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Experiment 3

AIM: To design Flutter UI by including common widgets (using Images).

THEORY:

Widgets as Building Blocks:
Flutter apps are built using widgets, which are reusable components that represent UI elements.
Common widgets like Text, Image, Container, Row, Column, ListView, etc., provide building blocks for your UI.
Widgets can be nested within each other to create complex layouts and hierarchies.
Image Handling:

Flutter provides various ways to display images in your UI:
Asset Images: Images stored within your app's assets folder. Use AssetImage widget.
Network Images: Images loaded from URLs. Use NetworkImage widget.
Memory Images: Images loaded from memory buffers. Use MemoryImage widget.
File Images: Images loaded from local files. Use FileImage widget.
Each widget offers customization options like scaling, fitting, and alignment.
Layout and Composition:

Flutter uses a flexible layout system based on widgets.
Widgets like Container can define padding, margins, and background colors.
Layout widgets like Row and Column arrange children horizontally or vertically.
Stack widget allows layering widgets with positioning control.
Use padding, margins, and alignment properties to fine-tune the visual hierarchy.
Best Practices:

Choose the appropriate image widget based on the source and loading strategy. Optimize image sizes and compression to improve performance.
Use placeholder widgets while images are loading to enhance user experience. Consider using image caches to avoid redundant downloads.
Leverage Flutter's built-in animation features for smooth transitions and effects.
Follow accessibility guidelines to ensure your UI is usable for everyone.
Additional Considerations:
Explore advanced image manipulation packages like image and cached_network_image.
Experiment with different layout widgets and techniques to achieve desired UI structures.
Test your UI on different devices and screen sizes for responsiveness.
Consider incorporating image gestures like tapping, zooming, and panning.

The Code is of home_page. dart:

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

class HomePage extends StatelessWidget {
  const HomePage({Key? key});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text('IIT JEE'),
        actions: [
          TextButton(
            onPressed: () {
              // Implement action for booking a call
            },
            child: const Text('Book a Call'),
          ),
          IconButton(
            icon: const Icon(Icons.phone),
            onPressed: () {
              // Implement action for booking a call
            },
          ),
        ],
      ),
      body: ListView(
        children: [
          Stack(
            children: [
              Column(
                crossAxisAlignment: CrossAxisAlignment.stretch,
                children: [
                  Container(
                    alignment: Alignment.center,
                    padding: const EdgeInsets.all(0.11),
```

```
            child: const Row(
              mainAxisAlignment: MainAxisAlignment.spaceBetween,
              children: [
                Text(
                  ' Your Selected Goal', // Replace with the selected goal
                  style: TextStyle(
                    fontWeight: FontWeight.bold,
                  ),
                ),
              ],
            ),
          ),
          const Padding(
            padding: EdgeInsets.all(0.011),
            child: TextField(
              decoration: InputDecoration(
                hintText: 'Search in the selected goal...',
                border: OutlineInputBorder(),
                prefixIcon: Icon(Icons.search), // Added search icon
              ),
            ),
          ),
          SizedBox(
            width: 400, // Adjust the width as needed
            height: 180, // Adjust the height as needed
            child: Image.asset("assets/images/unacademybackground.jpg"), // Replace
with your image
          ),

          const SizedBox(height: 18.0),
          Container(
            padding: const EdgeInsets.all(18.0),
            color: Colors.yellow[100], // Light yellow background color
            child: Row(
              mainAxisAlignment: MainAxisAlignment.spaceBetween,
              children: [
                const Column(
```

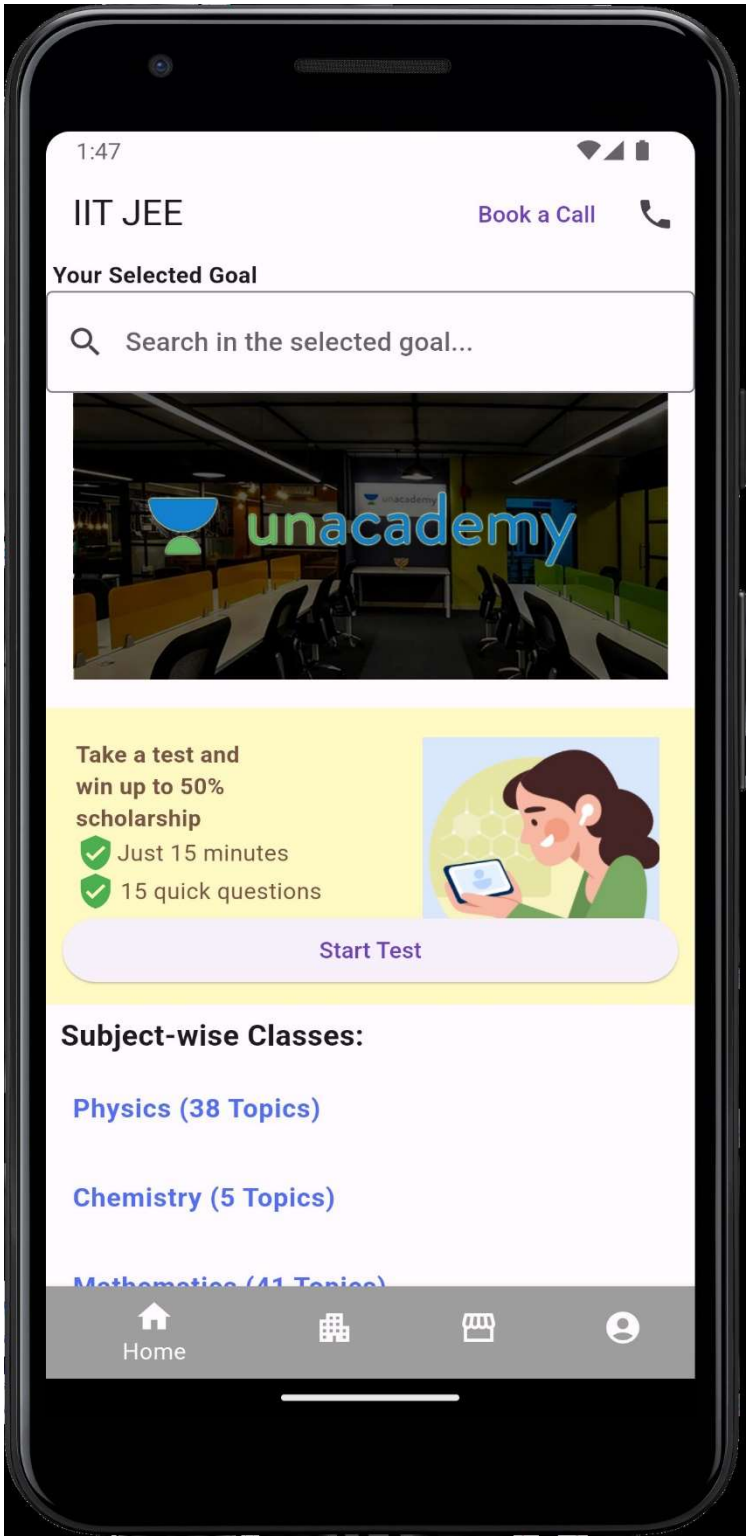
```
  crossAxisAlignment: CrossAxisAlignment.start,
  children: [
    Text(
      'Take a test and', // First line
      style: TextStyle(color: Colors.brown, fontWeight: FontWeight.bold),
    ),
    Text(
      'win up to 50% ', // Second line
      style: TextStyle(color: Colors.brown, fontWeight: FontWeight.bold),
    ),
    Text(
      'scholarship', // Third line
      style: TextStyle(color: Colors.brown, fontWeight: FontWeight.bold),
    ),
    Row(
      children: [
        Icon(Icons.verified_user, color: Colors.green), // Verification icon
        SizedBox(width: 1.0),
        Text(
          'Just 15 minutes', // Text next to verification icon
          style: TextStyle(color: Colors.brown),
        ),
      ],
    ),
    Row(
      children: [
        Icon(Icons.verified_user, color: Colors.green), // Verification icon
        SizedBox(width: 3.0),
        Text(
          '15 quick questions', // Text next to verification icon
          style: TextStyle(color: Colors.brown),
        ),
      ],
    ),
    SizedBox(height: 40),
  ],
),
```

```
                SizedBox(
                  width: 150, // Adjust the width as needed
                  height: 150, // Adjust the height as needed
                  child: Image.asset("assets/images/student.png"), // Replace with your
image
                ),
              ],
            ),
          ),
        ],
      ),
      Positioned(
        bottom: 10.0,
        left: 10.0,
        right: 10.0,
        child: ElevatedButton(
          onPressed: () {
            // Implement action for starting the test
          },
          child: const Text('Start Test'),
        ),
      ),
    ],
  ),
  const SizedBox(height: 3.0),
  const Padding(
    padding: EdgeInsets.all(4.0),
    child: Text(
      ' Subject-wise Classes:',
      style: TextStyle(
        fontSize: 18.0,
        fontWeight: FontWeight.bold,
      ),
    ),
  ),
  const SizedBox(height: 1.0),
  ListTile(
```

```
      title: const Text(
        'Physics (38 Topics)',
        style: TextStyle(color: Colors.indigoAccent, fontWeight: FontWeight.bold),
      ),
      onTap: () {
        // Implement action for opening Physics lectures
      },
    ),
    ListTile(
      title: const Text(
        'Chemistry (5 Topics)',
        style: TextStyle(color: Colors.indigoAccent, fontWeight: FontWeight.bold),
      ),
      onTap: () {
        // Implement action for opening Chemistry lectures
      },
    ),
    ListTile(
      title: const Text(
        'Mathematics (41 Topics)',
        style: TextStyle(color: Colors.indigoAccent, fontWeight: FontWeight.bold),
      ),
      onTap: () {
        // Implement action for opening Mathematics lectures
      },
    ),
  ],
),
bottomNavigationBar: BottomNavigationBar(
  items: const [
    BottomNavigationBarItem(
      icon: Icon(Icons.home),
      label: 'Home',
      backgroundColor: Colors.grey,
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.apartment),
```

```
          label: 'Centres',
        ),
        BottomNavigationBarItem(
          icon: Icon(Icons.storefront_sharp),//arrow_forward_ios
          label: 'Store',
        ),
        BottomNavigationBarItem(
          icon: Icon(Icons.account_circle),
          label: 'Me',
        ),
      ],
      onTap: (int index) {
        switch (index) {
          case 1:
            Navigator.push(
              context,
              MaterialPageRoute(builder: (context) => Centres()), // Navigate to Centres page
            );
            break;
        // Add cases for other tabs if needed
        }
      },
    ),
  );
 }
}
```

OUTPUT:



CONCLUSION: Thus understood the use of icons, images and font widgets in flutter. Implemented icons, images and fonts in my flutter application.