Final Project

Project Name - Recycle Bin

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Section : 01

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Project Summary:

The RecycleBin mobile application is designed to promote sustainable living by encouraging responsible waste disposal and recycling. Developed using Flutter, the app provides a user-friendly interface for both administrators and regular users. The project focuses on user engagement, efficient recycling processes, and seamless navigation. This report outlines the key features, design choices, and future considerations of the RecycleBin application.

Project Overview:

1. Application Purpose:
   - Facilitate waste management and recycling for both administrators and users.
   - Enhance user awareness and education about environmental sustainability.

2. Technological Stack:
   - Flutter framework for cross-platform development.

- Material Design principles for a consistent and appealing user interface.

3. **Key Features**:

a. User Type Selection:
   - Users can identify themselves as either administrators or regular users.
   - Different interfaces and functionalities are provided based on the selected user type.

b. Admin Screen:
   - Admins can manage product uploads, order confirmations, and delivery options.
   - Quick access to the user profile and a logout option for security.

c. User Screen:
   - Regular users can view a list of available products for recycling.
   - Access to a user profile and logout functionality for account management.

d. Profile Page:
   - Users can view and update their profile information.
   - Aesthetic display of user details and a button for profile updates.

e. Product Management:
   - Admins can upload products for recycling, cancel products, and confirm orders.
   - Users can view available products and add them to their cart.

f. Navigation:
   - Bottom navigation bars for easy access to home, search, and user/account profiles.
   - Consistent navigation patterns for an intuitive user experience.

Design Choices:

1. Color Scheme:
   - Dark pinkish color for the app bar (primaryColor).
   - Light pinkish color for the background (scaffoldBackgroundColor).
   - Visual appeal and thematic consistency for brand identity.

2. Icons and Imagery:
   - Thoughtful use of icons, such as cloud upload, cancel, check, and local shipping.
   - Dummy profile pictures and product icons for a visually engaging experience.

3. User Interaction:

- Gesture detection for user type selection (admin or regular user).
- Touchscreen interactions for product management and profile updates.

Future Considerations:

1. Enhanced Sustainability Metrics:
   - Integrate data analytics to provide users and admins with insights into their recycling impact.
   - Gamification features to encourage healthy competition among users.

2. Localization and Global Outreach:
   - Implement language localization for a broader user base.
   - Collaborate with international organizations to expand the app's reach.

3. Continuous Improvement:
   - Gather user feedback through app usage analytics.
   - Regularly update the app to introduce new features and address user concerns.

Project Code :

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

void main() {
  runApp(const MyApp());
}

class MyApp extends StatelessWidget {
  const MyApp({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      theme: ThemeData(
        primaryColor: Color(0xffeb83a6), // Dark pinkish color for app bar
        scaffoldBackgroundColor:
            Color(0xffed96b3), // Light pinkish color for background
      ),
      debugShowCheckedModeBanner: false,
      home: UserTypeSelectionPage(),
    );
```

```dart
  }
}

// ... (rest of your code remains unchanged)

class UserTypeSelectionPage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('RecycleBin'),
      ),
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: [
            UserTypeIcon(
              userType: UserType.admin,
              onTap: () {
                Navigator.push(
                  context,
                  MaterialPageRoute(builder: (context) => AdminScreen()),
                );
              },
            ),
            SizedBox(height: 16),
            UserTypeIcon(
              userType: UserType.user,
              onTap: () {
                Navigator.push(
                  context,
                  MaterialPageRoute(builder: (context) => UserScreen()),
                );
              },
            ),
          ],
        ),
      ),
    );
  }
```

```dart
}

class AdminScreen extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('RecycleBin - Admin'),
        actions: [
          IconButton(
            onPressed: () {
              Navigator.pushAndRemoveUntil(
                context,
                MaterialPageRoute(
                  builder: (context) => UserTypeSelectionPage()),
                (route) => false,
              );
            },
            icon: Icon(Icons.logout),
          ),
          IconButton(
            onPressed: () {
              // Admin: View Profile
              Navigator.push(
                context,
                MaterialPageRoute(builder: (context) => ProfilePage()),
              );
            },
            icon: Icon(Icons.account_circle),
          ),
        ],
      ),
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: [
            IconButton(
              onPressed: () {
                // Admin: Upload Product
                print('Admin: Upload Product');
```

```dart
      },
      icon: Icon(Icons.cloud_upload), // Change to your upload icon
      iconSize: 50,
    ),
    SizedBox(height: 16),
    Container(
      width: 100,
      height: 100,
      color: Colors.red, // Change to your desired color
      child: IconButton(
        onPressed: () {
          // Admin: Cancel Product
          print('Admin: Cancel Product');
        },
        icon: Icon(Icons.cancel), // Change to your cancel icon
        iconSize: 50,
      ),
    ),
    SizedBox(height: 16),
    Container(
      width: 100,
      height: 100,
      color: Colors.green, // Change to your desired color
      child: IconButton(
        onPressed: () {
          // Admin: Confirmation Order
          print('Admin: Confirmation Order');
        },
        icon: Icon(Icons.check), // Change to your confirmation icon
        iconSize: 50,
      ),
    ),
    SizedBox(height: 16),
    Container(
      width: 100,
      height: 100,
      color: Colors.blue, // Change to your desired color
      child: IconButton(
        onPressed: () {
          // Admin: Delivery Option
```

```dart
                  print('Admin: Delivery Option');
                },
                icon:
                    Icon(Icons.local_shipping), // Change to your delivery icon
                iconSize: 50,
              ),
            ),
          ],
        ),
      ),
      bottomNavigationBar: BottomNavigationBar(
        items: const [
          BottomNavigationBarItem(
            icon: Icon(Icons.home),
            label: 'Home',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.search),
            label: 'Search',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.account_circle),
            label: 'Account',
          ),
        ],
      ),
    );
  }
}

class ProfilePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Profile'),
      ),
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
```

```dart
        children: [
          CircleAvatar(
            radius: 50,
            backgroundImage: AssetImage(
                'assets/dummy_profile_picture.jpg'), // Replace with your dummy profile
picture
          ),
          SizedBox(height: 16),
          Text('John Doe',
              style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold)),
          SizedBox(height: 8),
          Text('Age: 30'),
          SizedBox(height: 8),
          Text('Phone: 123-456-7890'),
          SizedBox(height: 8),
          Text('Address: 123 Main St, City'),
          SizedBox(height: 16),
          ElevatedButton(
            onPressed: () {
              // Navigate to update profile page
              print('Navigate to Update Profile Page');
            },
            child: Text('Update Profile'),
          ),
        ],
      ),
    ),
  );
 }
}

class UserScreen extends StatelessWidget {
  final List<Product> products = [
    Product(name: 'Electric Product', icon: Icons.flash_on),
    Product(name: 'Cloth', icon: Icons.shopping_bag),
    Product(name: 'Shoes', icon: Icons.shopping_cart),
    // Add more products as needed
  ];

  @override
```

```dart
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text('RecycleBin - User'),
      actions: [
        IconButton(
          onPressed: () {
            Navigator.pushAndRemoveUntil(
              context,
              MaterialPageRoute(
                builder: (context) => UserTypeSelectionPage()),
              (route) => false,
            );
          },
          icon: Icon(Icons.logout),
        ),
        IconButton(
          onPressed: () {
            // User: View Profile
            Navigator.push(
              context,
              MaterialPageRoute(builder: (context) => ProfilePage()),
            );
          },
          icon: Icon(Icons.account_circle),
        ),
      ],
    ),
    body: ListView.builder(
      itemCount: products.length,
      itemBuilder: (context, index) {
        return ListTile(
          leading: Icon(products[index].icon),
          title: Text(products[index].name),
          // Add more details or actions for each product as needed
        );
      },
    ),
    bottomNavigationBar: BottomNavigationBar(
      items: const [
```

```dart
          BottomNavigationBarItem(
            icon: Icon(Icons.home),
            label: 'Home',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.shopping_cart),
            label: 'Cart',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.person),
            label: 'Profile',
          ),
        ],
      ),
    );
  }
}

class Product {
  final String name;
  final IconData icon;

  Product({required this.name, required this.icon});
}

enum UserType {
  admin,
  user,
}

class UserTypeIcon extends StatelessWidget {
  final UserType userType;
  final VoidCallback onTap;

  const UserTypeIcon({
    required this.userType,
    required this.onTap,
  });

  @override
```
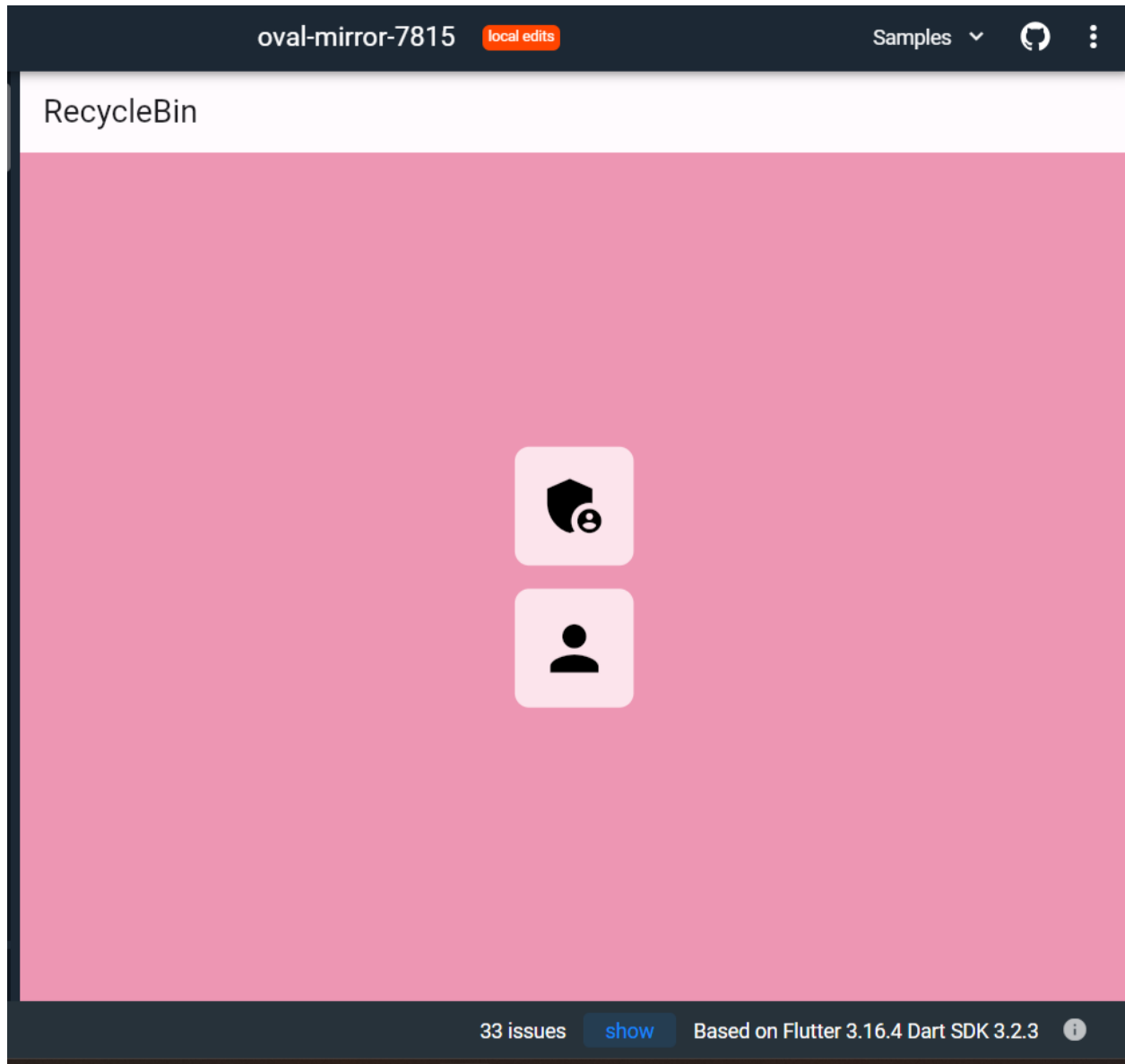
```
Widget build(BuildContext context) {
  IconData iconData =
      userType == UserType.admin ? Icons.admin_panel_settings : Icons.person;

  return GestureDetector(
    onTap: onTap,
    child: Container(
      padding: EdgeInsets.all(16),
      decoration: BoxDecoration(
        color: Colors.pink.shade 50,
        borderRadius: BorderRadius.circular(10),
      ),
      child: Icon(
        iconData,
        size: 50,
        color: Colors.black,
      ),
    ),
  );
}
}
```

Project Output:

Project Timeline :

Topic	Duration
SRS	13-18 November
Figma	25 November- 02 December
Project Code	23 November- 25 November
Final Report	25 December

Conclusion :

The RecycleBin mobile application represents a significant step toward promoting sustainable living through responsible waste management. With its intuitive design, engaging features, and potential for future enhancements, the app aims to contribute to a more environmentally conscious society.