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MAD Experiment 2

Aim : Exploring Flutter Widgets.

Theory :

Each element on a 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 an apps is a tree of widgets.

Types of Widgets:

There are broadly two types of widgets in the flutter:

1. Stateless Widget – The widgets whose state can not be altered once they are built are called stateless widgets. These widgets are immutable once they are built i.e any amount of change in the variables, icons, buttons, or retrieving data can not change the state of the app.

2. Stateful Widget – The widgets whose state can be altered once they are built are called stateful Widgets. These states are mutable and can be changed multiple times in their lifetime. This simply means the state of an app can change multiple times with different sets of variables, inputs, data.

Description of the widgets used are as follows:

Scaffold – Implements the basic material design visual layout structure.
Text – To write anything on the screen.
Column – Arranges it's children widgets in a vertical array.
Center – To provide center alignment to other widgets.
Image – Displays an image from assets bundle.
CustomButton – Represents a custom button widget, custom styling and behavior

Code :

//ContactList.dart

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

class ContactListPage extends StatefulWidget {
  @override
  _ContactListPageState createState() => _ContactListPageState();
}
```

```
class _ContactListPageState extends State<ContactListPage> {
  late List<Contact> contacts;
  late List<Contact> filteredContacts;

  TextEditingController searchController = TextEditingController();

  @override
  void initState() {
    super.initState();
    // Sample list of contacts
    contacts = [
      Contact(name: 'John Doe', imageUrl: 'assets/Images/profile.jpg', date: '8/10/2023'),
      Contact(name: 'Jane Smith', imageUrl: 'assets/Images/profile.jpg', date: '7/9/2023'),
      Contact(name: 'Alice Johnson', imageUrl: 'assets/Images/profile.jpg', date: '6/9/2023'),
      // Add more contacts as needed
    ];
    filteredContacts = contacts;
    searchController.addListener(() {
      filterContacts(searchController.text);
    });
  }

  void filterContacts(String query) {
    List<Contact> filteredList = [];
    if (query.isNotEmpty) {
      for (var contact in contacts) {
        if (contact.name.toLowerCase().contains(query.toLowerCase())) {
          filteredList.add(contact);
        }
      }
    } else {
      filteredList = contacts;
    }
    setState(() {
      filteredContacts = filteredList;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Contact List'),
```

```
  backgroundColor: Colors.black12,
),
body: Column(
  children: [
    Padding(
      padding: const EdgeInsets.all(8.0),
      child: Container(
        decoration: BoxDecoration(
          //borderRadius: BorderRadius.circular(50),
          color: Colors.grey[800],
        ),
        child: Padding(
          padding: const EdgeInsets.symmetric(horizontal: 8.0),
          child: TextField(
            controller: searchController,
            style: TextStyle(color: Colors.white),
            decoration: InputDecoration(
              hintText: 'Search contacts or dial',
              hintStyle: TextStyle(color: Colors.white),
              border: InputBorder.none,
              labelStyle: TextStyle(color: Colors.white),
            ),
          ),
        ),
      ),
    ),
    SizedBox(height: 20),
    Expanded(
      child: ListView.builder(
        itemCount: filteredContacts.length + 3, // Add 3 for additional list items
        itemBuilder: (context, index) {
          // Check if the index is within the range of contacts
          if (index < 3) {
            // Render additional list items
            return ListTile(
              leading: Icon(
                index == 0
                    ? Icons.add_circle_outline // Icon for "Create a new meeting"
                    : index == 1
                    ? Icons.group_add // Icon for "Join a meeting"
                    : Icons.calendar_today, // Icon for "Schedule in Google Calendar"
                color: Colors.indigo[200], // Set icon color to indigo
              ),
              title: Text(
```

```
            index == 0
                ? 'Create a new meeting'
                : index == 1
                ? 'Join a meeting'
                : 'Schedule in Google Calendar',
            style: TextStyle(color: Colors.indigo[200]),
          ),
          onTap: () {
            // Handle tapping on each list item
            if (index == 0) {
              // Handle "Create a new meeting" action
            } else if (index == 1) {
              // Handle "Join a meeting" action
            } else {
              // Handle "Schedule in Google Calendar" action
            }
          },
        );
      } else {
        // Render contact list items
        int contactIndex = index - 3; // Adjust index for contact list
        return ListTile(
          leading: CircleAvatar(
            backgroundImage: AssetImage(filteredContacts[contactIndex].imageUrl),
          ),
          title: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              Text(
                filteredContacts[contactIndex].name,
                style: TextStyle(color: Colors.white),
              ),
              SizedBox(height: 2),
              Text(
                'Video Call',
                style: TextStyle(color: Colors.white, fontSize: 12),
              ),
            ],
          ),
        );
      }
    },
  ),
),
```

```
        ],
      ),

    );
  }
}

// Contact class to represent a contact with name, image URL, and date
class Contact {
  final String name;
  final String imageUrl;
  final String date;

  Contact({
    required this.name,
    required this.imageUrl,
    required this.date,
  });
}
```