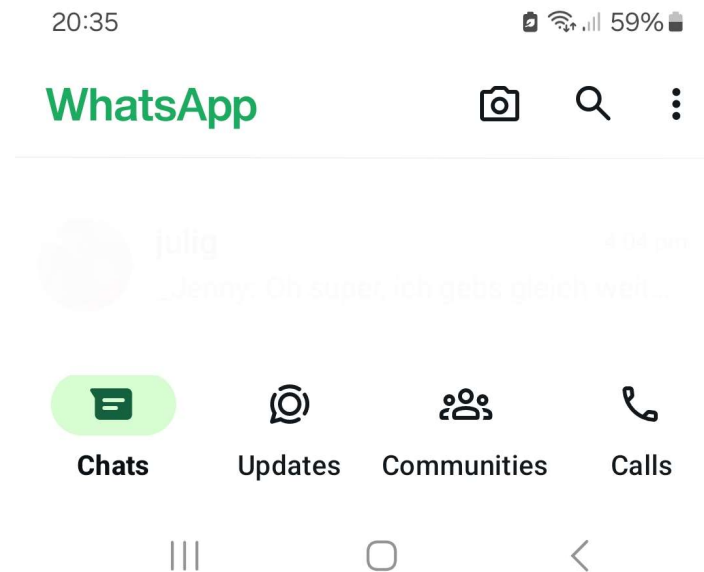




Goal: Create a bottom navigation bar like in WhatsApp





Bottom navigation bar

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flutter navigation bar

In Flutter, a navigation bar allows users to switch between different pages or sections of an app. Depending on the use case, you can implement different types of navigation bars:

1. **BottomNavigationBar** (For Bottom Tabs)

Used to navigate between a few top-level views.

```
class _BottomNavBarState extends State<BottomNavBar> {  
  int _selectedIndex = 0;  
  
  static const List<Widget> _pages = [  
    Center(child: Text('Home Page')),  
    Center(child: Text('Search Page')),  
    Center(child: Text('Profile Page')),  
  ];  
}
```

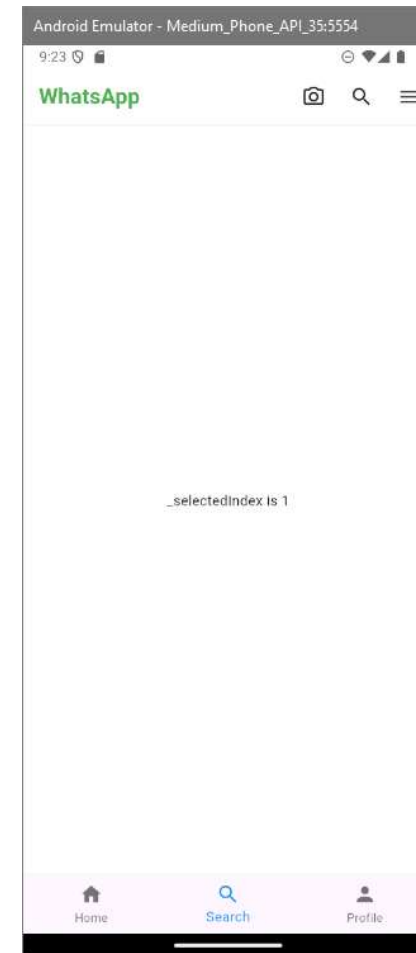
```
void _onItemTapped(int index) {  
  setState(() {  
    _selectedIndex = index;  
  });  
}
```

```
Widget build(BuildContext context) {  
  return Scaffold(  
    body: _pages[_selectedIndex],  
    bottomNavigationBar: BottomNavigationBar(  
      items: [  
        BottomNavigationBarItem(icon: Icon(Icons.home), label: "Home"),  
        BottomNavigationBarItem(icon: Icon(Icons.search), label: "Search"),  
        BottomNavigationBarItem(icon: Icon(Icons.person), label: "Profile"),  
      ],  
      currentIndex: _selectedIndex,  
      onTap: _onItemTapped,  
      selectedItemColor: Colors.blue,  
    ),  
  );  
}
```



Copy ChatGPT code for BottomNavigationBar

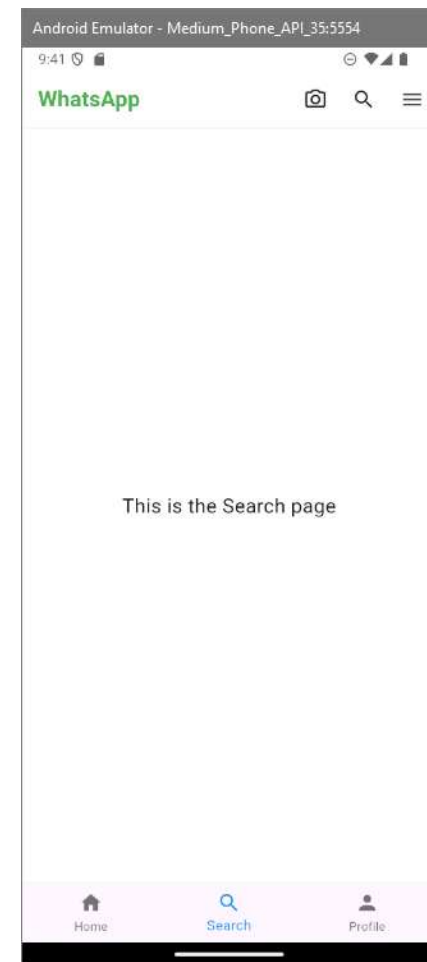
```
class MyHomePageState extends State<MyHomePage> {  
  int _selectedIndex = 0;  
  
  body: Center(  
    child: Column(  
      mainAxisAlignment: MainAxisAlignment.center,  
      children: <Widget>[  
        Text(  
          '_selectedIndex is $_selectedIndex',  
        ), // Text  
      ], // <Widget>[]  
    ), // Column  
  ), // Center  
  
  bottomNavigationBar: BottomNavigationBar(  
    items: const [  
      BottomNavigationBarItem(icon: Icon(Icons.home), label: 'Home'),  
      BottomNavigationBarItem(icon: Icon(Icons.search), label: 'Search'),  
      BottomNavigationBarItem(icon: Icon(Icons.person), label: 'Profile'),  
    ],  
    currentIndex: _selectedIndex,  
    selectedItemColor: Colors.blue,  
    onTap: (value) {  
      setState(() {  
        _selectedIndex = value;  
      });  
    },  
  ), // BottomNavigationBar  
); // Scaffold
```



Alternative 1 for changing the body (Collection if)



```
body: Center(  
  child: Column(  
    mainAxisAlignment: MainAxisAlignment.center,  
    children: <Widget>[  
      // solution with "collection if"  
      if (_selectedIndex == 0)  
        const Text("This is the Home page",  
          style: TextStyle(fontSize: 20)), // Text  
      if (_selectedIndex == 1)  
        const Text("This is the Search page",  
          style: TextStyle(fontSize: 20)), // Text  
      if (_selectedIndex == 2)  
        const Text("This is the Profile page",  
          style: TextStyle(fontSize: 20)), // Text  
    ], // <Widget>[]  
  ), // Column  
, // Center  
bottomNavigationBar: BottomNavigationBar(  
  items: const [  
    BottomNavigationBarItem(icon: Icon(Icons.home), label: 'Home'),  
    BottomNavigationBarItem(icon: Icon(Icons.search), label: 'Search'),  
    BottomNavigationBarItem(icon: Icon(Icons.person), label: 'Profile'),  
  ],  
  currentIndex: _selectedIndex,
```





Collection if in Dart

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dart collection if statement

In Dart, you can use `if` statements inside collection literals (like lists, sets, and maps) to conditionally include elements. This feature, called **collection if**, makes it easy to build dynamic collections.

Example Usage

1. Using `if` in a List

```
dart

void main() {
  bool addExtra = true;

  List<int> numbers = [
    1,
    2,
    3,
    if (addExtra) 4, // Conditionally adding an element
  ];

  print(numbers); // Output: [1, 2, 3, 4]
}
```

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✎ Edit





Alternative 2: proposal of ChatGPT

```
class _BottomNavBarState extends State<BottomNavBar> {  
  int _selectedIndex = 0;  
  
  static const List<Widget> _pages = [  
    Center(child: Text('Home Page')),  
    Center(child: Text('Search Page')),  
    Center(child: Text('Profile Page')),  
  ];  
}
```

```
Widget build(BuildContext context) {  
  return Scaffold(  
    body: _pages[_selectedIndex],  
    bottomNavigationBar: BottomNavigationBar(  
      items: [  
        BottomNavigationBarItem(icon: Icon(Icons.home), label: "Home"),  
        BottomNavigationBarItem(icon: Icon(Icons.search), label: "Search"),  
        BottomNavigationBarItem(icon: Icon(Icons.person), label: "Profile"),  
      ],  
      currentIndex: _selectedIndex,  
    ),  
  );  
}
```

```
class _MyHomePageState extends State<MyHomePage> {  
  int _selectedIndex = 0;  
  
  final List<Widget> _pages = [  
    const Text("This is the Home page", style: TextStyle(fontSize: 20)),  
    const Text("This is the Search page", style: TextStyle(fontSize: 20)),  
    const Text("This is the Profile page", style: TextStyle(fontSize: 20)),  
  ];  
}
```

```
body: Center(child: _pages[_selectedIndex]),  
bottomNavigationBar: BottomNavigationBar(  
  items: const [  
    BottomNavigationBarItem(icon: Icon(Icons.home), label: 'Home'),  
    BottomNavigationBarItem(icon: Icon(Icons.search), label: 'Search'),  
    BottomNavigationBarItem(icon: Icon(Icons.person), label: 'Profile'),  
  ],  
  currentIndex: _selectedIndex,  
),
```

Center widget might be removed. This depends on the layout of the Home/Search/Profile pages.



Exercise

Play around with icons and the properties of BottomNavigationBar to make it look a bit more like the one of WhatsApp
(the green background of the selected item is an “extra challenge”,
your goal in this exercise is this).



The original nav. bar
w/o “Communities”



Current version
before this exercise



With default iconSize (24)



Hint: set iconSize to 34



“extra challenge”



“Basic” solution

```
bottomNavigationBar: BottomNavigationBar(  
  backgroundColor: Colors.white,  
  iconSize: 34,  
  selectedItemColor: Colors.black,  
  unselectedItemColor: Colors.black,  
  selectedLabelStyle:  
    const TextStyle(fontSize: 19, fontWeight: FontWeight.bold),  
  unselectedLabelStyle: const TextStyle(fontSize: 19),  
  items: const [  
    BottomNavigationBarItem(icon: Icon(Icons.chat_sharp), label: 'Chats'),  
    BottomNavigationBarItem(  
      icon: Icon(Icons.update_sharp), label: 'Updates'), // BottomNavigationBarItem  
    BottomNavigationBarItem(  
      icon: Icon(Icons.call_outlined), label: 'Calls'), // BottomNavigationBarItem  
  ],  
  currentIndex: _selectedIndex,
```



“extra challenge”



```
items: const [
  BottomNavigationBarItem(
    label: 'Chats',
    icon: NavigationBarItem(
      icon: Icon(Icons.chat_outlined),
      isActive: false,
    ), // NavigationBarItem
    activeIcon: NavigationBarItem(
      icon: Icon(Icons.chat_sharp),
      isActive: true,
    ), // NavigationBarItem // BottomNavigationBarItem
  ),
  BottomNavigationBarItem(
    label: 'Updates',
    icon: NavigationBarItem(
      icon: Icon(Icons.update_outlined),
      isActive: false,
    ), // NavigationBarItem
    activeIcon: NavigationBarItem(
      icon: Icon(Icons.update_sharp),
      isActive: true,
    ), // NavigationBarItem // BottomNavigationBarItem
  ),
  BottomNavigationBarItem(
    label: 'Calls',
    icon: NavigationBarItem(
      icon: Icon(Icons.call_outlined),
      isActive: false,
    ), // NavigationBarItem
    activeIcon: NavigationBarItem(
      icon: Icon(Icons.call_sharp),
      isActive: true,
    ), // NavigationBarItem // BottomNavigationBarItem
  ),
],
```

```
class NavigationBarItem extends StatelessWidget {
  const NavigationBarItem({
    required this.icon,
    required this.isActive,
    super.key,
  });

  final Widget icon;
  final bool isActive;

  @override
  Widget build(BuildContext context) {
    return Container(
      padding: const EdgeInsets.symmetric(vertical: 4, horizontal: 25),
      margin: const EdgeInsets.only(bottom: 6),
      decoration: BoxDecoration(
        color: isActive ? const Color.fromARGB(144, 164, 247, 108) : null,
        borderRadius: BorderRadius.circular(20), // Rounded corners
      ), // BoxDecoration
      child: icon); // Container
  }
}
```



Chats



Updates



Calls



Chats



Updates



Calls

Adding a 4th item



```
BottomNavigationBarItem(  
  label: 'Updates',  
  icon: NavigationBarItem(  
    icon: Icon(Icons.update_outlined),  
    isActive: false,  
  ), // NavigationBarItem  
  activeIcon: NavigationBarItem(  
    icon: Icon(Icons.update_sharp),  
    isActive: true,  
  ), // NavigationBarItem // BottomNavigationBarItem  
BottomNavigationBarItem(  
  label: 'Communities',  
  icon: NavigationBarItem(  
    icon: Icon(Icons.groups_3_outlined),  
    isActive: false,  
  ), // NavigationBarItem  
  activeIcon: NavigationBarItem(  
    icon: Icon(Icons.groups_3_sharp),  
    isActive: true,  
  ), // NavigationBarItem // BottomNavigationBarItem  
BottomNavigationBarItem(  
  label: 'Calls',  
  icon: NavigationBarItem(  
    icon: Icon(Icons.call_outlined),  
    isActive: false,  
  ), // NavigationBarItem  
  activeIcon: NavigationBarItem(  
    icon: Icon(Icons.call_sharp),  
    isActive: true,  
  ), // NavigationBarItem // BottomNavigationBarItem
```





Adding a 4th item

```
bottomNavigationBar: BottomNavigationBar(  
  // backgroundColor: Colors.white,  
  // iconSize: 34,  
  // selectedItemColor: Colors.black,  
  // unselectedItemColor: Colors.black,  
  // selectedLabelStyle:  
  //   const TextStyle(fontSize: 19, fontWeight: FontWeight.bold),  
  // unselectedLabelStyle: const TextStyle(fontSize: 19),  
  items: const [  
    BottomNavigationBarItem(  
      label: 'Chats',  
      icon: NavigationBarItem(  
        icon: Icon(Icons.chat_outlined),  
        isActive: false,  
      ), // NavigationBarItem  
      activeIcon: NavigationBarItem(  
        icon: Icon(Icons.chat_sharp),  
        isActive: true,  
      ), // NavigationBarItem // BottomNavigationBarItem  
    BottomNavigationBarItem(  
      label: 'Updates',  
      icon: NavigationBarItem(  
        icon: Icon(Icons.update_outlined),  
        isActive: false,  
      ), // NavigationBarItem  
      activeIcon: NavigationBarItem(  
        icon: Icon(Icons.update_sharp),  
        isActive: true,  
      ), // NavigationBarItem // BottomNavigationBarItem  
    BottomNavigationBarItem(  
      label: 'Communities',
```

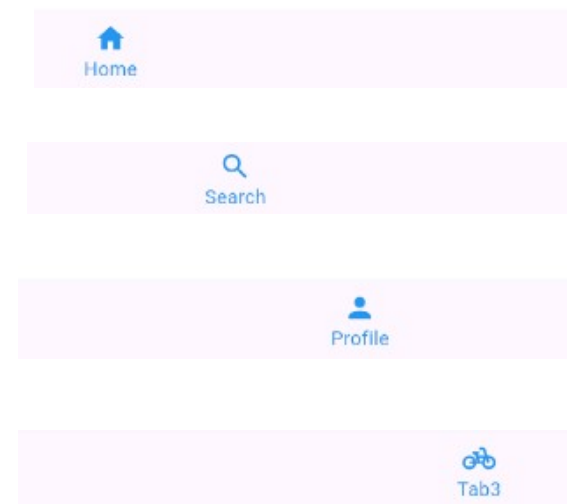
When the properties of BottomNavigationBar are not set, you can detect the selected item only by the green background:



Similar behavior for a very simple NavigationBar



```
bottomNavigationBar: BottomNavigationBar(  
  items: const [  
    BottomNavigationBarItem(icon: Icon(Icons.home), label: 'Home'),  
    BottomNavigationBarItem(icon: Icon(Icons.search), label: 'Search'),  
    BottomNavigationBarItem(icon: Icon(Icons.person), label: 'Profile'),  
    BottomNavigationBarItem(icon: Icon(Icons.pedal_bike), label: 'Tab3'),  
  ],  
  currentIndex: _selectedIndex,  
  selectedItemColor: Colors.blue,  
  onTap: (value) {  
    setState(() {  
      _selectedIndex = value;  
    });  
  },  
), // BottomNavigationBar
```





BottomNavigationBarType

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Explain Flutter's BottomNavigationBarType

In Flutter, the `BottomNavigationBarType` is an enum that determines the behavior and appearance of a `BottomNavigationBar`. It has two values:

1. `BottomNavigationBarType.fixed`
 - Used when there are **four or fewer** items in the `BottomNavigationBar`.
 - All items have equal space, and their labels are always visible.
 - Default if the number of items is four or fewer.
2. `BottomNavigationBarType.shifting`
 - Used when there are **more than four** items.
 - The selected item gets a larger space, while unselected items are smaller.
 - Unselected items may not display labels unless tapped.

Use `fixed` for a consistent layout and `shifting` for a more dynamic effect when dealing with more items.



Final solution

```
bottomNavigationBar: BottomNavigationBar(  
  type: BottomNavigationBarType.fixed,  
  backgroundColor: Colors.white,  
  iconSize: 34,  
  selectedItemColor: Colors.black,  
  unselectedItemColor: Colors.black,  
  selectedLabelStyle:  
    const TextStyle(fontSize: 16, fontWeight: FontWeight.bold),  
  unselectedLabelStyle: const TextStyle(fontSize: 16),  
  items: const [  
    BottomNavigationBarItem(  
      label: 'Chats',  
      icon: NavigationBarItem(  
        icon: Icon(Icons.chat_outlined),  
        isActive: false,  
      ), // NavigationBarItem  
      activeIcon: NavigationBarItem(  
        icon: Icon(Icons.chat_sharp),  
        isActive: true,  
      ), // NavigationBarItem // BottomNavigationBarItem  
    ),  
    BottomNavigationBarItem(  
      label: 'Updates',  
      icon: NavigationBarItem(  
        icon: Icon(Icons.update_outlined),  
        isActive: false,  
      ), // NavigationBarItem  
      activeIcon: NavigationBarItem(  
        icon: Icon(Icons.update_sharp),  
        isActive: true,  
      ), // NavigationBarItem // BottomNavigationBarItem  
    ),  
    BottomNavigationBarItem(  
      label: 'Communities',  
      icon: NavigationBarItem(  
        icon: Icon(Icons.people_outline),  
        isActive: false,  
      ), // NavigationBarItem  
      activeIcon: NavigationBarItem(  
        icon: Icon(Icons.people_sharp),  
        isActive: true,  
      ), // NavigationBarItem // BottomNavigationBarItem  
    ),  
    BottomNavigationBarItem(  
      label: 'Calls',  
      icon: NavigationBarItem(  
        icon: Icon(Icons.phone_outlined),  
        isActive: false,  
      ), // NavigationBarItem  
      activeIcon: NavigationBarItem(  
        icon: Icon(Icons.phone_sharp),  
        isActive: true,  
      ), // NavigationBarItem // BottomNavigationBarItem  
    ),  
  ],  
)
```



Reduced from 19 to 16.
With 19 we had:

