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AIM: - To design Flutter UI by including common widgets.

Theory: -

Each element on the screen of the Flutter app is a widget. The view of the screen completely depends upon the choice and sequence of the widgets used to build the apps. And the structure of the code of apps is a tree of widgets.

When you made any alteration in the code, the widget rebuilds its description by calculating the difference of previous and current widget to determine the minimal changes for rendering in UI of the app.Widgets are nested with each other to build the app. It means the root of your app is itself a widget, and all the way down is a widget also. For example, a widget can display something, can define design, can handle interaction, etc.

The single child layout widget is a type of widget, which can have only **one child widget** inside the parent layout widget. These widgets can also contain special layout functionality. Flutter provides us many single child widgets to make the app UI attractive. If we use these widgets appropriately, it can save our time and makes the app code more readable.

The multiple child widgets are a type of widget, which contains **more than one child widget**, and the layout of these widgets are **unique**. For example, Row widget laying out of its child widget in a horizontal direction, and Column widget laying out of its child widget in a vertical direction. If we combine the Row and Column widget, then it can build any level of the complex widget.

Type of Widgetss

☐ **StatefulWidget**

A StatefulWidget has state information. It contains mainly two classes: the state object and the widget. It is dynamic because it can change the inner data during the widget lifetime. This widget does not have a build() method. It has createState() method, which returns a class that

extends the Flutters State Class. The examples of the StatefulWidget are Checkbox, Radio, Slider, InkWell, Form, and TextField.

 StatelessWidget

The StatelessWidget does not have any state information. It remains static throughout its lifecycle. The examples of the StatelessWidget are Text, Row, Column, Container, etc.

Some of the commonly used widgets

Container – A box widget used for styling with padding, margins, colors, borders, and constraints. It helps in layout structuring and positioning.

Row & Column – Used to arrange widgets in horizontal (Row) or vertical (Column) orientation. They manage spacing, alignment, and distribution of child widgets.

Stack – Overlaps widgets on top of each other, useful for creating layered UIs like banners, tooltips, or floating elements.

Text – Displays text on the screen with customizable font size, color, alignment, and styling options

Image – Loads and displays images from assets, network, or memory with scaling, fit, properties.

Scaffold – Provides a basic layout structure with an app bar, body, floating action button, and bottom navigation.

ListView – A scrollable list widget that efficiently renders large amounts of dynamic content. Supports both vertical and horizontal scrolling.

GridView – Displays widgets in a grid format, useful for galleries, product listings, or dashboards. It supports dynamic column adjustments.

SizedBox – Used to create space between widgets or define fixed width and height for layout adjustments.

ElevatedButton – A button with elevation that provides a raised effect, customizable with color, shape, and click actions.

TextField – A user input field that supports text entry, keyboard configurations, validation.

AppBar – A top navigation bar that includes a title, actions, and menu icons, commonly used in Scaffold.

BottomNavigationBar – A bar at the bottom of the screen used for navigation between different app sections with icons and labels.

Drawer – A side navigation panel that slides out from the left, typically used for app menus and quick navigation.

Card – A material design component that displays content inside a box with elevation.

Code: -

home_page.dart

```dart
import 'package:flutter/material.dart';
import 'myaccountpage.dart';
import 'pills_section.dart';
import 'crop_list_page.dart';
import 'weather_forecast_page.dart';

void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: HomePage(),
    );
  }
}

class HomePage extends StatefulWidget {
  @override
  _HomePageState createState() =>
_HomePageState();
}

class _HomePageState extends
State<HomePage> {
  int _currentIndex = 0;

  // Method to handle the bottom navigation item taps
  void _onItemTapped(int index) {
    setState(() {
      _currentIndex = index;
    });
    if (index == 1) {
      Navigator.push(
        context,
        MaterialPageRoute(builder: (context) =>
WeatherPage()),
      );
    }
    if (index == 3) {
      Navigator.push(
        context,
        MaterialPageRoute(builder: (context) =>
CropListPage()),
      );
    }
    if (index == 4) {
      Navigator.push(
        context,
        MaterialPageRoute(builder: (context) =>
MyAccountPage()),
      );
    }
  }

  // Returns the widget corresponding to the selected index
  Widget _getSelectedPage() {
    switch (_currentIndex) {
      case 0:
        return Center(child: Text('Home Page'));
      case 1:
        return Center(child: Text('Weather Page'));
      case 2:
        return Center(child: Text('Disease
Detection Page'));
      case 3:
        return Center(child: Text('Crop'));
      case 4:
        return Center(child: Text('Profile Page'));
      default:
        return Center(child: Text('Home Page'));
    }
  }
}
```

```dart
  @override
  Widget build(BuildContext context) {
   return Scaffold(
     backgroundColor: Colors.white,
     appBar: AppBar(
      backgroundColor: Colors.white,
      title: Row(
        children: [
         Image.asset('assets/images/logo.png',
height: 40), // Your logo here
         SizedBox(width: 10),
         Text('AgriApp'),
        ],
      ),
      actions: [
        IconButton(
         icon: Icon(Icons.search),
         onPressed: () {
           // Add search functionality
         },
        ),
      ],
     ),
     body: SingleChildScrollView(
      child: Column(
        children: [
         BannerSection(),
         CategorySection(),
         DealsOfTheDaySection(),
         FreeDeliverySection(),
         NewsSection(),
        ],
      ),
     ),
     bottomNavigationBar:
BottomNavigationBar(
       currentIndex: _currentIndex, // Keep track
of the selected index
       onTap: _onItemTapped, // Update the index
when an item is tapped
       selectedItemColor: Colors.black, // Color
for the selected item
       unselectedItemColor: Colors.black54, //
Color for unselected items
       type: BottomNavigationBarType.fixed, //
Ensures icons stay the same size
       items: const <BottomNavigationBarItem>[
        BottomNavigationBarItem(
          icon: Icon(Icons.home),
          label: 'Home',
        ),
        BottomNavigationBarItem(
          icon: Icon(Icons.cloud), // Weather icon
          label: 'Weather',
        ),
        BottomNavigationBarItem(
          icon: Icon(Icons.camera_alt), // Disease
detection icon
          label: 'Detect',
        ),
        BottomNavigationBarItem(
          icon: Icon(Icons.local_florist), // Crop
practices icon
          label: 'Crops',
        ),
        BottomNavigationBarItem(
          icon: Icon(Icons.account_circle), //
Profile icon
          label: 'Profile',
        ),
       ],
     ),
   );
  }
}

class BannerSection extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
   return Padding(
     padding: EdgeInsets.all(14.0),
     child: ClipRRect(
      borderRadius: BorderRadius.circular(20),
      child: Container(
        width: double.infinity,
        height: 200,
        decoration: BoxDecoration(
         image: DecorationImage(
           image:
AssetImage('assets/images/banner.jpg'),
           //fit: BoxFit.cover,
         ),
        ),
```

```dart
      ),
    ),
  );
 }
}

class CategorySection extends StatelessWidget {
 @override
 Widget build(BuildContext context) {
  return Container(
    padding: EdgeInsets.symmetric(vertical: 20),
    child: GridView.count(
     crossAxisCount: 4,
     shrinkWrap: true,
     physics: NeverScrollableScrollPhysics(),
     children: [
      CategoryItem('Offers',
'assets/images/offers.png'),
      CategoryItem('Crop Tonics',
'assets/images/crop_tonics.png'),
      CategoryItem('Fertilizer',
'assets/images/fertilizer.png'),
      CategoryItem('Pesticides',
'assets/images/pesticides.png'),
     ],
    ),
  );
 }
}

class CategoryItem extends StatelessWidget {
 final String title;
 final String imagePath; // Changed from
IconData to String

 CategoryItem(this.title, this.imagePath);

 @override
 Widget build(BuildContext context) {
  return Column(
    children: [
     Container(
      width:80,
      height:80,
      decoration: BoxDecoration(
        color: Colors.green.withAlpha(50), //
Light green background

        shape: BoxShape.circle,
      ),
      padding: EdgeInsets.all(16),
      child: Image.asset(imagePath, width:
double.infinity, height: double.infinity,
fit:BoxFit.cover), // Load image instead of icon
     ),
     SizedBox(height: 5),
     Text(title, textAlign: TextAlign.center,
style: TextStyle(fontSize: 12, fontWeight:
FontWeight.bold)),
    ],
  );
 }
}

class DealsOfTheDaySection extends
StatelessWidget {
 @override
 Widget build(BuildContext context) {
  return Container(
    padding: EdgeInsets.symmetric(vertical: 10),
    child: Column(
     crossAxisAlignment:
CrossAxisAlignment.start,
     children: [
      // Row for title and "See All" button
      Padding(
        padding: EdgeInsets.only(left: 20),
        child: Row(
         mainAxisAlignment:
MainAxisAlignment.spaceBetween,
         children: [
          Text(
           'Deals of the day!',
           style: TextStyle(fontSize: 24,
fontWeight: FontWeight.bold),
          ),
          TextButton(
           onPressed: () {
            // Navigate to All Deals screen
            Navigator.push(
             context,
             MaterialPageRoute(builder:
(context) => AllDealsScreen()),
            );
           },
```

```dart
            child: Text(
              'See All >',
              style: TextStyle(color: Colors.blue,
fontWeight: FontWeight.bold),
            ),
          ),
        ],
      ),
    ),
    SizedBox(height: 10),
    // Grid of products for Deals of the Day
    GridView.count(
      crossAxisCount: 2,
      shrinkWrap: true,
      physics: NeverScrollableScrollPhysics(),
      children: [
        ProductCard('00-00-50', '₹240.00',
'₹270.00', 'assets/images/product1.png'),
        ProductCard('12-61-00', '₹277.2',
'₹355.00', 'assets/images/product2.png'),
      ],
    ),
  ],
 ),
 );
 }
}


// Product Card widget
class ProductCard extends StatelessWidget {
  final String productName;
  final String price;
  final String originalPrice;
  final String imagePath;

  ProductCard(this.productName, this.price,
this.originalPrice, this.imagePath);

  @override
  Widget build(BuildContext context) {
   return Card(
     margin: EdgeInsets.all(8),
     //color: Colors.white, // White background
for card
     shape: RoundedRectangleBorder(
       borderRadius: BorderRadius.circular(8),
       side: BorderSide(color: Colors.grey, width:
1), // Black border
     ),
     child: Column(
       children: [
        Container(
          height: 100,
          width: 100,
          child: Image.asset(
            imagePath,
            fit: BoxFit.contain,
          ),
        ),
        Text(productName),
        Text(price, style: TextStyle(fontWeight:
FontWeight.bold)),
        Text(originalPrice, style:
TextStyle(decoration:
TextDecoration.lineThrough)),
       ],
     ),
   );
 }
}

class AllDealsScreen extends StatelessWidget {
 @override
 Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text('All Deals'),
    ),
    body: GridView.count(
      crossAxisCount: 2,
      padding: EdgeInsets.all(10),
      children: [
        // List of all product cards
        ProductCard('00-00-50', '₹240.00',
'₹270.00', 'assets/images/product1.png'),
        ProductCard('12-61-00', '₹277.2',
'₹355.00', 'assets/images/product2.png'),
        ProductCard('23-45-67', '₹500.00',
'₹600.00', 'assets/images/product3.png'),
        ProductCard('34-56-78', '₹350.00',
'₹400.00', 'assets/images/product4.png'),
        ProductCard('45-67-89', '₹220.00',
'₹280.00', 'assets/images/product5.png'),
        ProductCard('56-78-90', '₹310.00',
```

```
'₹370.00', 'assets/images/product6.png'),                    }
        ProductCard('67-89-01', '₹450.00',
'₹520.00', 'assets/images/product7.png'),
        ProductCard('78-90-12', '₹200.00',
'₹250.00', 'assets/images/product8.png'),
        ProductCard('89-01-23', '₹600.00',
'₹700.00', 'assets/images/product9.png'),
        ProductCard('90-12-34', '₹150.00',
'₹200.00', 'assets/images/product10.png'),
        ProductCard('01-23-45', '₹180.00',
'₹230.00', 'assets/images/product11.png'),
        ProductCard('12-34-56', '₹420.00',
'₹480.00', 'assets/images/product12.png'),
        // Add more ProductCard widgets here
      ],
    ),
   );
  }
}


class FreeDeliverySection extends
StatelessWidget {
 @override
 Widget build(BuildContext context) {
  return Container(
    padding: EdgeInsets.symmetric(vertical: 10),
// Vertical padding
    child: Center(
      child: Padding(
        padding:
EdgeInsets.symmetric(horizontal: 10), // Add
horizontal space (left & right)
        child: ClipRRect(
          borderRadius:
BorderRadius.circular(15), // Adjust the radius
as needed
          child: Image.asset(
            'assets/images/delivery.png',
            fit: BoxFit.cover,
          ),
        ),
      ),
    ),
   );
  }
```

add_medicine.dart

```dart
import 'package:flutter/material.dart';
import 'package:http/http.dart' as http;
import 'dart:convert';

// Define the API endpoint
const String apiKey =
"7b40c2993a264008904439ac295309b0";
const String pillsApiUrl =

"https://pillsapi.org/v2/everything?q=Agriculture
&sortBy=popularity&apiKey=7b40c2993a2640
08904439ac295309b0";

// News Section widget
class NewsSection extends StatefulWidget {
  @override
  _NewsSectionState createState() =>
_NewsSectionState();
}

class _NewsSectionState extends
State<NewsSection> {
  List<dynamic> farmingNews = [];

  @override
  void initState() {
    super.initState();
    fetchNews();
  }

  // Fetch the pills from the API
  Future<void> fetchNews() async {
    final response = await
http.get(Uri.parse(pillsApiUrl));

    if (response.statusCode == 200) {
      setState(() {
        farmingNews =
json.decode(response.body)['articles']; // Adjust
based on the response structure
      });
    } else {
      // Handle the error if the request fails
      throw Exception('Failed to load pills');
    }
  }

  @override
  Widget build(BuildContext context) {
    return SingleChildScrollView( // Wrap the
column in a scroll view
      child: Padding(
        padding: EdgeInsets.symmetric(vertical:
20),
        child: Column(
          crossAxisAlignment:
CrossAxisAlignment.start,
          children: [
            Padding(
              padding: EdgeInsets.only(left: 20),
              child: Text(
                'Latest Farming News',
                style: TextStyle(fontSize: 24,
fontWeight: FontWeight.bold),
              ),
            ),
            SizedBox(height: 10),
            // Container with horizontal scrolling for
pills
            Container(
              height: 150, // Set height for horizontal
scroll
              child: ListView.builder(
                scrollDirection: Axis.horizontal,
                itemCount: farmingNews.length > 4 ?
4 : farmingNews.length, // Limit to 4 items
                itemBuilder: (context, index) {
                  return Padding(
                    padding: EdgeInsets.only(left: 10),
                    child: Card(
                      child: Container(
                        width: 200,
```

```dart
                padding: EdgeInsets.all(8),
                child: Column(
                  crossAxisAlignment:
CrossAxisAlignment.start,
                  children: [
                    Text(
                      farmingNews[index]['title'],
                      style: TextStyle(fontWeight:
FontWeight.bold),
                      maxLines: 2,
                      overflow:
TextOverflow.ellipsis,
                    ),
                    SizedBox(height: 10),
                    Text(

farmingNews[index]['description'] ?? 'No
description available.',
                      maxLines: 3,
                      overflow:
TextOverflow.ellipsis,
                    ),
                  ],
                ),
              ),
            );
          },
        ),
      ),
      // View All Button
      Padding(
        padding: EdgeInsets.only(left: 20, top:
10),
        child: TextButton(
          onPressed: () {
            // Navigate to the next screen to show
all the pills
            Navigator.push(
              context,
              MaterialPageRoute(
                builder: (context) =>
AllNewsScreen(pills: farmingNews),
              ),
            );
          },
          child: Text('View All'),
```

```dart
              ),
            ),
          ],
        ),
      ),
    );
  }
}

class AllNewsScreen extends StatelessWidget {
  final List<dynamic> pills;

  AllNewsScreen({required this.pills});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: Text('All Farming
News')),
      body: ListView.builder(
        itemCount: pills.length,
        itemBuilder: (context, index) {
          return Card(
            margin: EdgeInsets.all(10),
            child: ListTile(
              title: Text(pills[index]['title']),
              subtitle: Text(pills[index]['description']
?? 'No description available.'),
            ),
          );
        },
      ),
    );
  }
}
```

OUTPUT: -

Screen 1 (Home — Medicine Reminder):
Medicine Reminder
Keep track of your medications

Upcoming Dose
No medicines scheduled

All Medicines
No medicines added yet

Home Reports Calendar Profile

Screen 2 (Add Medicine):
Add Medicine

Medicine Type
PILL SYRUP INJECTION

Medicine Name
Dosage (mg)

Duration
Start Date 16/2/2025
End Date 18/3/2025

Doses per Day
1 2 3 4

Days of Week
✓ Mon ✓ Tue ✓ Wed ✓ Thu
✓ Fri ✓ Sat ✓ Sun

Reminder Times
Dose 1   8:23 AM

Screen 3 (Home with medicine):
Medicine Reminder
Keep track of your medications

Upcoming Dose
🕐 8:23 AM
Test - 1mg

All Medicines
Test
1 mg
8:23 AM
📅 Every day

Home Reports Calendar Profile

Screen 4 (Reports):
Medicine Reminder
Keep track of your medications

Medicine Reports
Track your medication adherence

Week Month Year

Adherence Rate   0.0%
0   1   1
Taken   Missed   Total

10/2 11/2 11/2 12/2 12/2 13/2 13/2 14/2 14/2 15/2 15/2 16/2 16/2

Medication History
Test
Taken at 8:23 AM   Taken

Home Reports Calendar Profile

Screen 5 (Calendar — empty):
Medicine Reminder
Keep track of your medications

< February 2025 >
Sun Mon Tue Wed Thu Fri Sat
16   17   18   19   20   21   22

No medications scheduled for
16/2/2025

Home Reports Calendar Profile

Screen 6 (Calendar — with medicine):
Medicine Reminder
Keep track of your medications

< February 2025 >
Sun Mon Tue Wed Thu Fri Sat
16   17   18   19   20   21   22

Test
8:23 AM   TAKE

Home Reports Calendar Profile