

# EXPERIMENT NO: - 03

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**AIM: -** To include icons, images, fonts in Flutter app.

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## Theory: -

### **Incorporating Visual Elements in Flutter: Icons, Images, and Custom Fonts**

Flutter is a powerful open-source UI framework that enables developers to build natively compiled applications for mobile, web, and desktop platforms—all from a single codebase. One of Flutter's greatest strengths is its flexibility in crafting highly customizable UIs.

This practical guide focuses on integrating essential visual elements—icons, images, and custom fonts—into a Flutter application. These elements enhance visual appeal, improve usability, and create a more engaging user experience.

### **Importance of Visual Elements in App Development**

- **Enhanced User Experience** – Icons and images make applications more visually appealing and user-friendly.
  - **Efficient Communication** – Well-designed icons convey information quickly, reducing the need for lengthy text.
  - **Brand Identity** – Custom icons and images reinforce branding, making an app more memorable.
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### **Managing Assets in a Flutter App**

When a Flutter app is built, it consists of both code and assets. **Assets** include static files such as images, icons, fonts, and configuration files, which are deployed and available at runtime. Flutter supports multiple image formats, including **JPEG, WebP, PNG, GIF, BMP, and WBMP**.

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### **Adding Icons in Flutter**

Flutter provides built-in **Material Design icons** through the Icons class. Custom icons can also be integrated using third-party packages like `flutter_launcher_icons` and `font_awesome_flutter`.

### **Example (Built-in Material Icons):**

```
Icon(  
  Icons.home,  
  size: 40,  
);
```

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## Adding Images in Flutter

Flutter supports images from three primary sources: **Assets, Network, and Local Storage (Memory or File System)**.

### 1. Using Asset Images (Local Project Files)

To use an image stored in the project folder:

- Place the image inside the assets/images/ folder.
- Declare it in pubspec.yaml:

```
flutter:  
  assets:  
    - assets/images/sample.png  
    • Display it in the app:
```

```
Image.asset('assets/images/sample.png');
```

---

### 2. Using Network Images (Fetched from the Internet)

Flutter simplifies loading images from the web using Image.network. Additional properties like height, width, fit, and color can be specified.

**Example:**

```
Image.network('https://example.com/sample.jpg');
```

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### 3. Using Local Storage (Memory or File System)

Images stored on the user's device can also be displayed using packages like image\_picker or file\_picker.

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## Adding Custom Fonts in Flutter

By default, Flutter uses the **Roboto** font. However, custom fonts can be added to create a unique visual identity.

**Steps to Add a Custom Font:**

1. **Download the font** and place it in the assets/fonts/ folder.
2. **Declare the font** in pubspec.yaml:

yaml

```
flutter:  
  fonts:  
    - family: CustomFont  
      fonts:  
        - asset: assets/fonts/CustomFont.ttf
```

### 3. Use the font in your app

```
Text(  
  'Custom Font Example',  
  style: TextStyle(fontFamily: 'CustomFont', fontSize: 24),  
);
```

Code: -  
**bottom\_bar\_nav.dart**

```
import 'package:flutter/material.dart';  
import  
'package:movflix/screens/download_screen.dart';  
import 'package:movflix/screens/homescreen.dart';  
import 'package:movflix/screens/news_and_hot.dart';  
import 'package:movflix/screens/search_screen.dart';
```

```
class BottomNavBar extends StatelessWidget {  
  const BottomNavBar({super.key});
```

```
  @override
```

```
  Widget build(BuildContext context) {
```

```
    return DefaultTabController(  
      length: 4,
```

```
      child: Scaffold(  
        bottomNavigationBar: Container(  
          color: Colors.black,
```

```
          height: 70,
```

```
          child: const TabBar(  
            tabs: [  
              Tab(  
                icon: Icon(Icons.home),  
                text: "Home",
```

```
            ),  
              Tab(  
                icon: Icon(Icons.search),  
                text: "Search",
```

```
            ),  
              Tab(  
                icon: Icon(Icons.photo_library_outlined),  
                text: "New & Hot",
```

```
            ),  
              Tab(  
                icon: Icon(Icons.download),  
                text: "Downloads",
```

```
            ),  
          ],  
          unselectedLabelColor: Color(0xFF999999),  
          labelColor: Colors.white,  
          indicatorColor: Colors.transparent,
```

```
        ),
```

```
      ),  
      body: const TabBarView(  
        children: [  
          HomeScreen(),  
          SearchScreen(),  
          MoreScreen(),  
          DownloadScreen()
```

```
        ],  
      ),  
    ),  
  ),
```

## On\_boarding\_screen.dart

```
import 'package:flutter/material.dart';
import
'package:movflix/entities/on_boarding_entity.dart';
import 'package:movflix/pages/sign_in_page.dart';
import 'package:movflix/widgets/header_widget.dart';
```

```
class OnBoardingScreen extends StatefulWidget {
  @override
  _OnBoardingScreenState createState() =>
  _OnBoardingScreenState();
}
```

```
class _OnBoardingScreenState extends
State<OnBoardingScreen> {
  final _onBoardingData =
OnBoardingEntity.onBoardingData;
  int _currentPageIndex = 0;
```

```
@override
Widget build(BuildContext context) {
  return Scaffold(
    body: Stack(
      children: [
        _pageViewBuilderWidget(),
        _columnWidget(),
        HeaderWidget(),
      ],
    ),
  );
}
```

```
Widget _pageViewBuilderWidget() {
  return PageView.builder(
    itemCount: _onBoardingData.length,
    onPageChanged: (index) {
      setState() {
        _currentPageIndex = index;
      });
    },
    itemBuilder: (ctx, index) {
      return Stack(
        fit: StackFit.passthrough,
        children: [
          index == 3
            ? Container(
                height: double.infinity,
                child: Image.asset(
                  _onBoardingData[index].image,
                  fit: BoxFit.cover,
                ),
            )
```

```
: Container(
    margin: EdgeInsets.only(bottom: 40),
    child: Image.asset(
      _onBoardingData[index].image,
    ),
  ),
  index == 3
    ? Container(
        decoration: BoxDecoration(
          gradient: LinearGradient(
            colors: [
              Colors.black.withOpacity(.5),
              Colors.black.withOpacity(.1),
              Colors.black.withOpacity(.9),
            ],
            tileMode: TileMode.clamp,
            begin: Alignment(0.9, 0.0),
            end: Alignment(0.8, 0.4)),
        ),
      )
    : Container(),
  Container(
    margin: EdgeInsets.only(top: 230, left: 40,
right: 40),
    child: Column(
      mainAxisAlignment:
MainAxisAlignment.center,
      children: [
        Text(
          _onBoardingData[index].heading,
          style: TextStyle(fontSize: 22),
          textAlign: TextAlign.center,
        ),
        SizedBox(
          height: 20,
        ),
        Text(
          _onBoardingData[index].description,
          style: TextStyle(fontSize: 16),
          textAlign: TextAlign.center,
        ),
      ],
    ),
  ),
);
},
);
}
```

```
Widget _columnWidget() {
  return Align(
    alignment: Alignment.bottomCenter,
    child: Column(
```

```

        mainAxisAlignment: MainAxisAlignment.end,
        children: [
          Container(
            child: Row(
              mainAxisAlignment:
MainAxisAlignment.center,
              children: _onBoardingData.map(
                (data) {
                  //get index
                  int index =
_onBoardingData.indexOf(data);
                  return Container(
                    height: 10,
                    width: 10,
                    margin: EdgeInsets.all(5),
                    decoration: BoxDecoration(
                      color:
Colors.red : Colors.grey,
                      borderRadius: BorderRadius.all(
                        Radius.circular(20),
                      ),
                    ),
                  );
                },
              ).toList(),
            ),
          ),
          SizedBox(
            height: 20,
          ),
          InkWell(
            onTap: () {
              Navigator.push(
                context,
                MaterialPageRoute(builder: (context) =>
SignInPage()),
              );
            },
            child: Container(
              margin: EdgeInsets.only(bottom: 10, right:
15, left: 15),
              padding: EdgeInsets.symmetric(vertical: 12),
              width: double.infinity,
              alignment: Alignment.center,
              decoration: BoxDecoration(
                borderRadius: BorderRadius.all(
                  Radius.circular(5),
                ),
                color: Colors.red,
              ),
              child: Text("GET STARTED"),
            ),
          ),
        ],
      ),
    ],
  ),
);
}
}

```

## Pubspec.yaml

cupertino\_icons: ^1.0.2

flutter:

assets:

- assets/logo.png
- assets/n\_symbol.png
- assets/background.png
- assets/contract.png
- assets/devices.png
- assets/download.png
- assets/



