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

Theory: -

Flutter is a versatile open-source UI framework , which allows developers to build natively compiled applications for mobile, web, and desktop platforms from a single codebase. One of the key strengths of Flutter is its flexibility in creating highly customizable UIs. This practical focuses on incorporating essential visual elements—icons, images, and custom fonts—into a Flutter application. These elements enhance the visual appeal and usability of the app, providing an engaging experience for users.

A flutter app when built has both assets (resources) and code. Assets are available and deployed during runtime. The asset is a file that can include static data, configuration files, icons, and images. The Flutter app supports many image formats, such as JPEG, WebP, PNG, GIF, animated WebP/GIF, BMP, and WBMP.

Visual elements play a significant role in app development.

- **Enhanced User Experience**: Images and icons make your app visually appealing and user-friendly.

- **Information Conveyance**: They convey information quickly and intuitively. A well-chosen icon can replace lengthy text.

- **Branding**: Custom icons and images reinforce your app's branding, making it memorable.

➢ **Adding Icons in Flutter**

Flutter provides built-in material design icons through the Icons class. Custom icons can also be added using third-party packages such as flutter_launcher_icons and font_awesome_flutter.

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

➢ **Adding Images in Flutter**

Flutter supports images from three sources:

1. **Assets** (Stored locally in the project)

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

     ```
     flutter:
      assets:
        - assets/images/sample.png
     ```

   - Display the image in the app

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

2. **Network** (Fetched from the internet)

   Displaying images from the internet or network is very simple. Flutter provides a built-in method Image.network to work with images from a URL. The Image.network method also allows you to use some optional properties, such as height, width, color, fit, and many more.

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

3. **Memory or File** (Stored on the device)

➢ **Adding Custom Fonts in Flutter**

By default, Flutter uses the Roboto font, but custom fonts can be added for a unique UI.

- Download the font and place it in the assets/fonts/ folder.
- Declare the font in pubspec.yaml
- Use the font in the app
  ```
  Text(
   'Custom Font Example',
   style: TextStyle(fontFamily: 'CustomFont', fontSize: 24),
  );
  ```

Code: -

Category_selection_screen.dart

```dart
import 'package:flutter/material.dart';
import 'package:quiz/screens/quiz_screen.dart';

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

  @override
  Widget build(BuildContext context) {
    final categories = [
      {"title": "CNS", "image":
"assets/images/cns.jpg"},
      {"title": "OS", "image": "assets/images/os.jpg"},
      {"title": "DSA", "image":
"assets/images/dsa.jpg"},
      {"title": "SQL", "image":
"assets/images/sql.png"},
      {"title": "Cloud Computing", "image":
"assets/images/cloud.png"},
      {"title": "AI", "image": "assets/images/ai.jpg"},
      {"title": "ML", "image":
"assets/images/ml.jpg"},
    ];

    return Scaffold(
      appBar: AppBar(title: const Text("Select
Category")),
      body: ListView.builder(
        padding: const EdgeInsets.all(16),
        itemCount: categories.length,
        itemBuilder: (context, index) {
          return Card(
            elevation: 4,
            margin: const EdgeInsets.symmetric(vertical:
8),
            child: ListTile(
              leading: Image.asset(categories[index]['image']!,
width: 50, height: 50),
              title: Text(categories[index]['title']!, style: const
TextStyle(fontSize: 20, fontWeight: FontWeight.bold)),

              trailing: ElevatedButton(
                onPressed: () {
                  Navigator.push(
                    context,
                    MaterialPageRoute(
                      builder: (_) => QuizScreen(category:
categories[index]['title']!),
                    ),
                  );
                },
                child: const Text("Start"),
              ),
            ),
          );
        },
      ),
    );
  }
}
```

pubspec.yaml

```yaml
flutter:
assets:
   - assets/images/
   - assets/animations/
   - assets/fonts/

 fonts:
  - family: Poppins
   fonts:
     - asset: assets/fonts/Poppins-Regular.ttf
     - asset: assets/fonts/Poppins-Bold.ttf
       weight: 700
```

OUTPUT: -