយបញ្ហា TextField ជាមួយ Number Keyboard នៅលើ iOS

- សំរាប់ Number Keyboard នៅលើ iOS គឺមិនមានបូតុងបិទដូច Android ទេ។ ចីងយើងត្រូវសរសែរក្នុងបន្ថែមអាយបិទពេលចុចលើផ្ទា App:

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



Event Listener

- សំណើប់ event listener ត្រូវ dart គឺងាយស្មែលប្រើ ព្រមទាំងប្រើទំនួរ closure។
- យើងអាចប្រើ Widget មួយចំនួនដែចធានា: InkWell, RaisedButton, FlatButton, MaterialButton និង GestureDetector សំណើប់ជាកែវយ៉ាយ 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,  
        ),  
    ),  
,
```

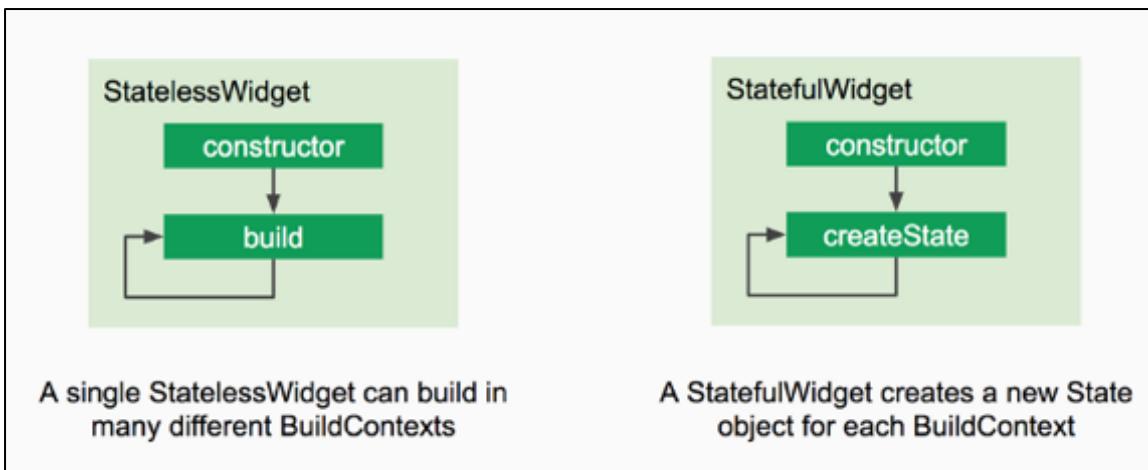
```
TextButton(  
    onPressed: (){  
        print("pressed");  
    },  
    child: Container(  
        child: Image.network(  
  
"http://bit.ly/2IGluzb",  
            fit: BoxFit.contain,  
        ),  
    ),  
,
```

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

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

StatefulWidget

- គ្រប់ដឹកទាំងអស់នៅក្នុង UI នៃ Flutter គឺសូឡូតែជាការណ៍ Widget ។ ព័ត៌មានដែលបានផ្តល់ចេញនៅក្នុង Widget ជាប្រភេទនៃ StatelessWidget (Widget ដែលគ្មាន State) និង StatefulWidget (Widget ដែលពេនពេញទៅដោយ State)
- បើនិយាយអាយស្សលស្តាប់ បើយើងចង់ចូចអីម្លាយ ហើយរាជ្យសំបុរាប់ (UI) គឺយើងត្រូវប្រើ StatefulWidget ៖



នៅក្បាន StatefulWidget គីមាន class ចំណាំ

- 1- class ត្រូវបានដែលជាក្នុងរបស់ StatefulWidget
- 2- និង class ម្វែយទេរកជាក្នុងរបស់ State

```
1 import 'package:flutter/material.dart';
2
3 class MyHome extends StatefulWidget {
4     @override
5     _MyHomeState createState() => _MyHomeState();
6 }
7
8 class _MyHomeState extends State<MyHome> {
9     @override
10    Widget build(BuildContext context) {
11        return Scaffold(
12            appBar: AppBar(...),
13            body: Container(),
14        );
15    }
16}
```

ហើយកាល់ពេលដែលយើងចង់កែរដ្ឋម្មួយ គឺយើងត្រូវតែតែល variable នៅក្បាង method ពីសេសម្បួយណ៍ៗថា `setState()` ជាការស្របចំ

```
1 import 'package:flutter/material.dart';
2
3 class MyHome extends StatefulWidget {
4     @override
5     _MyHomeState createState() => _MyHomeState();
6 }
7
8 class _MyHomeState extends State<MyHome> {
9
10     String text = "អាសយដ្ឋាន";
11
12     @override
13     Widget build(BuildContext context) {
14         return Scaffold(
15             appBar: AppBar(
16                 title: Text(text, style: TextStyle(fontFamily: "Khmer OS Content"),
17                     ),
18                 actions: <Widget>[
19                     IconButton(
20                         onPressed: () {
21                             setState(() {
22                                 text = "អាសយដ្ឋានភ្នំពេញ";
23                             });
24                         },
25                     ),
26                     ],
27                 ),
28             body: Container(),
29         );
30 }
```