EXPERIMENT NO: - 03

Name:- Tejas Gunjal Class:- D15A Roll:No: - 18

<u>AIM: -</u> 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: -

crop list page.dart

```
import 'dart:convert';
                                                                 padding: EdgeInsets.all(10),
import 'package:flutter/services.dart';
                                                                 gridDelegate:
import 'package:flutter/material.dart';
                                                        SliverGridDelegateWithFixedCrossAxisCount(
import 'crop detail page.dart';
                                                                  crossAxisCount: 2,
                                                                  crossAxisSpacing: 10,
class CropListPage extends StatelessWidget {
                                                                  mainAxisSpacing: 15,
 Future<List<Map<String, dynamic>>>
                                                                  childAspectRatio: 1.2,
loadCrops() async {
  // Load the JSON file
                                                                 itemCount: crops.length,
                                                                 itemBuilder: (context, index) {
  String jsonString = await
rootBundle.loadString('assets/crops.json');
                                                                  return GestureDetector(
  List<dynamic> jsonResponse =
                                                                    onTap: () {
json.decode(jsonString);
                                                                     Navigator.push(
  return jsonResponse.map((crop) => crop as
                                                                      context,
Map<String, dynamic>).toList();
                                                                      MaterialPageRoute(
 }
                                                                       builder: (context) =>
                                                        CropDetailPage(crop: crops[index]),
 @override
                                                                      ),
 Widget build(BuildContext context) {
                                                                     );
  return Scaffold(
   appBar: AppBar(title: Text('Crop
                                                                    child: Column(
Practices')),
                                                                     crossAxisAlignment:
   body: FutureBuilder<List<Map<String,
                                                        CrossAxisAlignment.center,
dynamic>>>(
                                                                     children: [
    future: loadCrops(), // Load crops data
                                                                      ClipRRect(
from JSON
                                                                       borderRadius:
     builder: (context, snapshot) {
                                                        BorderRadius.circular(15),
      if (snapshot.connectionState ==
                                                                       child: Image.asset(
                                                                        crops[index]["image"],
ConnectionState.waiting) {
       return Center(child:
                                                                        height: 130,
CircularProgressIndicator());
                                                                        width: 180,
      } else if (snapshot.hasError) {
                                                                        fit: BoxFit.cover,
       return Center(child: Text('Error:
                                                                       ),
${snapshot.error}'));
      } else if (!snapshot.hasData ||
                                                                      SizedBox(height: 5),
snapshot.data!.isEmpty) {
                                                                      Text(
       return Center(child: Text('No crops
                                                                       crops[index]["name"],
                                                                       style: TextStyle(fontSize: 16,
available.'));
                                                        fontWeight: FontWeight.bold),
      } else {
       var crops = snapshot.data!;
                                                                      ),
       return GridView.builder(
                                                                     ],
```

```
crop["fertilizers"]),
                                                                buildListTile(context, "Major Diseases
                                                         and their Management", crop["disease"]),
                                                                buildListTile(context, "Harvesting",
                                                         crop["harvesting"]),
                                                                buildListTile(context, "Yield",
                                                          crop["yield"]),
                                                              ],
                                                             ),
                                                            );
crop details page.dart
                                                           Widget buildListTile(BuildContext context,
import 'package:flutter/material.dart';
                                                          String label, String content) {
import 'details page.dart';
                                                            return ListTile(
                                                             title: Text(label),
class CropDetailPage extends StatelessWidget {
 final Map<String, dynamic> crop;
                                                             onTap: () {
                                                              Navigator.push(
 CropDetailPage({required this.crop});
                                                                context,
                                                                MaterialPageRoute(
                                                                 builder: (context) => DetailsPage(label:
 @override
                                                         label, content: content),
 Widget build(BuildContext context) {
                                                                ),
  return Scaffold(
                                                              );
   appBar: AppBar(title: Text(crop["name"])),
   body: ListView(
     children: [
      Image.asset(
       crop["image"],
       height: 250,
       width: double.infinity,
       fit: BoxFit.cover,
      ),
      SizedBox(height: 20),
      buildListTile(context, "Introduction",
crop["introduction"]),
      buildListTile(context, "Climate",
crop["climate"]),
      buildListTile(context, "Soil",
crop["soil"]),
      buildListTile(context, "Sowing",
crop["sowing"]),
      buildListTile(context, "Land Preparation",
crop["land preparation"]),
      buildListTile(context, "Fertilizers",
```

details page.dart

```
import 'package:flutter/material.dart';
class DetailsPage extends StatelessWidget {
 final String label;
 final String content;
 DetailsPage({required this.label, required
this.content});
 @override
 Widget build(BuildContext context) {
  return Scaffold(
   appBar: AppBar(title: Text('$label')),
   body: Padding(
     padding: const EdgeInsets.all(16.0),
     child: SingleChildScrollView(
      child: Text(
       content,
       style: TextStyle(fontSize: 18),
```

pubspec.yaml

```
flutter:
```

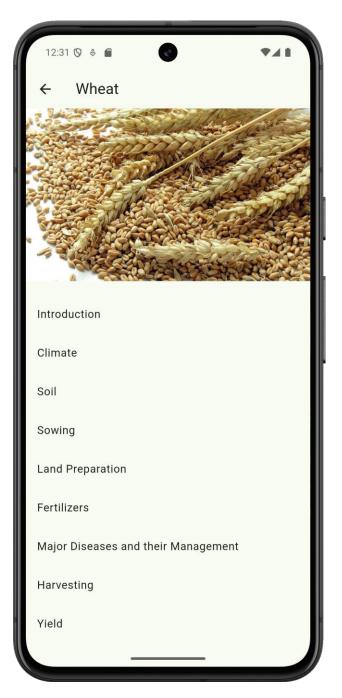
assets:

- assets/crops.json
- assets/images/logo.png
- assets/images/banner.jpg
- assets/images/offers.png
- assets/images/crop tonics.png
- assets/images/fertilizer.png
- assets/images/pesticides.png
- assets/images/delivery.png
- assets/images/product1.png
- assets/images/product2.png
- assets/images/product3.png
- assets/images/product4.png

- assets/images/product5.png
- assets/images/product6.png
- assets/images/product7.png
- assets/images/product8.png
- assets/images/product9.png
- assets/images/product10.png
- assets/images/product11.png
- assets/images/product12.png
- assets/images/wheat.png
- assets/images/paddy.png
- assets/images/maize.jpg
- assets/images/pearl millet.png
- assets/images/tomato.jpg
- assets/images/cauliflower.jpg
- assets/images/potato.jpg
- assets/images/brinjal.jpg
- assets/images/cabbage.jpg
- assets/images/chilli.jpg
- assets/images/onion.jpg
- assets/images/coriander.jpg
- assets/images/garlic.png
- assets/images/sugarcane.png

OUTPUT: -





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← Major Diseases and their Mana...

FLAG SMUT

Symptoms:

It is seed borne disease. infection spread through wind. It is favoured by cool, humid conditions during flowering period of the host plant. Wheat infected with flag smut has long gray and black lesions on the leaves and leaf sheaths. As flag smut lesions break open, they realse large amounts of black, powdery spores of the fungus.

Management

Treat the seed with fungicides like carboxyl (Vitavax 75 WP @2.5 gm/kg of seeds), Carbendazim (Bavistin 50 WP) @2.5 gm/kg of seed), Tebuconazole (Raxil 2 DS) @1.25 gm/kg of seed) if the disease level in the seed lot is high. If it is low to moderate, treat the seed with a combination of Trichoderma viride@4 gm/kg seed and half the recommended dose of Carboxin (Vitavax 75 WP) @1.25 gm/kg seed.

Powdery mildew

Symptoms:

Greyish white powdery growth appears on the leaf, sheath, stem and floral parts. Powdery