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**MPL - 3**

**AIM**:- To add advanced Flutter UI by including widgets like Image, Fonts, Icons.

**THEORY**:-

Flutter provides robust mechanisms for working with images, fonts, and icons in your app's user interface. Here's a summary of their functionalities and considerations:

**Images:**

● **Loading and Displaying:** Use the Image widget to load and display images from various sources like assets, network URLs, or files. Adjust properties like fit, alignment, and opacity for customization.

● **Asset Management:** Store images within your app's assets directory (usually under assets/images/). Flutter automatically handles different screen resolutions and densities.

● **Network Images:** Use the Image.network constructor to directly load images from URLs. Ensure proper internet connectivity and consider caching mechanisms for efficiency.

● **Caching and Performance:** Flutter automatically caches downloaded images. For complex scenarios, explore advanced caching libraries like cached_network_image.

**Fonts:**

● **Using System Fonts:** Access system fonts available on the device using the Text widget's fontFamily property.

● **Custom Fonts:** Include custom fonts in your app's pubspec.yaml file and integrate them using the GoogleFonts package or by loading font files manually.

● **Font Styling:** Control font properties like size, weight, color, and more using the TextStyle class within the Text widget.

● **Text Layouts and Effects:** Flutter offers rich text editing and layout features. Explore properties like textAlign, overflow, and textSpan for advanced text formatting and effects.

**Icons:**

● **Material Icons**: Flutter provides built-in access to a vast collection of Material Design icons through the Icons class. Use them with the Icon widget for simple icon display.

● **Custom Icons:** You can create custom vector icons or use icon fonts. Popular packages like flutter_icons and font_awesome_flutter provide diverse icon sets.

● **Icon Styling**: Modify icons' colors, sizes, and other properties directly through the Icon widget's parameters

● **Animations and Interactions:** Integrate icon animations and interactions using gestures, animations, and state management techniques.

```dart
import 'package:flutter/material.dart';

void main() {
  runApp(const HealthApp());
}

class HealthApp extends StatelessWidget {
  const HealthApp({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Health App Dashboard',
      theme: ThemeData(
        primarySwatch: Colors.green,
      ),
      home: const Dashboard(),
    );
  }
}

class Dashboard extends StatelessWidget {
```

```dart
  const Dashboard({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text('Health App Dashboard'),
        backgroundColor: const Color.fromARGB(255, 99, 91, 209),
        leading: Image.asset(
          'health.png', // Replace 'health.png' with the actual
path to your image asset
          width: 40,
          height: 40,
        ),
      ),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.stretch,
          children: <Widget>[
            buildCard(
              context,
              title: 'BMI Calculator',
              icon: Icons.calculate,
              onTap: () {
                // Navigate to BMI Calculator page
              },
            ),
            const SizedBox(height: 10),
            buildCard(
              context,
              title: 'Exercise Tracker',
              icon: Icons.directions_run,
              onTap: () {
```

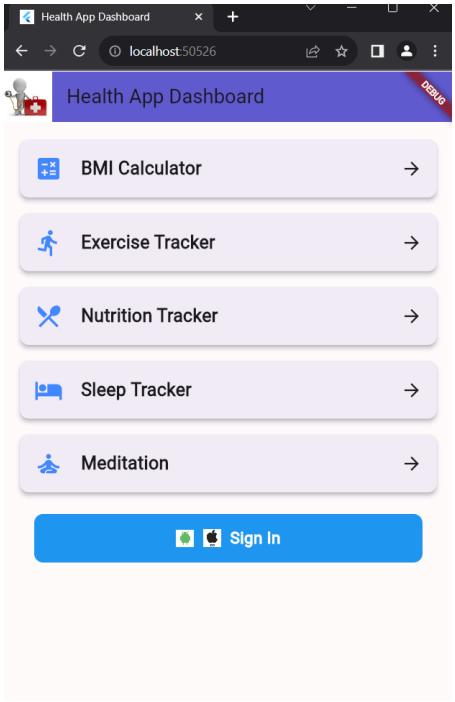
```
              // Navigate to Exercise Tracker page
            },
          ),
          const SizedBox(height: 10),
          buildCard(
            context,
            title: 'Nutrition Tracker',
            icon: Icons.restaurant_menu,
            onTap: () {
              // Navigate to Nutrition Tracker page
            },
          ),
          const SizedBox(height: 10),
          buildCard(
            context,
            title: 'Sleep Tracker',
            icon: Icons.hotel,
            onTap: () {
              // Navigate to Sleep Tracker page
            },
          ),
          const SizedBox(height: 10),
          buildCard(
            context,
            title: 'Meditation',
            icon: Icons.self_improvement,
            onTap: () {
              // Navigate to Meditation page
            },
          ),
          const SizedBox(height: 20),
          Container(
            margin: const EdgeInsets.symmetric(horizontal:
20),
```

```
              decoration: BoxDecoration(
                color: Colors.blue,
                borderRadius: BorderRadius.circular(10),
              ),
              child: Material(
                color: Colors.transparent,
                child: InkWell(
                  onTap: () {
                    // Sign in action
                  },
                  borderRadius: BorderRadius.circular(10),
                  child: Container(
                    padding: const
EdgeInsets.symmetric(vertical: 14),
                    alignment: Alignment.center,
                    child: Row(
                      mainAxisAlignment:
MainAxisAlignment.center,
                      children: [
                        Image.asset(
                          'android.png', // Replace
'android.png' with the actual path to your Android image asset
                          width: 20,
                          height: 20,
                        ),
                        const SizedBox(width: 10),
                        Image.asset(
                          'ios.png', // Replace 'ios.png' with
the actual path to your iOS image asset
                          width: 20,
                          height: 20,
                        ),
                        const SizedBox(width: 10),
                        const Text(
```

```
                        'Sign In',
                        style: TextStyle(
                          color: Colors.white,
                          fontSize: 18,
                          fontWeight: FontWeight.bold,
                        ),
                      ),
                    ],
                  ),
                ),
              ),
            ),
          ],
        ),
      ),
    );
  }

  Widget buildCard(BuildContext context,
      {required String title,
      required IconData icon,
      required VoidCallback onTap}) {
    return InkWell(
      onTap: onTap,
      child: Card(
        elevation: 4,
        shape: RoundedRectangleBorder(borderRadius:
BorderRadius.circular(10)),
        child: Padding(
          padding: const EdgeInsets.all(16.0),
          child: Row(
            children: [
              Icon(icon, size: 32, color: Colors.blueAccent),
```

```
              const SizedBox(width: 20),
              Text(
                title,
                style: const TextStyle(fontSize: 20, fontWeight:
FontWeight.bold),
              ),
              const Spacer(),
              const Icon(Icons.arrow_forward),
            ],
          ),
        ),
      ),
    );
  }
}
```




**Conclusion**: We have successfully added advanced Flutter UI by including widgets like Image, Fonts, Icons.