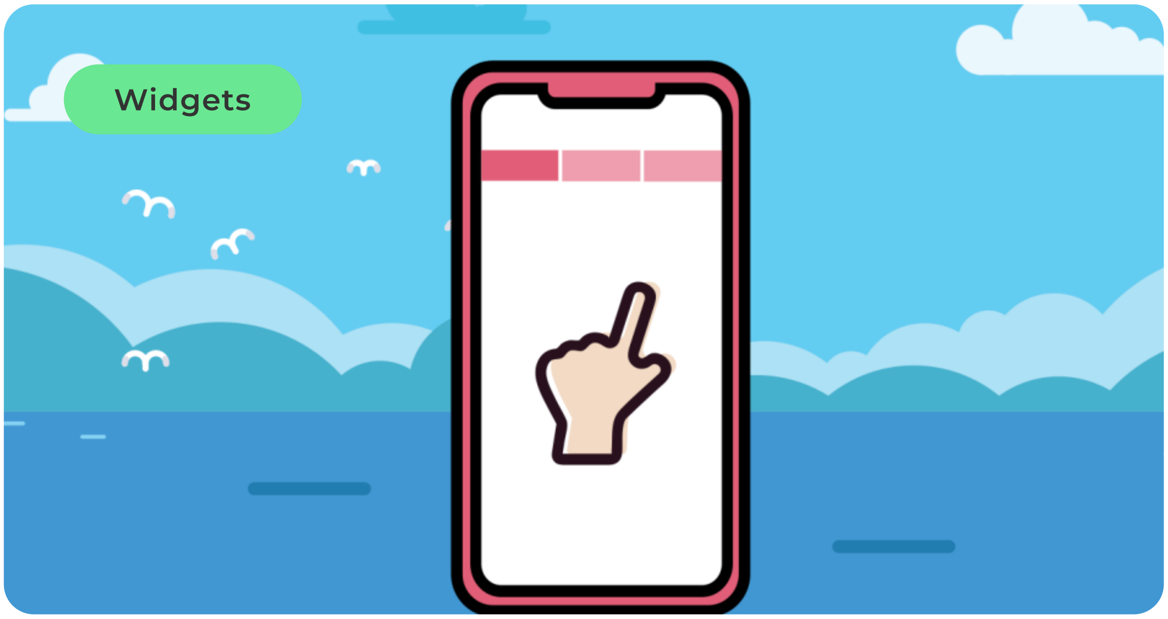
Flutter Beads



July 7, 2021

A Deep Dive into TabBar in Flutter

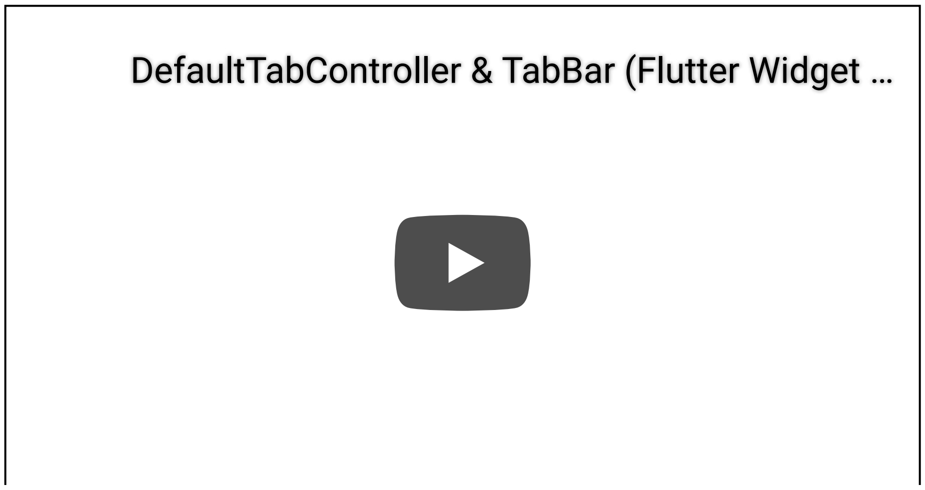
6 min read

Apps often have different categories of content or features available to users. Naturally, you want your users to be able to quickly glance at each option and move between categories with a simple swipe. That's where the Flutter TabBar class comes in.

In this tutorial, we'll tell you everything you need to know about TabBar in Flutter, show you how to implement tabs in your Flutter app, and walk you through some TabBar examples.

We'll cover the following in detail:

If you're a visual learner, check out this quick video tutorial:



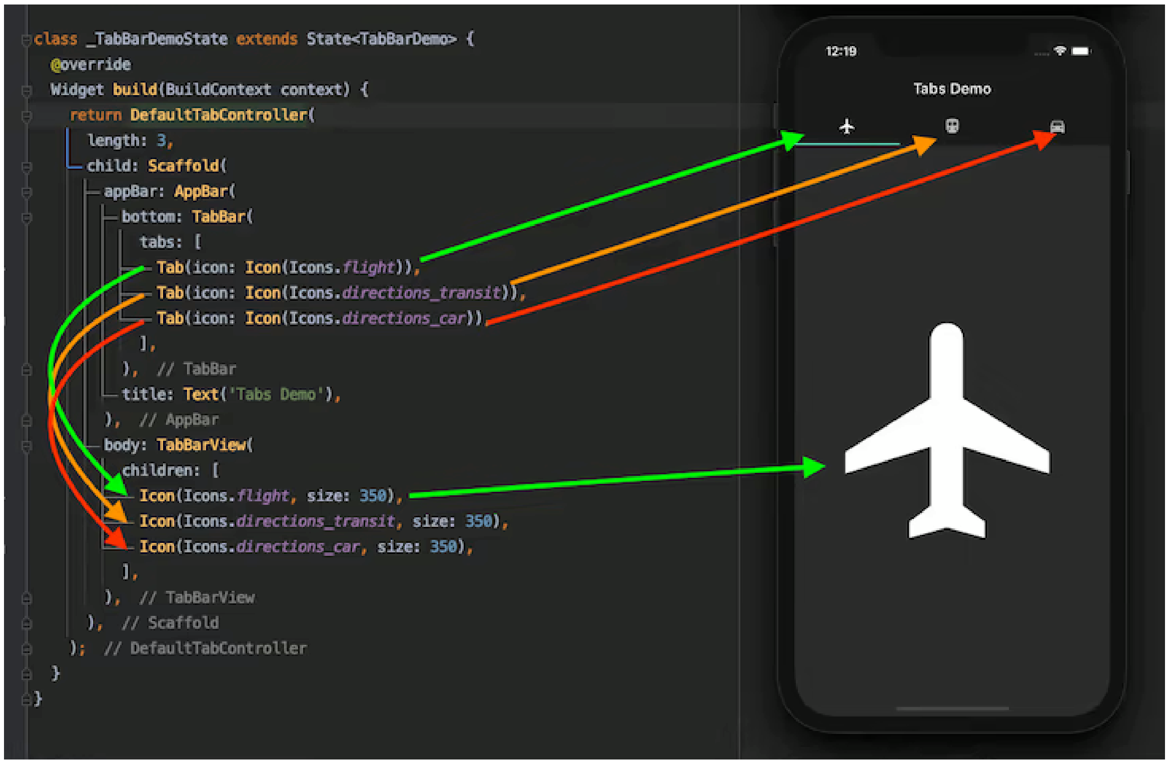
Setting up TabBar in Flutter

Here’s the minimal code to get TabBar up and running:

```
 DefaultTabController(
   length: 3,
   child: Scaffold(
     appBar: AppBar(
       bottom: TabBar(
         tabs: [
           Tab(icon: Icon(Icons.flight)),
           Tab(icon:
Icon(Icons.directions_transit)),
           Tab(icon: Icon(Icons.directions_car)),
         ],
       ),
       title: Text('Tabs Demo'),
     ),
     body: TabBarView(
       children: [
         Icon(Icons.flight, size: 350),
         Icon(Icons.directions_transit, size:
350),
         Icon(Icons.directions_car, size: 350),
       ],
     ),
   ),
 );
```

To implement TabBar in your Flutter app, complete the following steps:

1. Wrap the `Scaffold` widget inside the `DefaultTabController`. This should be used for most simple use cases. If you want to control the tabs programmatically, you should use TabController and avoid this step
2. Place the `TabBar` widget as the bottom property of `AppBar`
3. Provide `TabBarView` in the body of the `AppBar`. `TabBarView` is like `PageView`, which is used mostly with TabBar because it shows the widget based on the currently selected tab



```
class _TabBarDemoState extends State<TabBarDemo> {
  @override
  Widget build(BuildContext context) {
    return DefaultTabController(
      length: 3,
      child: Scaffold(
        appBar: AppBar(
          bottom: TabBar(
            tabs: [
              Tab(icon: Icon(Icons.flight)),
              Tab(icon: Icon(Icons.directions_transit)),
              Tab(icon: Icon(Icons.directions_car)),
            ],
          ), // TabBar
          title: Text('Tabs Demo'),
        ), // AppBar
        body: TabBarView(
          children: [
            Icon(Icons.flight, size: 350),
            Icon(Icons.directions_transit, size: 350),
            Icon(Icons.directions_car, size: 350),
          ],
        ), // TabBarView
      ), // Scaffold
    ); // DefaultTabController
  }
}
```

How to customize the tab indicator in TabBar

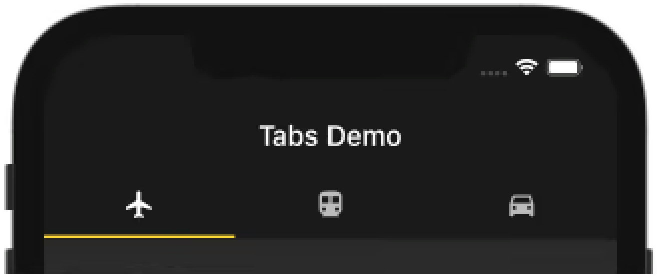
You can modify the tab indicator in TabBar to customize the look and feel of your Flutter app.

Below are some examples of ways you can modify the indicator to improve the user experience and overall appearance of your app.

Tab color

To alter the color of a tab:

```
TabBar(
  indicatorColor: Colors.amberAccent,
  tabs: [],
)
```

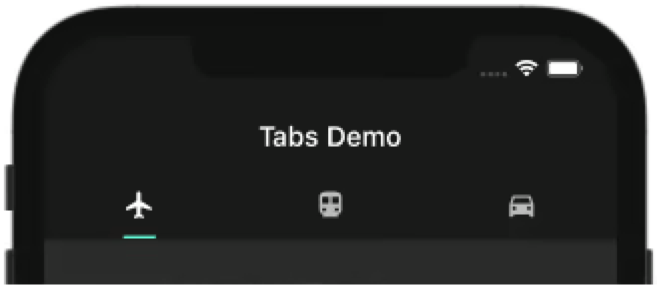


Tab size

Here’s how to change the size of a tab:

```
TabBar(
  indicatorSize: TabBarIndicatorSize.label,
  tabs: [],
)
```

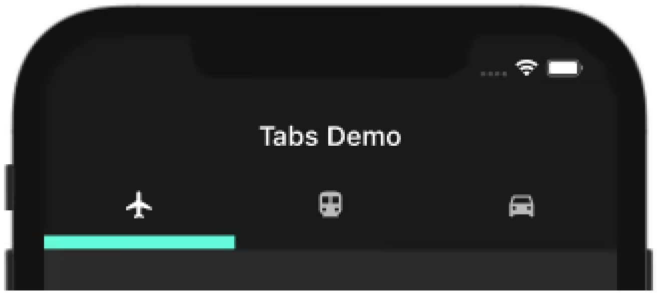
This makes the indicator size equal to the width of the label. The default value is `TabBarIndicatorSize.tab`.



Tab height

To change the height of a tab:

```
TabBar(
  indicatorWeight: 10,
  tabs: [],
)
```



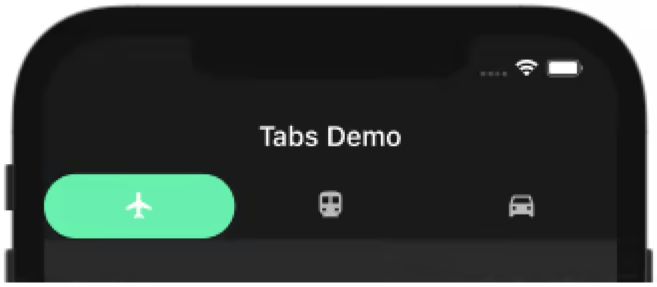
Change the indicator

You can change the indicator itself, as shown below:

```
 TabBar(
   indicator: BoxDecoration(
     borderRadius: BorderRadius.circular(50), //
Creates border
     color: Colors.greenAccent), //Change
background color from here
   tabs: [],
 )
```

Flutter TabBar background color

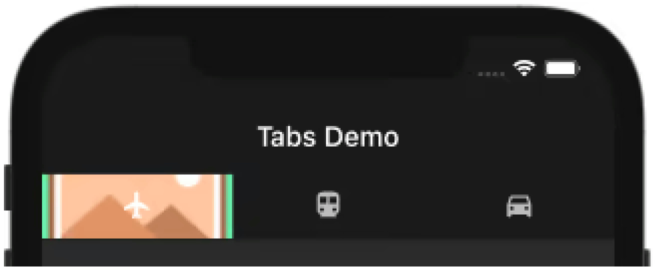
Changing the background color of the tab is as easy as changing the `color: Colors.greenAccent`.



Background image

To set a background image with TabBar:

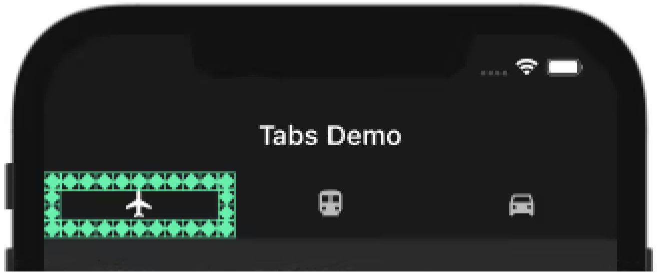
```
 indicator: BoxDecoration(
     color: Colors.greenAccent,
     image: DecorationImage(
         image:
AssetImage('assets/images/placeholder.png'),
         fit: BoxFit.fitWidth)),
```



Create a custom indicator

If you want to create a custom indicator with TabBar, enter the following:

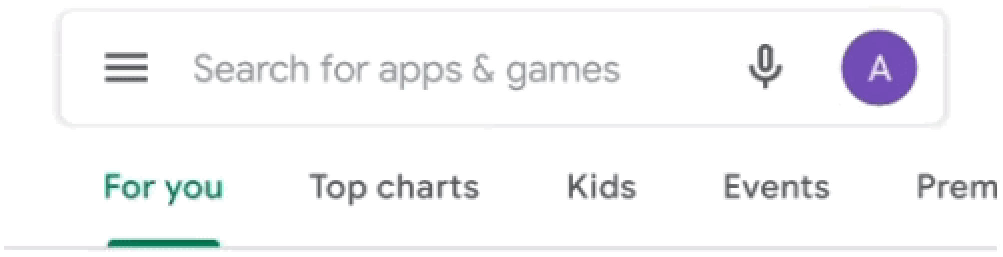
```
indicator: CustomDecoration(12.0),
```



Since the `indicator` property accepts `Decoration`, your imagination is the only limitation. You can create anything at the place of the indicator.

Making scrollable tabs with TabBar

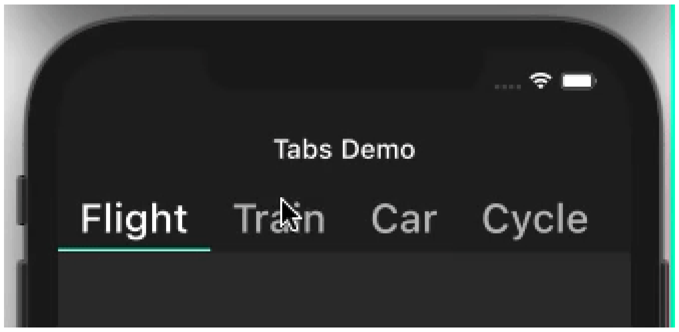
Let's say you're working on an app that has a lot of categories, similar to Google Play:



Let's explore some ways to include all your tabs and make them scrollable, both horizontally and vertically.

Horizontally scrollable tabs

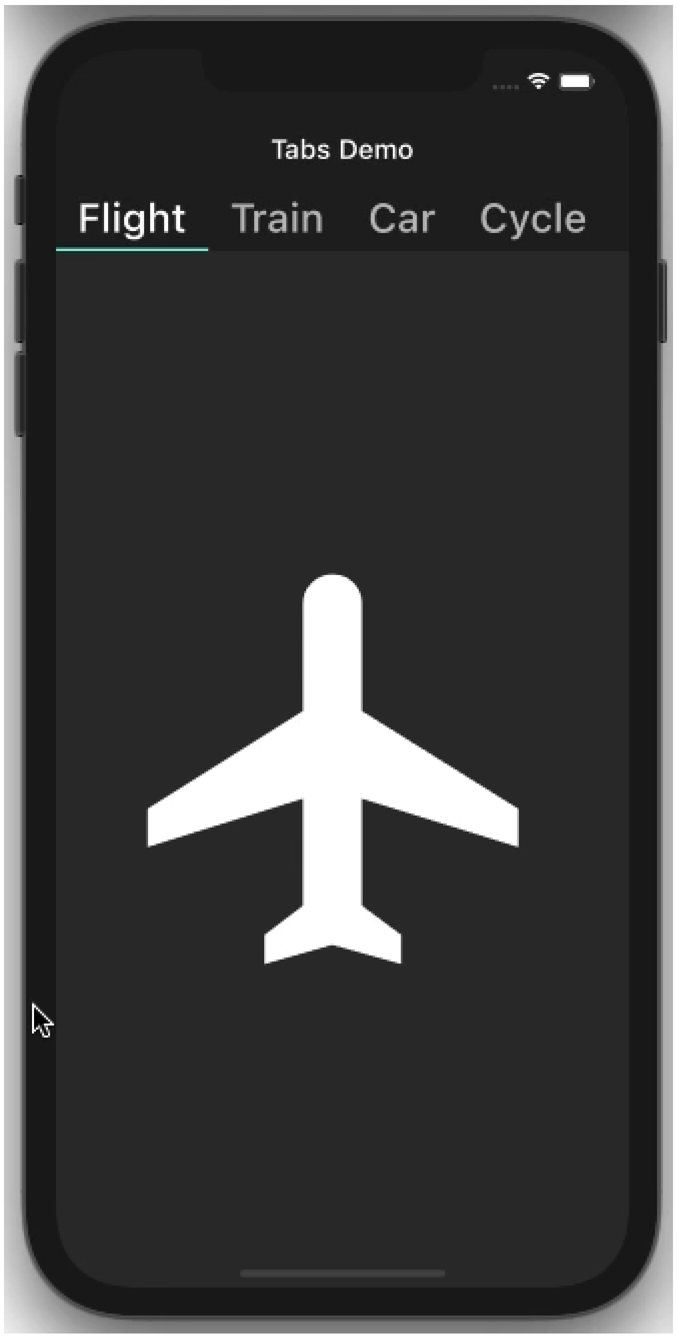
The TabBar widget has a property dedicated to configuring horizontally scrollable tabs. Set the `isScrollable` to `True`, and the job is done. You'll have to set it explicitly because it defaults to `False`.



```
TabBar(
  isScrollable: true,
  tabs: [
    ...
  ],
)
```

Vertically scrollable tabs with AppBar

You should always strive to improve the user experience of your app. Most users appreciate it if you make the TabBar go away and hide the AppBar when it's not needed. When a user wants to see more content in a specific category by scrolling up, the AppBar is hidden, creating more space to layout the content:



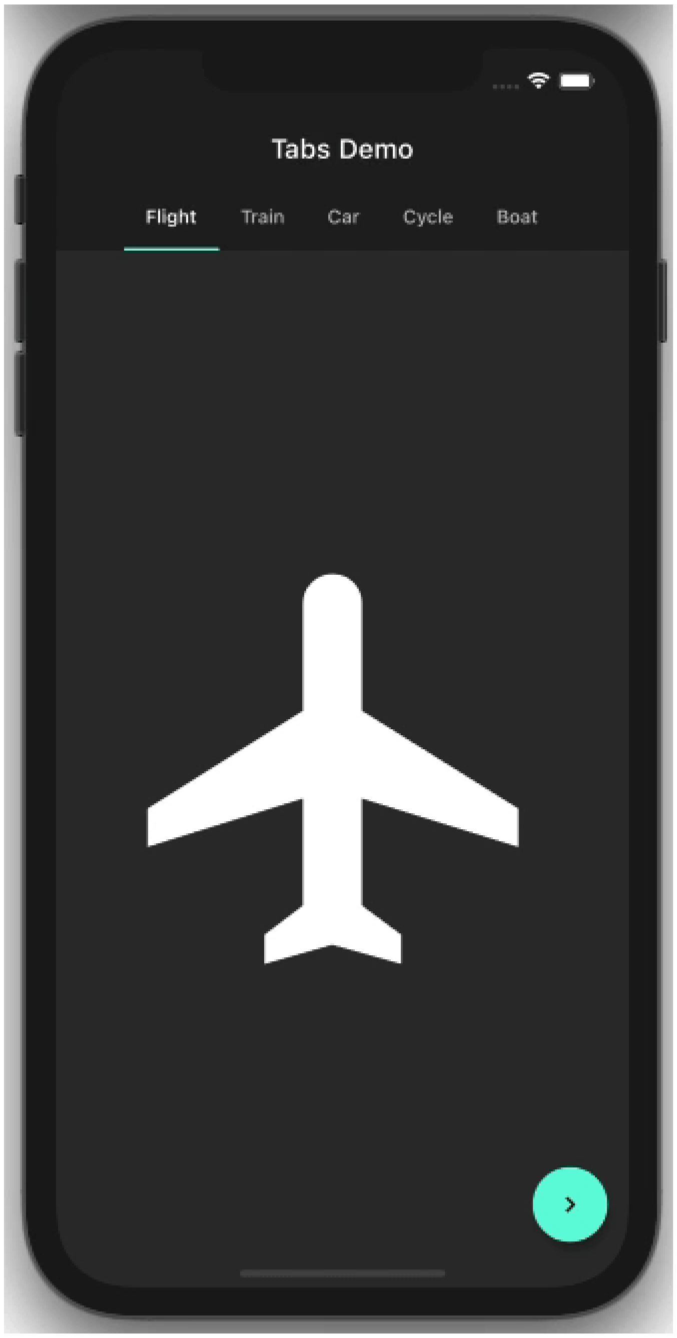
```
DefaultTabController(
    length: 5,
    child: Scaffold(
        body: NestedScrollView(
      headerSliverBuilder: (BuildContext context,
bool innerBoxIsScrolled) {
        return &lt;Widget&gt;[
          new SliverAppBar(
            title: Text('Tabs Demo'),
            pinned: true,
            floating: true,
            bottom: TabBar(
              isScrollable: true,
              tabs: [
                Tab(child: Text('Flight')),
                Tab(child: Text('Train')),
                Tab(child: Text('Car')),
                Tab(child: Text('Cycle')),
                Tab(child: Text('Boat')),
              ],
            ),
          ),
        ];
      },
      body: TabBarView(
        children: &lt;Widget&gt;[
          Icon(Icons.flight, size: 350),
          Icon(Icons.directions_transit, size:
350),
          Icon(Icons.directions_car, size: 350),
          Icon(Icons.directions_bike, size: 350),
          Icon(Icons.directions_boat, size: 350),
        ],
      ),
    )),
  );
```

All you need to do is replace the AppBar with SliverAppBar and wrap it inside the `NestedScrollView`. But to prevent TabBar from going off the screen, set the `pinned` and `floating` flags to `true`.

Changing tabs programmatically

Most of the time, we need more than just a basic TabBar. Let's see some practical examples where changing the tab programmatically and being able to listen to the Tab change event is crucial for the app.

Sometimes you may need to move to the next tab with the click of a button. Here's how you do that.



Create and assign TabController:

```
 TabController _controller;
 int _selectedIndex = 0;
 @override
 void initState() {
   super.initState();
   _controller = TabController(length: 5, vsync:
this);
 }
 @override
 void dispose() {
   _controller.dispose();
   super.dispose();
 }
 //Assign here
 bottom: TabBar(
   controller: _controller,
   isScrollable: true,
   tabs: [... ],
 ),
 // And here
 body: TabBarView(
   controller: _controller,
   children: &lt;Widget&gt;[... ],
   //controller: _tabController,
 ),
```

Use the `TabController` to move to the next page with the click of a button:

```
onPressed: () {
  _controller.animateTo(_selectedIndex += 1);
},
```

Listening for tab change event

You may want to perform some operations when a specific tab is open. This callback comes in handy when you want to perform initialize something again when a particular tab is open or destroy something when the tab is not open.

```
 @override
 void initState() {
   // TODO: implement initState
   super.initState();
   _controller = TabController(length: 5, vsync:
this);
   _controller.addListener(() {
     setState(() {
       _selectedIndex = _controller.index;
     });
     print("Selected Index: " +
_controller.index.toString());
   });
 }
```

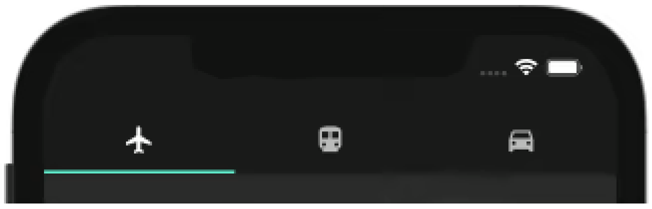
Tip: If you implement `onTap` of TabBar for the tab change event, like this:

```
 bottom: TabBar(onTap: (){
 },
```

…you won't get a callback when you swipe the tab bar with your finger. That's why it's always better to add a listener to get notified.

How to implement TabBar without AppBar

So far, we've seen AppBar with TabBar, but let's say you want to completely get rid of AppBar. Here's how to do that.



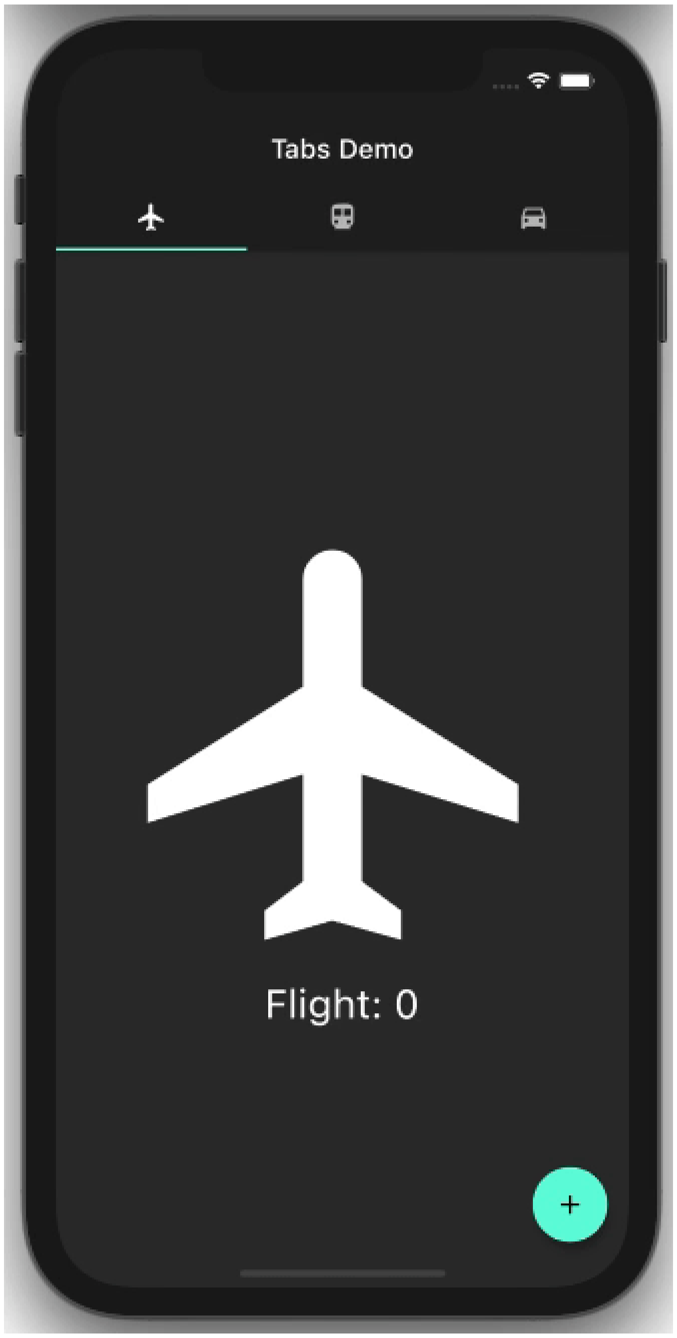
```
DefaultTabController(
  length: 3,
  child: Scaffold(
    appBar: AppBar(
      flexibleSpace: Column(
        mainAxisAlignment: MainAxisAlignment.end,
        children: [
          TabBar(
            tabs: [...],
          )
        ],
      ),
    ),
    body: TabBarView(
      children: [...],
    ),
  ),
);
```

All you need to do is replace the `title` and `bottom` properties of AppBar with `flexibleSpace` and create a column inside it containing the actual TabBar.

Preserving the state of tabs

By default, tabs do not preserve the state. For example, when you scroll and move to the next tab and then return, the previous tab will not show the content you left while scrolling; it will start from the first. This makes for a poor user experience.

Let’s explore how to resolve this issue (watch the counts carefully in this example):



Provide the mixin to the class:

```
 class _FlightPageState extends
State&lt;FlightPage&gt;
     with
AutomaticKeepAliveClientMixin&lt;FlightPage&gt; {
```

Override the getter:

```
  @override
  bool get wantKeepAlive = true;
```

That's it!

Conclusion

In this tutorial, we reviewed all the basics of the TabBar class in Flutter. We learned what TabBar is, how it works, and how to solve common issues you might encounter along your Flutter journey. I hope the practical examples we examined in this article helped you learn these important concepts.

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