



ICT Department

តំរៀប Widget អោយមានរបៀបតាម Row, Column, Stack, និង SingleChildScrollView

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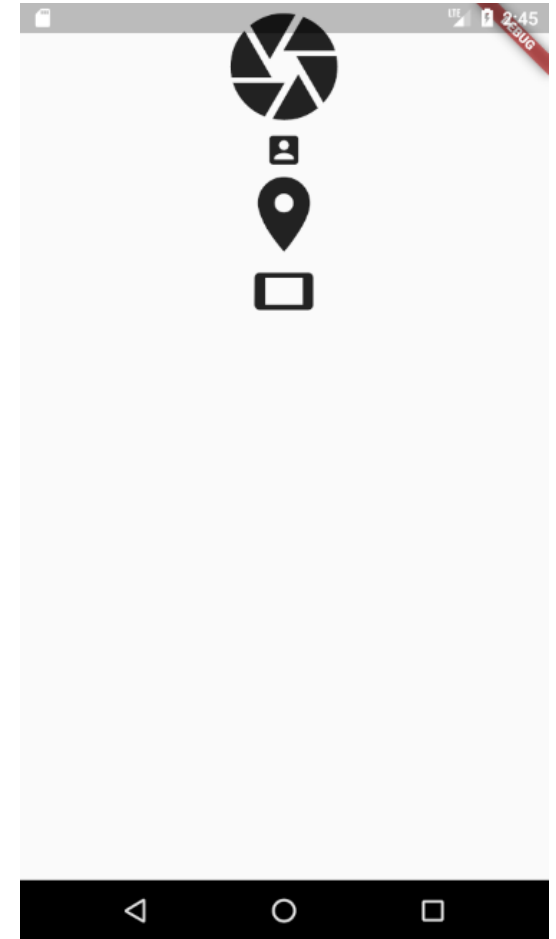
- Row គឺមានកូនច្រើន (List<Widget>) ហើយតំរៀប widget ទាំងនោះជាជួរដេក។

```
Row(
  children: <Widget>[
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



- Column គឺមានកូនច្រើន (List<Widget>) ដូច row ដែរ តែតំរៀប widget ទាំងនោះជាជួរឈរ។

```
Column(
  children: <Widget>[
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```

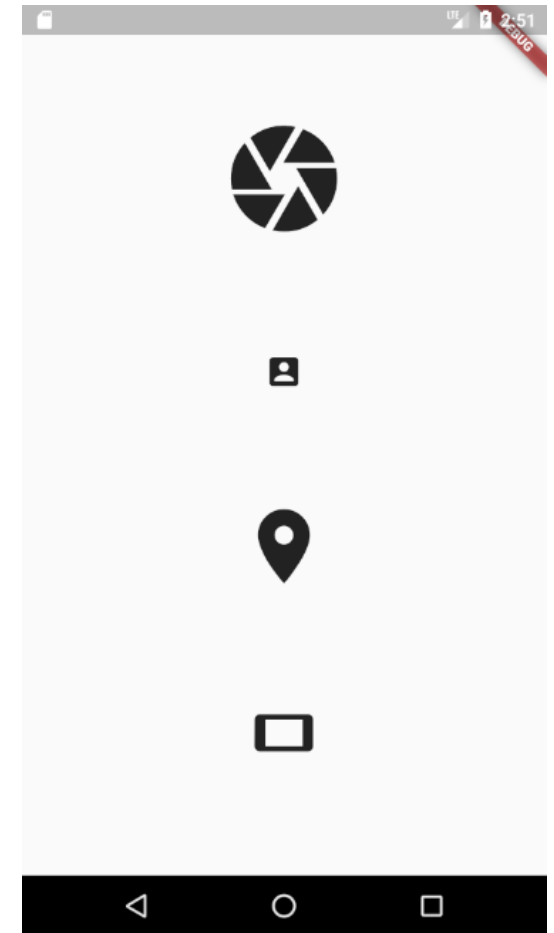


ទាំង row ទាំង column គឺមាន properties ដូចគ្នាបេះបិទ។

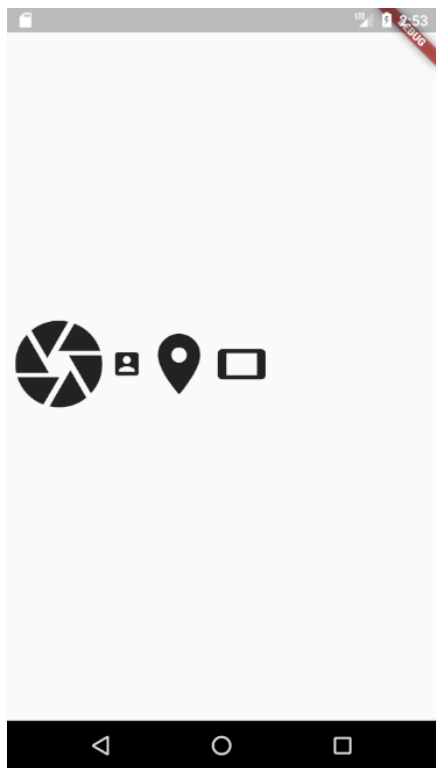
mainAxisAlignment គឺសំរាប់តំរៀប widget ទាំងអស់ ជាលក្ខណៈ៖

- MainAxisAlignment.start: តំរៀបពីចំនុចចាប់ផ្តើម
- MainAxisAlignment.center: តំរៀបពីចំកណ្តាល
- MainAxisAlignment.end: តំរៀបពីចំនុចបញ្ចប់
- MainAxisAlignment.spaceBetween: តំរៀបដាក់ចន្លោះកណ្តាល
- MainAxisAlignment.spaceAround: តំរៀបដាក់ចន្លោះជុំវិញ
- MainAxisAlignment.spaceEvenly: តំរៀបដាក់ចន្លោះកណ្តាលស្មើគ្នា

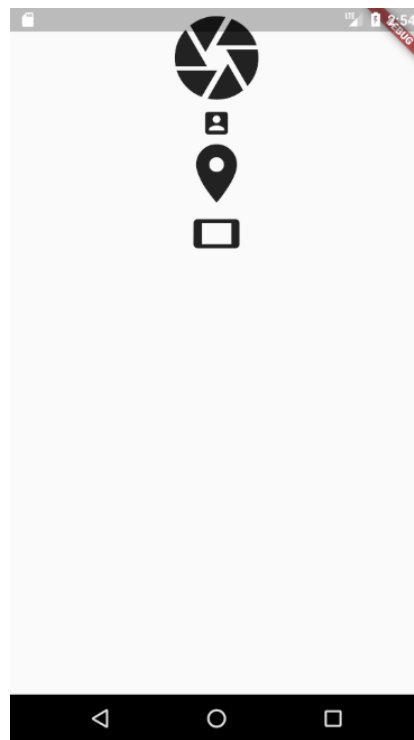
```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceEvenly,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



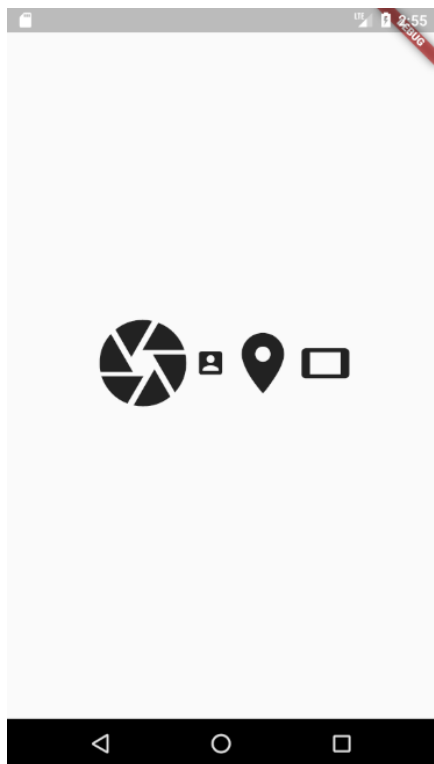
```
Row(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.start,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



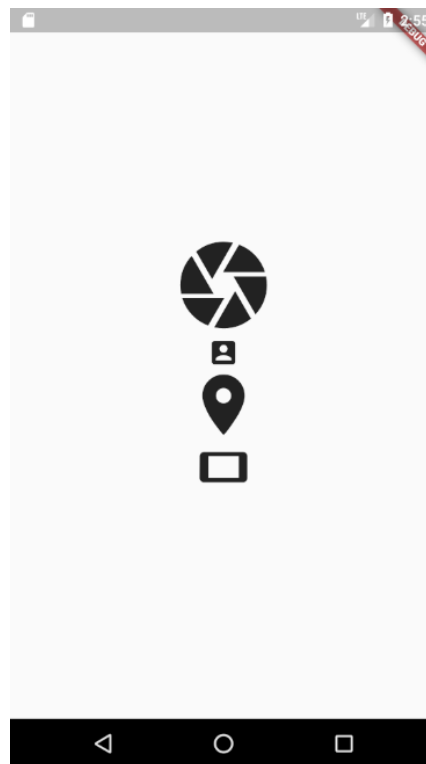
```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.start,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



```
Row(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.center,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```

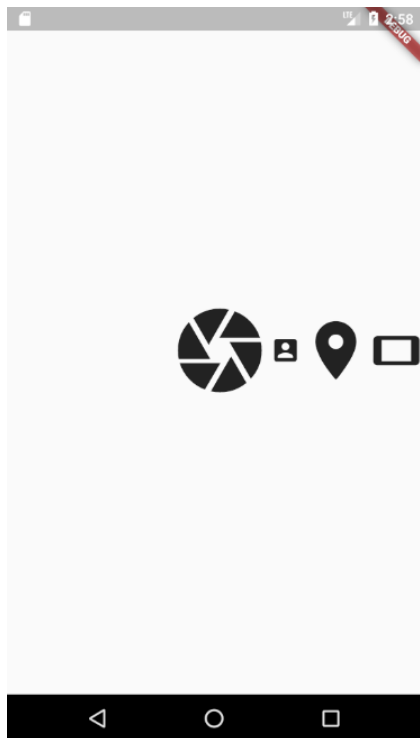


```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.center,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```

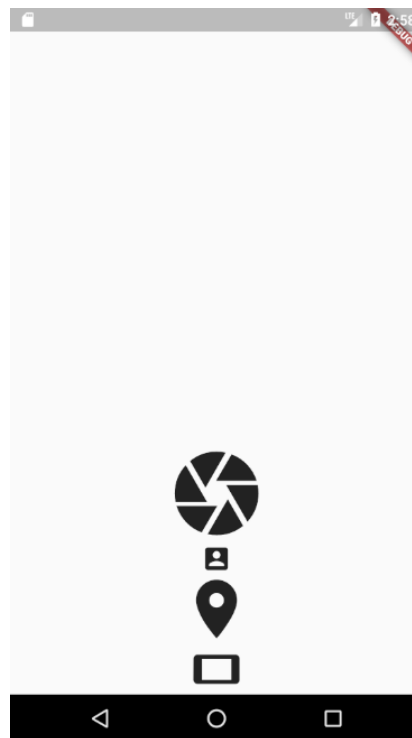


MainAxisAlignment.end: តំរៀបពីចំនុចបញ្ចប់

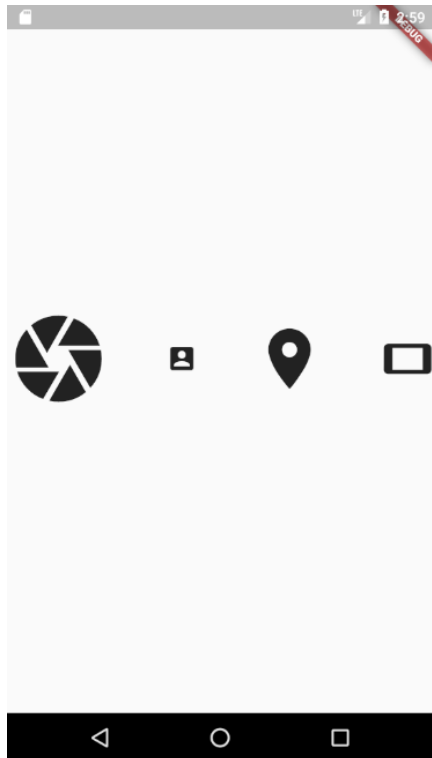
```
Row(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.end,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



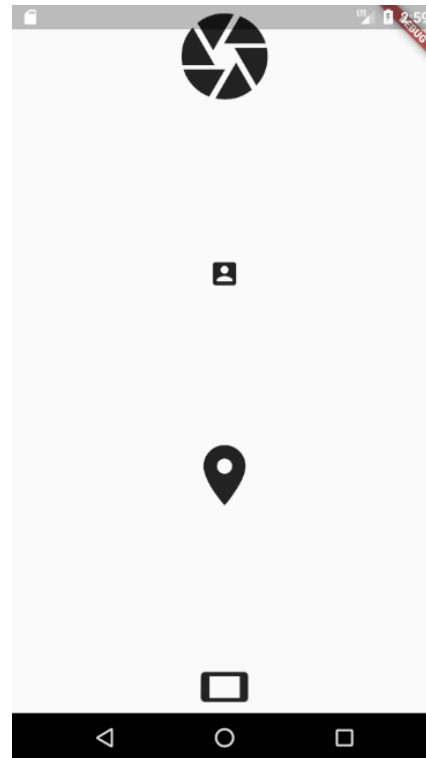
```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.end,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



```
Row(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceBetween,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```

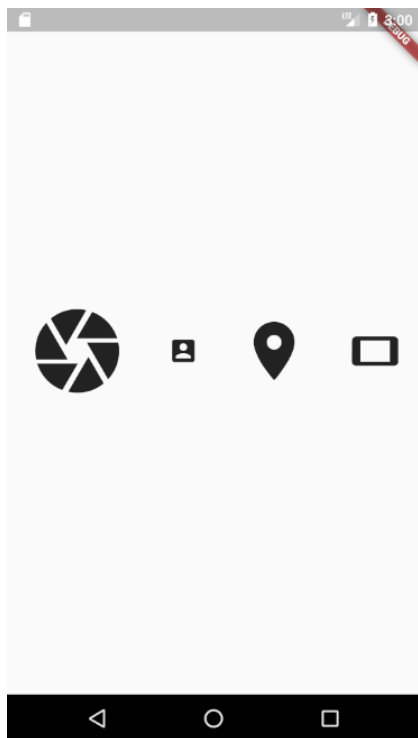


```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceBetween,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```

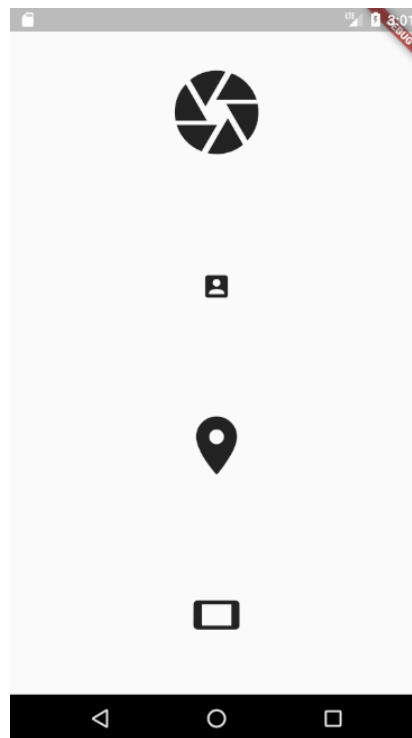


MainAxisAlignment.spaceAround: តំរៀបដាក់ចន្លោះជុំវិញ

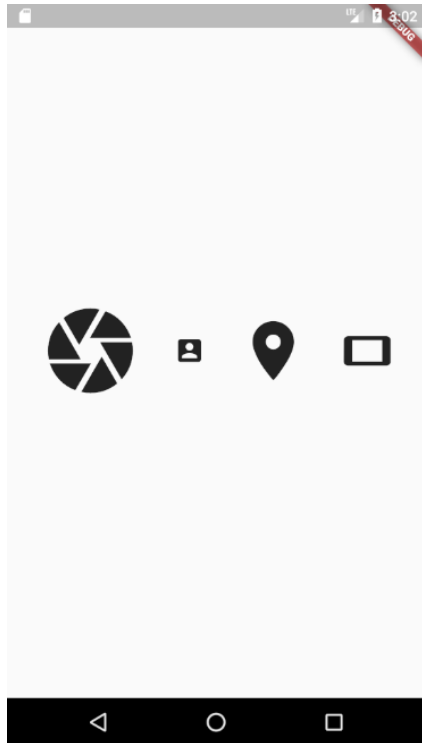
```
Row(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceAround,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



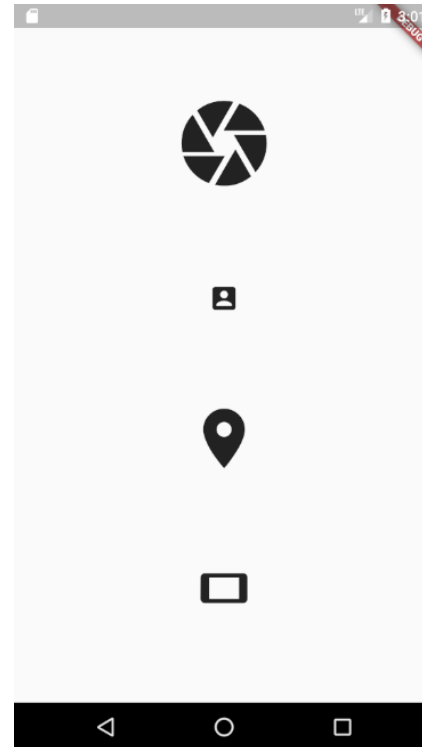
```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceAround,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



```
Row(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceEvenly,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



```
Column(
  children: <Widget>[
    mainAxisAlignment: MainAxisAlignment.spaceEvenly,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



crossAxisAlignment គឺសំរាប់តំរៀបរវាង widget នីមួយៗ ជាលក្ខណៈ៖

- CrossAxisAlignment.start: តំរៀបរវាងចំនុចចាប់ផ្តើមនៃ widget
- CrossAxisAlignment.end: តំរៀបរវាងចំនុចចុងក្រោយនៃ widget
- CrossAxisAlignment.center: តំរៀបរវាងចំនុចកណ្តាលនៃ widget
- CrossAxisAlignment.baseline: តំរៀបរវាងអក្សរនៃចំនុចដើម
 - ត្រូវការ៖ textBaseline: TextBaseline.alphabetic,
- CrossAxisAlignment.stretch: តំរៀបរវាងទំហំពេញនៃ widget

```
Row(
  children: <Widget>[
    crossAxisAlignment: CrossAxisAlignment.start,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



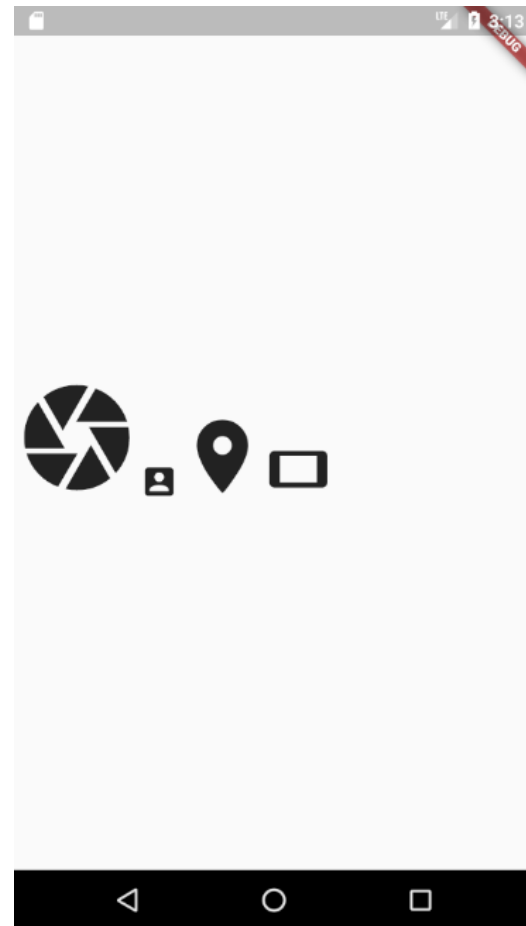
```
Row(
  children: <Widget>[
    crossAxisAlignment: CrossAxisAlignment.start,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



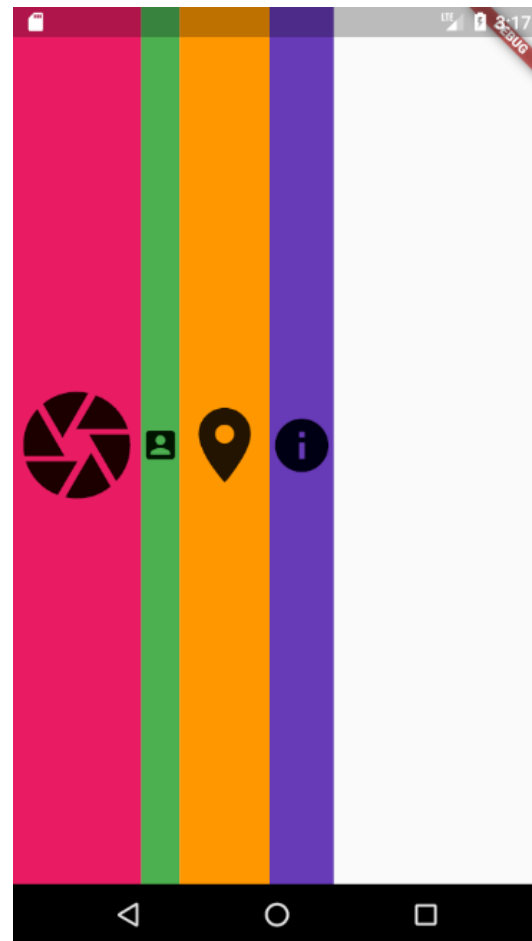
```
Row(
  children: <Widget>[
    crossAxisAlignment: CrossAxisAlignment.end,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```



```
Row(
  children: <Widget>[
    crossAxisAlignment: CrossAxisAlignment.baseline,
    textBaseline: TextBaseline.alphabetic,
    Icon(Icons.camera, size: 100.0,),
    Icon(Icons.account_box, size: 30.0,),
    Icon(Icons.place, size: 70.0,),
    Icon(Icons.stay_primary_landscape, size: 50.0,),
  ],
),
```

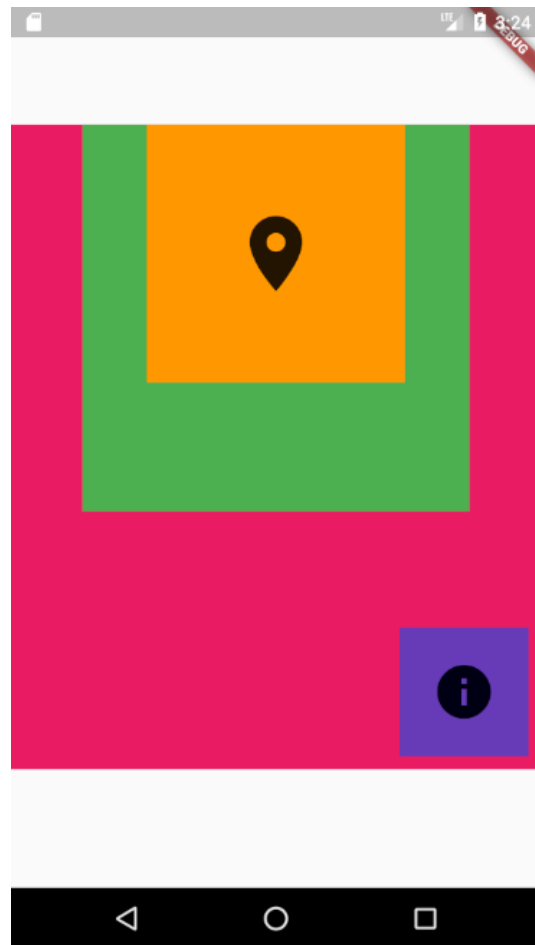


```
Row(
  crossAxisAlignment: CrossAxisAlignment.stretch,
  children: <Widget>[
    Container(
      color: Colors.pink,
      child: Icon(Icons.camera, size: 100.0,)),
    Container(
      color: Colors.green,
      child: Icon(Icons.account_box, size: 30.0,)),
    Container(
      color: Colors.orange,
      child: Icon(Icons.place, size: 70.0,)),
    Container(
      color: Colors.deepPurple,
      child: Icon(Icons.info, size: 50.0,)),
  ],
),
```



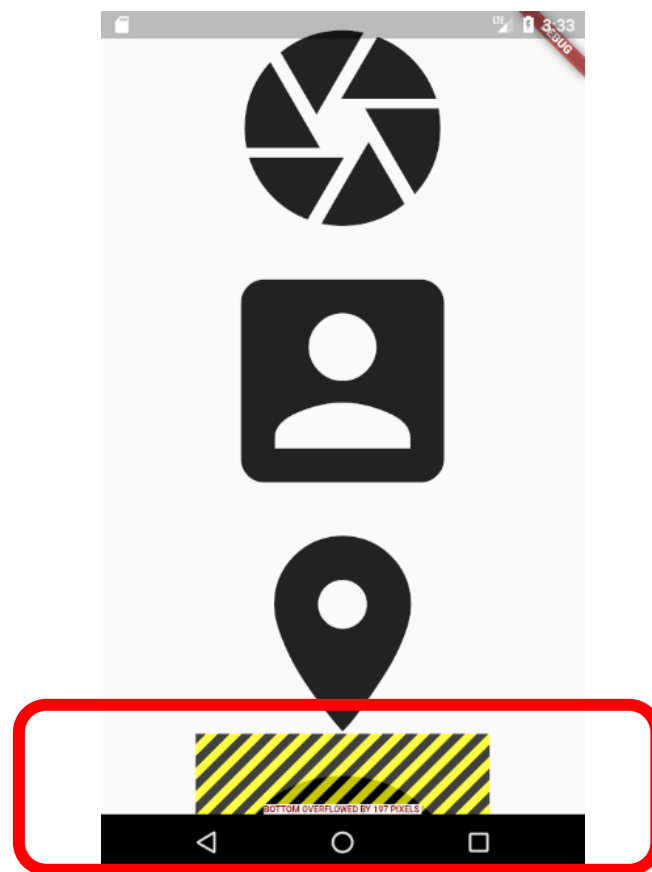
- Stack គឺសំរាប់តំរៀប widget គឺគង់ពីលើគ្នា។
- យើងអាចប្រើ alignment សំរាប់តំរៀបអោយចំខាងឆ្វេង ស្តាំ លើ ក្រោម និង កណ្តាលជាដើម។
- ឬអាចប្រើ Positioned សំរាប់កំណត់ទីតាំងអោយត្រឹមត្រូវនឹងខាងឆ្វេងស្តាំ លើ ក្រោម ជាដើម។

```
Stack(
  alignment: Alignment.topCenter,
  children: <Widget>[
    Container(width: 500.0, height: 500.0,
      color: Colors.pink,
      child: Icon(Icons.camera, size: 100.0,)),
    Container(width: 300.0, height: 300.0,
      color: Colors.green,
      child: Icon(Icons.account_box, size: 30.0,)),
    Container(width: 200.0, height: 200.0,
      color: Colors.orange,
      child: Icon(Icons.place, size: 70.0,)),
    Positioned(
      right: 10.0,
      bottom: 10.0,
      child: Container(width: 100.0, height: 100.0,
        color: Colors.deepPurple,
        child: Icon(Icons.info, size: 50.0,)),
    ),
  ],
)
```



- SingleChildScrollView គឺជា widget មួយសំរាប់ជំនួយដល់ការតំរៀប Row និង Column ព្រោះថា Row Column គឺមានបញ្ហាមួយត្រង់ថា បើទំហំវាលើសពី screen គឺវានឹងចេញ error ដូចរូបខាងក្រោម៖

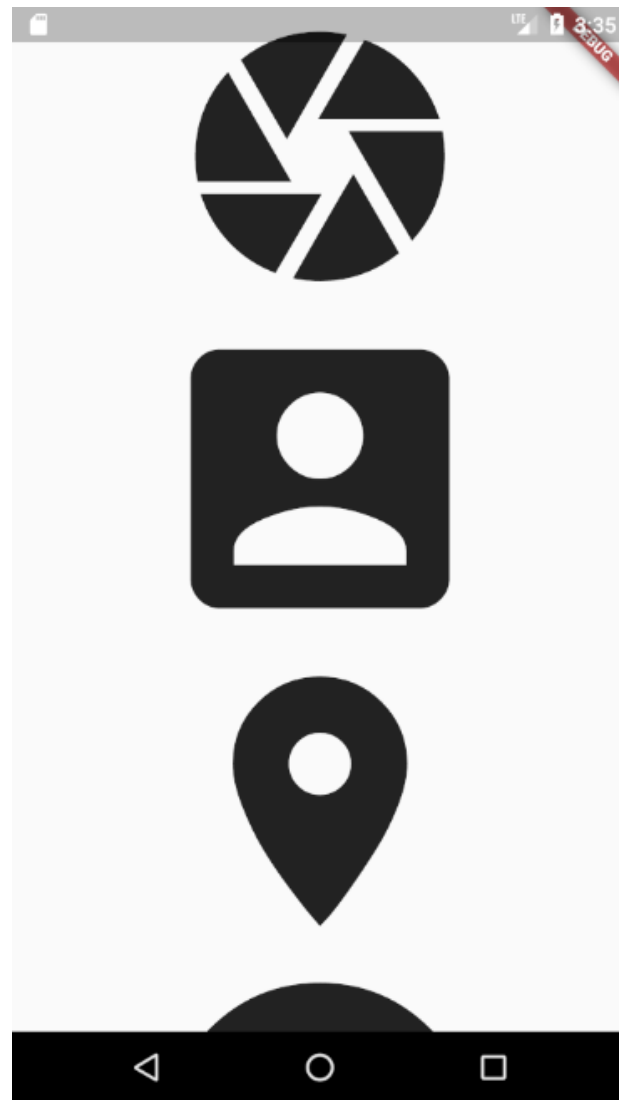
```
Column(
  children: <Widget>[
    Icon(Icons.camera, size: 200,),
    Icon(Icons.account_box, size: 230.0,),
    Icon(Icons.place, size: 200.0,),
    Icon(Icons.info, size: 250.0,),
  ],
),
```



```
SingleChildScrollView(
  child: Column(
    children: <Widget>[
      Icon(Icons.camera, size: 200,),
      Icon(Icons.account_box, size: 230.0,),
      Icon(Icons.place, size: 200.0,),
      Icon(Icons.info, size: 250.0,),
    ],
  ),
),
```

សំរាប់ Android គឺយើងគួរថែម physics អោយវាមានលក្ខណៈទាញយីតៗពេលចុចទាញ reload៖

```
SingleChildScrollView(
  physics: BouncingScrollPhysics(),
  child: Column(
    children: <Widget>[
      Icon(Icons.camera, size: 200,),
      Icon(Icons.account_box, size: 230.0,),
      Icon(Icons.place, size: 200.0,),
      Icon(Icons.info, size: 250.0,),
    ],
  ),
),
```



```
SingleChildScrollView(  
  physics: BouncingScrollPhysics(),  
  scrollDirection: Axis.horizontal,  
  child: Row(  
    children: <Widget>[  
      Icon(Icons.camera, size: 200,),  
      Icon(Icons.account_box, size: 230.0,),  
      Icon(Icons.place, size: 200.0,),  
      Icon(Icons.info, size: 250.0,),  
    ],  
  ),  
)
```

