Experiment No. 3

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

Theory:

To include icons, images, and fonts in a Flutter app, you need to understand the following core concepts related to asset management in Flutter. Here's the theory behind including these resources:

1. Assets in Flutter:

Assets are files or resources such as images, fonts, icons, or sounds that you include in your app and bundle within the app package. In Flutter, you can include these assets in your project and then use them in your app.

2. Adding Assets to pubspec.yaml:

In Flutter, you declare assets in the pubspec.yaml file. This is where you specify which assets should be bundled with your app during the build process.

Example for adding assets:

flutter:

assets:

- assets/images/

- assets/icons/

In this example, the images are stored in the assets/images directory, and icons in the assets/icons directory. You can also specify specific files instead of directories.

3. Including Images:

Flutter provides several ways to include images in your app, including network images, asset images, and file images. To use asset images, you reference them by their file path relative to the assets directory.

Example of including an asset image:

Image.asset('assets/images/my_image.png')

For this to work, the image (my_image.png) must be listed in the pubspec.yaml file under the flutter section, like this: flutter: assets:

   - assets/images/my_image.png

4. Including Icons:

Flutter allows you to use custom icons in your app. You can add icon files (e.g., .png or .svg) to your assets folder and use them in the app. Alternatively, Flutter provides built-in icons via the Icons class.

Example of using an asset icon:

   Image.asset('assets/icons/my_icon.png')

5. Including Fonts:

To include custom fonts, you place your font files (e.g., .ttf or .otf files) in a folder inside your assets directory. Then, you declare these fonts in the pubspec.yaml file and use them in your app.

Example of adding custom fonts in pubspec.yaml:

flutter:

fonts:

- family: CustomFont

   fonts:

- asset: assets/fonts/CustomFont-Regular.ttf

- asset: assets/fonts/CustomFont-Bold.ttf

Example of using the custom font in Flutter:

Text(

'Hello, World!',   style: TextStyle(fontFamily:

'CustomFont', fontSize: 20),

)

6. Font Weight and Style:

When specifying fonts, you can also define specific font weights and styles (like bold, italic) to support different text styles in your app.

7. Working with Icon Libraries:

While you can use custom icon files, Flutter also supports popular icon libraries like **FontAwesome**, **MaterialIcons**, etc. For example, Flutter's built-in Icons class provides access to the Material Design icons.

Example of using a Material icon:

Icon(Icons.home)

8. Caching and Optimization:

- **Images**: Flutter caches images, but you might want to use libraries like cached_network_image for better image loading and caching.
- **Fonts**: Custom fonts are loaded from assets when the app is first started, and they remain available for the lifecycle of the app.

9. SVG Images:

If you want to use vector-based images (like SVG), you can include them using packages like flutter_svg, which allows you to display scalable vector graphics (SVG files) in Flutter.

Example of including an SVG:

import 'package:flutter_svg/flutter_svg.dart';
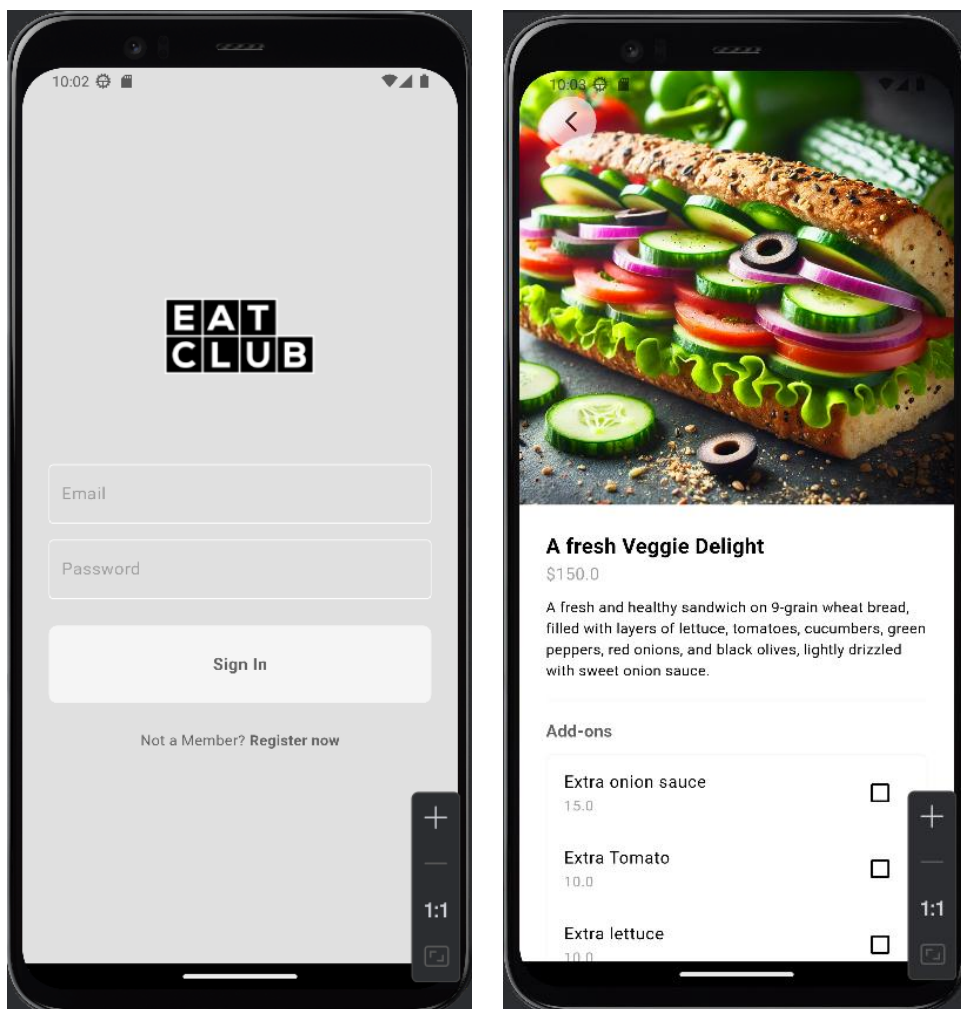
SvgPicture.asset('assets/icons/my_icon.svg')

Summary of Key Steps:

1. **Declare assets in pubspec.yaml.**
2. **For images and icons**, use Image.asset('path/to/image') and Image.asset('path/to/icon').

3. **For fonts**, declare them under the flutter section in pubspec.yaml, then use them via the TextStyle class.
4. **Use Icon Libraries**: Use Flutter's built-in Icons class or third-party icon libraries.
5. **For SVGs**, use packages like flutter_svg.

Understanding these concepts will help you effectively use images, icons, and fonts in your Flutter app.

Screenshots:

Code Snippets:

```
import 'package:collection/collection.dart';
import 'package:flutter/cupertino.dart';
```

```dart
import 'package:flutter_eats/models/cart_item.dart';

import 'food.dart';

class Restaurant extends ChangeNotifier {
  // list of food menu
  final List<Food> _menu = [

    //Sandwiches
    Food(
        name: "A fresh Veggie Delight",
        description:"A fresh and healthy sandwich on 9-grain wheat bread, filled
with layers of lettuce, tomatoes, cucumbers, green peppers, red onions, and black
olives, lightly drizzled with sweet onion sauce.",
        imagePath: "lib/images/Sandwiches/veggie_delight.webp",
        price: 150,
        category: FoodCategory.sandwiches,
        availableAddons: [
          Addon(name: "Extra onion sauce" , price: 15),
          Addon(name: "Extra Tomato" , price: 10),
          Addon(name: "Extra lettuce" , price: 10),
        ]),

    Food(
        name: "Meatball mariana cheese sandwich",
        description:" A hearty sandwich filled with tender meatballs smothered in
rich marinara sauce, topped with melted mozzarella cheese, all served on Italian
herbs and cheese bread.",
        imagePath: "lib/images/Sandwiches/Meatball_mariana.webp",
        price: 200,
        category: FoodCategory.sandwiches,
        availableAddons: [
          Addon(name: "Extra mariana sauce" , price: 30),
          Addon(name: "Extra cheese" , price: 20),
          Addon(name: "Extra meatballs" , price: 60),
        ]),

    Food(
        name: "Oven-Roasted Chicken sandwich",
        description:" A fresh Subway sandwich featuring an oven-roasted chicken
breast on hearty multigrain bread, topped with lettuce, sliced tomatoes,
cucumbers, and a drizzle of honey mustard sauce.",
        imagePath: "lib/images/Sandwiches/Roasted_Chicken.webp",
        price: 200,
        category: FoodCategory.sandwiches,
```

```
      availableAddons: [
        Addon(name: "Honey Mustard Sauce" , price: 30),
        Addon(name: "Extra Tomato" , price: 20),
        Addon(name: "Extra Cucumber" , price: 50),
      ]),

    Food(
      name: "Turkey and Ham Combo",
      description:"A delicious sandwich featuring turkey and ham on freshly
baked wheat bread, layered with crisp lettuce, juicy tomatoes, red onions, Swiss
cheese, and a light spread of mayonnaise and mustard.",
      imagePath: "lib/images/Sandwiches/Turkey_Ham.webp",
      price: 200,
      category: FoodCategory.sandwiches,
      availableAddons: [
        Addon(name: "Swiss Cheese" , price: 30),
        Addon(name: "Extra Mayonnise" , price: 20),
        Addon(name: "Extra Mustard" , price: 10),
      ]),

    Food(
      name: "Italian B.M.T",
      description:"A delicious Subway sandwich with layers of pepperoni, salami,
and ham on freshly baked bread, topped with crisp lettuce, tomatoes, onions, and
olives, and finished with a drizzle of mayonnaise and mustard",
      imagePath: "lib/images/Sandwiches/Salami_Sub .webp",
      price: 200,
      category: FoodCategory.sandwiches,
      availableAddons: [
        Addon(name: "Extra Ham" , price: 30),
        Addon(name: "Extra Salami " , price: 20),
        Addon(name: "Extra Pepperoni" , price: 30),
      ]),

  //Pasta

    Food(
      name: "Spaghetti Carbonara",
      description: "A classic Italian dish featuring al dente spaghetti coated in a
creamy egg-based sauce with crispy pancetta, freshly grated Parmesan cheese,
and a sprinkle of black pepper.",
      imagePath: "lib/images/Pasta/Spaghetti_Carabonara.webp",
      price: 200,
      category: FoodCategory.pasta,
      availableAddons: [
```

```
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 20),
      Addon(name: "Extra chesse" , price: 30),
    ]),

  Food(
    name: "Alfredo Pasta",
    description: "A creamy and rich pasta dish with perfectly cooked fettuccine
noodles coated in a smooth and velvety Parmesan cheese and butter sauce,
garnished with freshly chopped parsley.",
    imagePath: "lib/images/Pasta/Alfredo_Pasta.webp",
    price: 200,
    category: FoodCategory.pasta,
    availableAddons: [
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 50),
      Addon(name: "Parmesan cheese" , price: 30),
    ]),

  Food(
    name: "Basil Pesto Pasta",
    description: "A creamy and rich pasta dish with perfectly cooked fettuccine
noodles coated in a smooth and velvety Parmesan cheese and butter sauce,
garnished with freshly chopped parsley.",
    imagePath: "lib/images/Pasta/Basil_Pestp_Pasta.webp",
    price: 200,
    category: FoodCategory.pasta,
    availableAddons: [
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 50),
      Addon(name: "Extra Pesto" , price: 60),
    ]),

  Food(
    name: "Lasagna",
    description: " A delicious homemade lasagna with layers of pasta sheets, rich
ground beef and tomato sauce, creamy béchamel, and melted mozzarella cheese,
baked to perfection and topped with fresh basil.",
    imagePath: "lib/images/Pasta/Chicken_Lasagna.webp",
    price: 200,
    category: FoodCategory.pasta,
    availableAddons: [
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 50),
      Addon(name: "Extra Pesto" , price: 60),
```

```
      ]),

  Food(
    name: "Penne Arrabiata Pasta",
    description: " A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
    imagePath: "lib/images/Pasta/Penne_Arrabiata_Pasta.webp",
    price: 200,
    category: FoodCategory.pasta,
    availableAddons: [
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 50),
      Addon(name: "Extra Pesto" , price: 60),
    ]),

  //Pizza

  Food(
    name: "BBQ Chicken Pizza",
    description: " A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
    imagePath: "lib/images/Pizza/BBQ_Chicken_Pizza.webp",
    price: 200,
    category: FoodCategory.pizza,
    availableAddons: [
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 50),
      Addon(name: "Extra Pesto" , price: 60),
    ]),

  Food(
    name: "Classic Margherita Pizza",
    description: " A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
    imagePath: "lib/images/Pizza/Classic_Margherita_pizza.webp",
    price: 200,
    category: FoodCategory.pizza,
    availableAddons: [
      Addon(name: "Garlic Bread" , price: 100),
      Addon(name: "Bread Sticks" , price: 50),
      Addon(name: "Extra Pesto" , price: 60),
    ]),
```

```
Food(
  name: "Musshroom Pizza",
  description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
  imagePath: "lib/images/Pizza/Musshroom_Pizza.webp",
  price: 200,
  category: FoodCategory.pizza,
  availableAddons: [
    Addon(name: "Garlic Bread" , price: 100),
    Addon(name: "Bread Sticks" , price: 50),
    Addon(name: "Extra Pesto" , price: 60),
  ]),

Food(
  name: "Pepperoni pizza",
  description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
  imagePath: "lib/images/Pizza/Pepperoni_pizza.webp",
  price: 200,
  category: FoodCategory.pizza,
  availableAddons: [
    Addon(name: "Garlic Bread" , price: 100),
    Addon(name: "Bread Sticks" , price: 50),
    Addon(name: "Extra Pesto" , price: 60),
  ]),

Food(
  name: "Veggie Supreme Pizza",
  description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
  imagePath: "lib/images/Pizza/Veggie_Supreme_Pizza.webp",
  price: 200,
  category: FoodCategory.pizza,
  availableAddons: [
    Addon(name: "Garlic Bread" , price: 100),
    Addon(name: "Bread Sticks" , price: 50),
    Addon(name: "Extra Pesto" , price: 60),
  ]),


//rolls
```

```
Food(
  name: "Chicken Kathi roll",
  description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
  imagePath: "lib/images/rolls/Chicken_Kathi_roll.webp",
  price: 200,
  category: FoodCategory.rolls,
  availableAddons: [
    Addon(name: "Garlic Bread" , price: 100),
    Addon(name: "Bread Sticks" , price: 50),
    Addon(name: "Extra Pesto" , price: 60),
  ]),

Food(
  name: "Chicken Shawarma Wrap",
  description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
  imagePath: "lib/images/rolls/Chicken_Shawarma_Wrap.webp",
  price: 200,
  category: FoodCategory.rolls,
  availableAddons: [
    Addon(name: "Garlic Bread" , price: 100),
    Addon(name: "Bread Sticks" , price: 50),
    Addon(name: "Extra Pesto" , price: 60),
  ]),

Food(
  name: "Tandoori Paneer roll",
  description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
  imagePath: "lib/images/rolls/Tandoori_Paneer_roll.webp",
  price: 200,
  category: FoodCategory.rolls,
  availableAddons: [
    Addon(name: "Garlic Bread" , price: 100),
    Addon(name: "Bread Sticks" , price: 50),
    Addon(name: "Extra Pesto" , price: 60),
  ]),

Food(
  name: "Veggie Spring roll",
```

```dart
    description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
      imagePath: "lib/images/rolls/Veggie_Spring_roll.webp",
      price: 200,
      category: FoodCategory.rolls,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),

  Food(
      name: "Mutton Roll",
      description: " A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
      imagePath: "lib/images/rolls/Mutton_Roll.webp",
      price: 200,
      category: FoodCategory.rolls,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),


  //biryani

  Food(
      name: "Handi Biryani",
      description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
      imagePath: "lib/images/Biryani/Handi_Biryani.webp",
      price: 200,
      category: FoodCategory.biryani,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),

  Food(
      name: "Hyderabadi Biryani",
```

```
      description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
      imagePath: "lib/images/Biryani/Hyderabadi_Biryani.webp",
      price: 200,
      category: FoodCategory.biryani,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),

    Food(
      name: "Kolkata Biryani",
      description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
      imagePath: "lib/images/Biryani/Kolkata_Biryani.webp",
      price: 200,
      category: FoodCategory.biryani,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),

    Food(
      name: "Lucknowi Biryani",
      description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
      imagePath: "lib/images/Biryani/Lucknowi_Biryani.webp",
      price: 200,
      category: FoodCategory.biryani,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),

    Food(
      name: "Malabar Biryani",
      description: "  A vibrant dish featuring al dente penne pasta tossed in a spicy
tomato sauce with red chili flakes, garlic, and olive oil, garnished with fresh basil
leaves and grated Parmesan cheese.",
```

```dart
      imagePath: "lib/images/Biryani/Malabar_Biryani.webp",
      price: 200,
      category: FoodCategory.biryani,
      availableAddons: [
        Addon(name: "Garlic Bread" , price: 100),
        Addon(name: "Bread Sticks" , price: 50),
        Addon(name: "Extra Pesto" , price: 60),
      ]),

  ];
  /*
  G E T T E R S
   */

List<Food> get menu => _menu;
List<CartItem> get cart => _cart;


/*
O P E R A T I O NS
 */

// user cart
final List<CartItem> _cart = [];


// add to cart
void addTocart(Food food, List<Addon> selectedAddons) {
  // see if there is a cart item already with the same food and selected addons

  CartItem? cartItem = _cart.firstWhereOrNull((item) {
    // check if the food items are the same
    bool isSameFood = item.food == food;


    //check if the list of selected addons are the same
    bool isSameAddons = ListEquality().equals(item.selectedAddons,
selectedAddons);

    return isSameFood && isSameAddons;
  } );

  // if item already exists, increase its quantity
  if (cartItem !=null) {
    cartItem.quantity++;
  }
```

```dart
  //otherwise, add a new cart item
  else {
    _cart.add(
      CartItem(
        food: food,
        selectedAddons: selectedAddons,
      ),);
  }
  notifyListeners();
}

// remove from cart

void removeFromCart(CartItem cartItem) {
  int cartIndex = _cart.indexOf(cartItem);

  if (cartIndex != -1) {
    if (_cart[cartIndex].quantity > 1 ) {
      _cart[cartIndex].quantity--;
    } else {
      _cart.removeAt(cartIndex);
    }
  }

  notifyListeners();
}

//get total price of cart

double getTotalPrice() {
  double total = 0.0;

  for (CartItem cartItem in _cart) {
    double itemTotal = cartItem.food.price;

    for (Addon addon in cartItem.selectedAddons) {
      itemTotal += addon.price;
    }
    total += itemTotal * cartItem.quantity;
  }
  return total;
}

//get total number of items
```

```
int getTotalItemCount() {
  int totalItemCount = 0;

  for (CartItem cartItem in _cart) {
    totalItemCount +=cartItem.quantity;
  }

  return totalItemCount;
}

//clear cart

void clearCart() {
  _cart.clear();
  notifyListeners();
}

/*
H E L P E R S
 */

// generate a receipt

// format double value into money

// format list of addons into a string summary
}
```