

# Public transit

Hadeel Atallh	443051656
Raghad al-quhaiz	443051831
Reema Nasser	443051838
Shatha hamad	443052182
Deema Abdullah	443052192

# Introduction

Public Transit" is a new mobile app that makes using public transportation easier than ever. It helps you plan your journey from one place to another by showing you the best routes and schedules in real-time. You'll get updates on any delays or changes so you can adjust your plans accordingly. The app also lets you customize your preferences, like choosing the fastest route or the fewest transfers. With interactive maps and easy payment options, navigating and paying for your ride is simple and convenient. Plus, you can share your experiences and read reviews from other users to make informed decisions about your commute..

## We Benefit From This App :

1. **Real-Time Journey Planning:** Enter your starting point and destination to instantly see available bus, train, or subway schedules in real-time.
2. **Live Tracking:** Track your bus or train on a map in real-time, so you always know where your ride is and can plan accordingly.
3. **Personalized Alerts:** Set up alerts for your regular routes to get notified about delays or changes to your journey instantly.
4. **Accessibility Features:** The app is user-friendly for everyone, with features like voice-guided navigation, compatibility with screen readers, and support for multiple languages.

## **Background**

The Public Transit app was created to solve common problems commuters face when using public transport, like not having enough information, waiting a long time for rides, and dealing with inconvenient payment methods. Our development team worked closely with transportation experts to design an app that makes commuting easier and more user-friendly.

## **Scope**

In simple words, the Public Transit app is your go-to tool for using public transportation. It helps you plan your trips, track your rides in real-time, and stay updated on schedules—all from your smartphone. Whether you're taking a bus, train, subway, or tram, this app has you covered, making commuting easier and more convenient than ever.

## **Aim**

The aim is to improve the overall public transport experience for users by providing them with easy access to information, seamless journey planning, and convenient payment options. By offering these features, Public Transit aims to encourage more people to use public transport, leading to reduced traffic congestion and environmental benefits.

## **- Opportunities:**

Public Transit has the chance to make a big difference in how people use public transportation. By providing better information and easier ways to travel, more people may choose to use public transport instead of driving, which can help reduce traffic and pollution in cities. This app aims to make urban commuting more convenient and sustainable for everyone.

## **- Problems:**

However, the app may face challenges related to technical issues, data accuracy, user adoption, and accessibility. Overcoming these challenges will be crucial for the success of Public Transit in transforming the public transport experience.

## **Business Processes Comparison**

### **- Previous Business Processes:**

In the past, commuters relied on printed schedules, manual ticket purchases, and limited information sources for planning their public transport journeys.

### **- Is-Supported Business Processes:**

With Public Transit, these processes are streamlined and enhanced, offering users real-time information, integrated payment options, and personalized journey planning features.

### 1. **Understanding User Needs:**

- Identify who will use the app (like daily commuters or tourists).
- Learn what users want, such as real-time updates on transit, easy route planning, and convenient payment methods.
- Consider how to make the app accessible for users with disabilities.

### 2. **Transit Provider Requirements:**

- Collect info about current transit schedules, routes, and ticket prices.
- Understand what technologies transit providers use (like ticket systems and GPS tracking).
- Know any rules or standards that need to be followed.

### 3. **Functional Needs:**

- Provide real-time updates on transit (like arrival times and delays).
- Offer route planning and navigation within the app.
- Include easy payment options (like mobile tickets or linking to existing payment systems).
- Ensure accessibility, such as wheelchair-friendly routes and audio announcements.

### 4. **Non-functional Considerations:**

- Make sure the app responds quickly and works reliably.
- Keep user data secure (using encryption and safe payment methods).
- Plan for growth (so the app can handle more users and data over time).

#### 5. **Integration Requirements:**

- Make the app work with existing transit systems and databases.
- Ensure it runs on different devices and operating systems.

#### 6. **User Experience (UX):**

- Design the app to be easy to use, with a simple layout and clear information.
- Personalize the app (like saving favorite routes or stops).

#### 7. **Regulatory and Legal Needs:**

- Follow data protection laws (such as GDPR or CCPA).
- Meet accessibility standards (like ADA compliance).

#### 8. **Environmental Considerations:**

- Encourage using public transit to reduce environmental impact.
- Use energy-efficient technologies where possible.

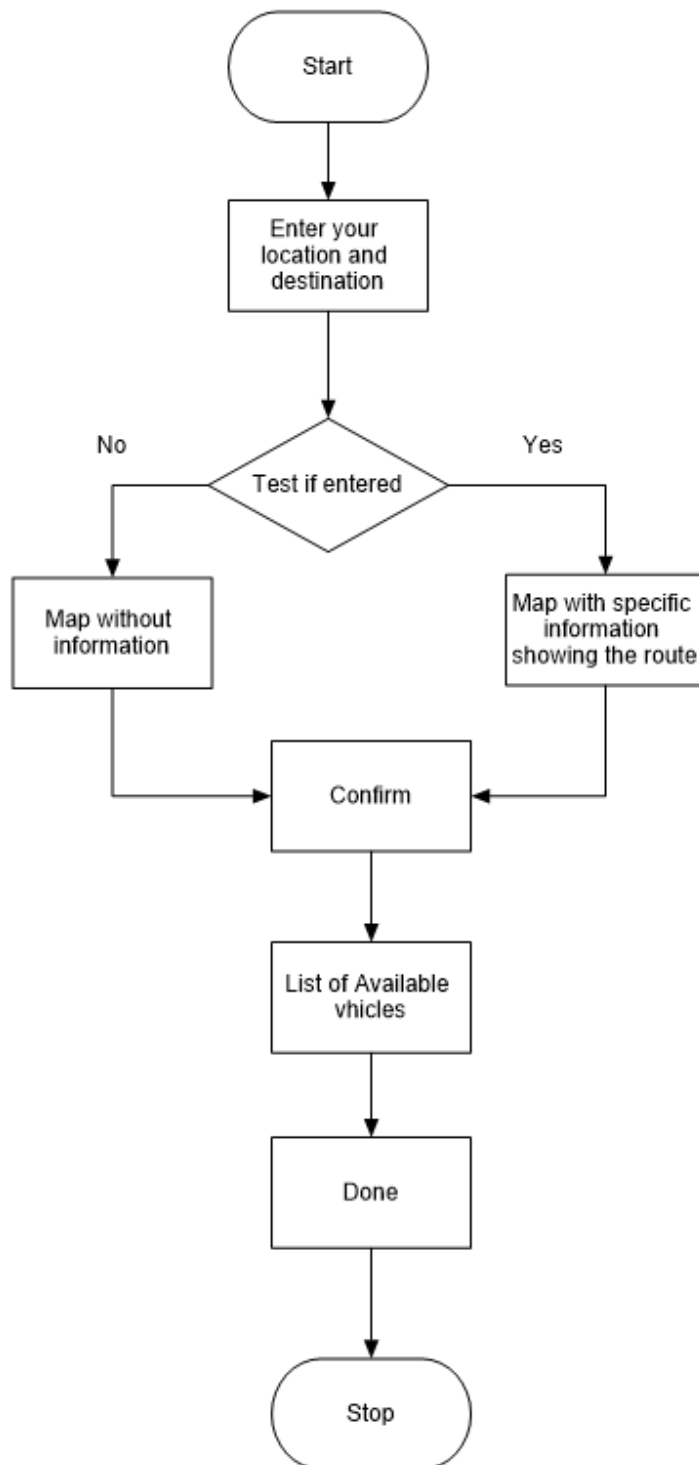
#### 9. **Budget and Timeline:**

- Set a budget and timeline for the project based on the requirements.

#### 10. **Stakeholder Input:**

- Get feedback from key people involved, like transit authorities, governments, and potential users.

# flowchart



# Pages Code

## Main Page:

```
main.dart X
lib > main.dart > PublicTransetApp > build
1 import 'package:flutter/material.dart';
2 import 'package:public_transet/list.dart';
3 import 'package:public_transet/road.dart';
4 import 'package:public_transet/home.dart';
5 import 'splash_screen.dart';
6
Run | Debug | Profile
7 void main() => runApp(const PublicTransetApp());
8
9 class PublicTransetApp extends StatelessWidget {
10   const PublicTransetApp({super.key});
11
12   @override
13   Widget build(BuildContext context) {
14     return MaterialApp(
15       debugShowCheckedModeBanner: false,
16       title: 'Public Transet',
17
18       initialRoute: '/',
19       routes: {
20         '/': (context) => const SplashScreen(),
21         '/home': (context) => HomePage(),
22         '/road': (context) => const RoadBage(),
23         '/list': (context) => const ListPage(),
24       },
25     ); // MaterialApp
26   }
27 }
28
```



## Appcolors Class:

```
appcolors.dart ×
lib > appcolors.dart > AppColors
1
2 import 'package:flutter/material.dart';
3
4 abstract class AppColors {
5
6   static const darkPrimary = Color.fromARGB(255, 47, 207, 114); //0xff5f7760
7   static const darkSecondary = Color.fromARGB(255, 255, 233, 110);
8   static const darkPrimaryText = Color(0xFFFFFFFF); //4b644a
9   static const darkSecondaryText = Color(0xFF95A1AC); //for the moon
10  static const darkPrimaryBackGround = Color(0xFF182026);
11  static const darkSecondaryBackGround = Color(0xFF101518);
12
13 }
```

## Splash Screen:

```
splash_screen.dart X
lib > splash_screen.dart > SplashScreen > build
1
2 import 'package:flutter/material.dart';
3 import 'package:public_transet/appcolors.dart';
4
5 class SplashScreen extends StatelessWidget {
6   const SplashScreen({Key? key}) : super(key: key);
7
8   @override
9   Widget build(BuildContext context) {
10    return Scaffold(
11      backgroundColor: AppColors.darkPrimaryBackGround,
12      body: Center(
13        child: Padding(
14          padding: const EdgeInsets.symmetric(horizontal: 20),
15          child: Column(
16            mainAxisAlignment: MainAxisAlignment.center,
17            children: [
18              Image.asset(
19                'assets/logo.png',
20                height: 150,
21                width: 450,
22                fit: BoxFit.contain,
23              ), // Image.asset
24              const SizedBox(height: 10,),
25              const Text(
26                'Public Transet',
27                style: TextStyle(
28                  fontSize: 24,
29                  color: AppColors.darkPrimary,
30                  fontWeight: FontWeight.w900,
31                  fontFamily: AutofillHints.birthdayYear,
32                ), // TextStyle
```

```

32     ), // TextStyle
33   ), // Text
34   const SizedBox(height: 20),
35   const Text(
36     'Seamlessly navigate your city with Public Transet, your journey starts here.',
37     textAlign: TextAlign.center,
38     style: TextStyle(
39       fontSize: 18,
40       color: AppColors.darkSecondaryText,
41       fontWeight: FontWeight.w500,
42       fontFamily: AutofillHints.birthdayDay,
43       height: 1.3,
44     ), // TextStyle
45   ), // Text
46   const SizedBox(height: 50),
47   SizedBox(
48     height: 40,
49     width: 250,
50     child: ElevatedButton(
51       style: ButtonStyle(
52         backgroundColor: MaterialStateProperty.all<Color>(AppColors.darkPrimary),
53         shape: MaterialStateProperty.all<RoundedRectangleBorder>(
54           RoundedRectangleBorder(
55             borderRadius: BorderRadius.circular(5),
56             side: BorderSide(color: AppColors.darkPrimary, width: 2.0),
57           ), // RoundedRectangleBorder
58         ),
59       ), // ButtonStyle
60       child: const Text(
61         'Get Started',

```

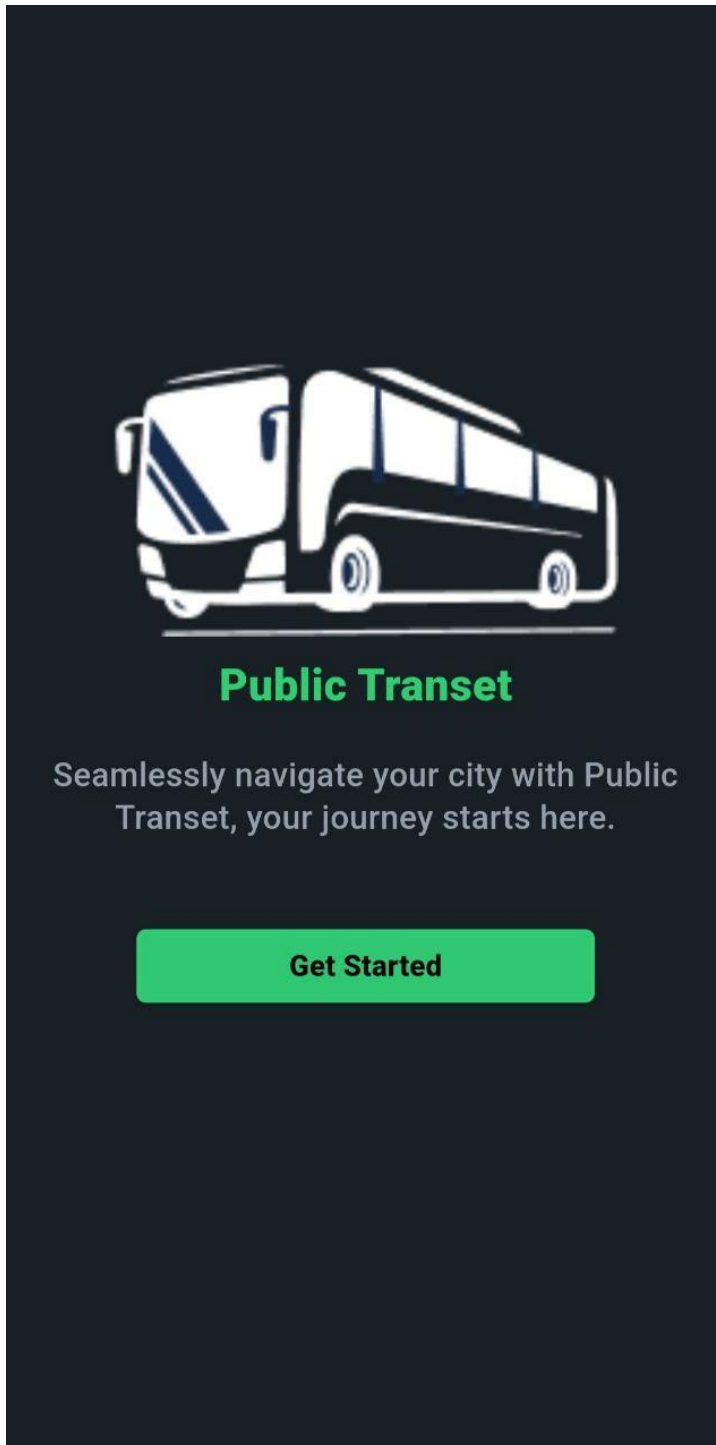
```

62       style: TextStyle(
63         color: Colors.black,
64         fontWeight: FontWeight.w800,
65         fontFamily: AutofillHints.familyName,
66         fontSize: 16,
67       ), // TextStyle
68     ), // Text
69     onPressed: () => Navigator.pushNamed(context, '/home'),
70   ), // ElevatedButton
71 ), // SizedBox
72 const SizedBox(height: 20),
73 ],
74 ), // Column
75 ), // Padding
76 ), // Center
77 ); // Scaffold
78 }
79 }
80

```

## App Screenshot

Splash Screen:



# Home Page:

```
home.dart x
lib > home.dart > HomePage > _buildLocationInputField
1 import 'package:flutter/material.dart';
2 import 'package:public_transet/appcolors.dart';
3
4 class HomePage extends StatelessWidget {
5   final TextEditingController _currentLocationController = TextEditingController();
6   final TextEditingController _destinationController = TextEditingController();
7
8   HomePage({super.key});
9
10  @override
11  Widget build(BuildContext context) {
12    return Scaffold(
13      backgroundColor: AppColors.darkPrimaryBackGround,
14      body: ListView(
15        padding: const EdgeInsets.fromLTRB(20, 50, 20, 20),
16        children: [
17          _buildLocationInputField("Enter your current location", _currentLocationController),
18          const SizedBox(height: 10),
19          _buildDestenaionInputField("Enter your destination", _destinationController),
20          const SizedBox(height: 20),
21          _buildTransportationGridView(),
22          const SizedBox(height: 20),
23          _buildNextButton(context),
24        ],
25      ), // ListView
26    ); // Scaffold
27  }
28
29  Widget _buildLocationInputField(String labelText, TextEditingController controller) {
30    return Column(
31      crossAxisAlignment: CrossAxisAlignment.start,
32      children: [
```

```
32      children: [
33        Padding(
34          padding: const EdgeInsets.only(bottom: 10),
35          child: Text(labelText, style: const TextStyle(color: Colors.white, fontSize: 20, fontWeight: FontWeight.w500)),
36        ), // Padding
37        TextField(
38          style: const TextStyle(color: AppColors.darkPrimaryText),
39          cursorColor: AppColors.darkPrimary,
40
41          controller: controller,
42          decoration: const InputDecoration(
43            focusedBorder: OutlineInputBorder(
44              borderSide: BorderSide(color: Colors.white), // OutlineInputBorder
45              labelText: 'Enter location', labelTextStyle: TextStyle(color: AppColors.darkSecondaryText),
46              border: OutlineInputBorder(),
47            ), // InputDecoration
48          ), // TextField
49        ],
50      ); // Column
51    ]
52  }
53
54  Widget _buildDestenaionInputField(String labelText, TextEditingController controller) {
55    return Column(
56      crossAxisAlignment: CrossAxisAlignment.start,
57      children: [
58        Padding(
59          padding: const EdgeInsets.only(bottom: 10),
60          child: Text(labelText, style: const TextStyle(color: Colors.white, fontSize: 20, fontWeight: FontWeight.w500)),
61        ), // Padding
```

```





61     TextField(
62       style: const TextStyle(color: AppColors.darkPrimaryText ),
63       cursorColor: AppColors.darkPrimary,
64       controller: controller,
65       decoration: const InputDecoration(
66         focusedBorder: OutlineInputBorder(
67           borderSide: BorderSide(color: Colors.white)), // OutlineInputBorder
68         labelText: 'Enter Destination', labelStyle: TextStyle(color: AppColors.darkSecondaryText),
69         border: OutlineInputBorder(),
70       ), // InputDecoration
71     ), // TextField
72   ],
73 ); // Column
74 }
75
76 Widget _buildTransportationGridView() {
77   return GridView.builder(
78     gridDelegate: const SliverGridDelegateWithFixedCrossAxisCount(
79       crossAxisCount: 2,
80       crossAxisSpacing: 10,
81       mainAxisSpacing: 10,
82     ), // SliverGridDelegateWithFixedCrossAxisCount
83     shrinkWrap: true,
84     physics: const NeverScrollableScrollPhysics(),
85     itemCount: 4,
86     itemBuilder: (BuildContext context, int index) {
87       return Container(
88         height: 150,
89         width: 150,
90         decoration: BoxDecoration(
91           borderRadius: BorderRadius.circular(20),
92           color: AppColors.darkSecondaryBackGround,
93         ), // BoxDecoration
94         child: Image.asset('assets/${index == 0 ? 'train' : index == 1 ? 'bus' : index == 2 ? 'Car' : 'motor'}.png'),
95       ); // Container
96     },
97   ); // GridView.builder
98 }
99
100 Widget _buildNextButton(BuildContext context) {
101   return Center(
102     child: SizedBox(
103       width: 250,
104       height: 40,
105       child: ElevatedButton(
106         style: ButtonStyle(
107           backgroundColor: MaterialStateProperty.all<Color>(AppColors.darkPrimary),
108           shape: MaterialStateProperty.all<RoundedRectangleBorder>(
109             RoundedRectangleBorder(
110               borderRadius: BorderRadius.circular(5),
111               side: const BorderSide(color: AppColors.darkPrimary, width: 2.0),
112             ), // RoundedRectangleBorder
113           ),
114           padding: MaterialStateProperty.all<EdgeInsetsGeometry>(
115             const EdgeInsets.symmetric(horizontal: 20), // تحديد هامش أفقي
116           ),
117         ), // ButtonStyle
118         child: const Text(
119           'Next'

```

## Home Page:

**Enter your current location**

**Enter your destination**



**Next**

## Road Page:

```
lib > road.dart > RoadBage > build
1
2 import 'package:flutter/material.dart';
3 import 'package:public_transet/appcolors.dart';
4
5 class RoadBage extends StatelessWidget {
6   const RoadBage({Key? key});
7
8   @override
9   Widget build(BuildContext context) {
10     final Map<String, dynamic> args = ModalRoute.of(context)!.settings.arguments as Map<String, dynamic>;
11
12     final String currentLocation = args['currentLocation'];
13     final String destination = args['destination'];
14
15     return Scaffold(
16       backgroundColor: AppColors.darkPrimaryBackGround,
17       body: Stack(
18         children: [
19           SizedBox(
20             height: double.infinity,
21             width: double.infinity,
22             child: Image.asset(
23               'assets/AnimatePolyline.jpg',
24               fit: BoxFit.cover,
25             ), // Image.asset
26         ), // SizedBox
27         Container(
28           height: 120,
29           decoration: const BoxDecoration(
30             color: AppColors.darkPrimaryBackGround,
31             borderRadius: BorderRadius.only(bottomLeft: Radius.circular(10), bottomRight: Radius.circular(10)),
32           ), // BoxDecoration
33       ), // BoxDecoration
34       child: Padding(
35         padding: const EdgeInsets.fromLTRB(10, 40, 10, 10),
36         child: Column(
37           crossAxisAlignment: CrossAxisAlignment.start,
38           children: [
39             Row(
40               mainAxisAlignment: MainAxisAlignment.start,
41               children: [
42                 Icon(Icons.location_on_outlined, color: AppColors.darkPrimary),
43                 const SizedBox(width: 5),
44                 Text(currentLocation, style: const TextStyle(color: AppColors.darkPrimary)),
45               ], // Row
46             ), // Row
47             Padding(
48               padding: const EdgeInsets.only(left: 11),
49               child: Container(
50                 height: 20,
51                 width: 2,
52                 color: AppColors.darkPrimary,
53               ), // Container
54             ), // Padding
55             Row(
56               mainAxisAlignment: MainAxisAlignment.start,
57               children: [
58                 Icon(Icons.location_on, color: AppColors.darkPrimary),
59                 const SizedBox(width: 5),
60                 Text(destination, style: const TextStyle(color: AppColors.darkPrimary)),
61               ], // Row
62             ), // Row
63           ], // Column
64         ), // Column
65       ), // Stack
66     ), // Scaffold
67   ), // build
68 }
```



```

62     ],
63     ), // Column
64   ), // Padding
65 ), // Container
66 Positioned(
67   bottom: 20,
68   left: 0,
69   right: 0,
70   child: Center(
71     child: SizedBox(
72       height: 40,
73       width: 250,
74       child: ElevatedButton(
75         style: ButtonStyle(
76           backgroundColor: MaterialStateProperty.all<Color>(AppColors.darkPrimary),
77           shape: MaterialStateProperty.all<RoundedRectangleBorder>(
78             RoundedRectangleBorder(
79               borderRadius: BorderRadius.circular(5),
80               side: const BorderSide(color: AppColors.darkPrimary, width: 2.0),
81             ), // RoundedRectangle
82           ), // ButtonStyle
83         ), // ButtonStyle
84         child: const Text(
85           'Confirm',
86           style: TextStyle(
87             color: Colors.black,
88             fontWeight: FontWeight.w800,
89             fontFamily: AutofillHints.familyName,
90           ), // TextStyle

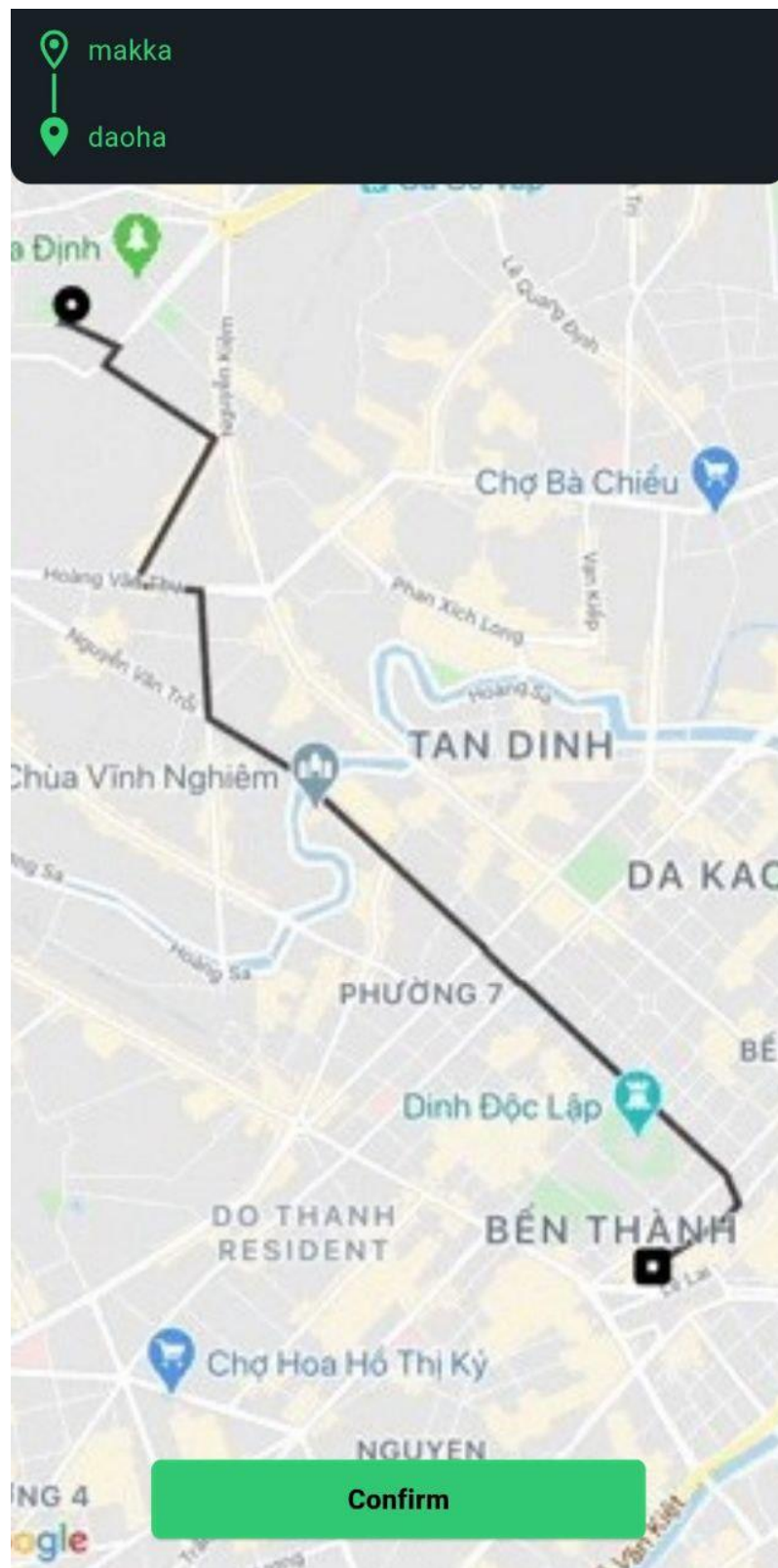
```

```

89             fontFamily: AutofillHints.familyName,
90           ), // TextStyle
91         ), // Text
92         onPressed: () => Navigator.pushNamed(context, '/list'),
93       ), // ElevatedButton
94     ), // SizedBox
95   ), // Center
96 ), // Positioned
97 ],
98 ), // Stack
99 ); // Scaffold
100 }
101 }
102
103

```

Road Page:



## List Page:


```
list.dart x
lib > list.dart > ListPage > build
1 import 'package:flutter/material.dart';
2 import 'package:public_transet/appcolors.dart';
3
4 class ListPage extends StatelessWidget {
5   const ListPage({Key? key});
6
7   @override
8   Widget build(BuildContext context) {
9     return Scaffold(
10      appBar: AppBar(
11        title: const Text(
12          "Available Now",
13          textAlign: TextAlign.center,
14          style: TextStyle(color: AppColors.darkPrimary),
15        ), // Text
16        backgroundColor: AppColors.darkPrimaryBackGround,
17        elevation: 2,
18        shadowColor: Colors.black,
19        iconTheme: const IconThemeData(color: AppColors.darkPrimary),
20      ), // AppBar
21      backgroundColor: AppColors.darkPrimaryBackGround,
22      body: Padding(
23        padding: const EdgeInsets.all(20),
24        child: Column(
25          children: [
26            _buildListItem("12:00", "963452"),
27            _buildListItem("12:10", "100555"),
28            _buildListItem("12:20", "662298"),
29            _buildListItem("12:30", "990055"),
30            const SizedBox(height: 40,),
31            Center(
32              child: SizedBox(
33                height: 40,
34                width: 250,
35                child: ElevatedButton(
36                  style: ButtonStyle(
37                    backgroundColor: MaterialStateProperty.all<Color>(AppColors.darkPrimary),
38                    shape: MaterialStateProperty.all<RoundedRectangleBorder>(
39                      RoundedRectangleBorder(
40                        borderRadius: BorderRadius.circular(5),
41                        side: const BorderSide(color: AppColors.darkPrimary, width: 2.0),
42                      ), // RoundedRectangleBorder
43                    ), // ButtonStyle
44                  child: const Text(
45                    'Done',
46                    style: TextStyle(
47                      color: Colors.black,
48                      fontWeight: FontWeight.w800,
49                      fontFamily: AutofillHints.familyName,
50                    ), // TextStyle
51                  ), // Text
52                  onPressed: () => Navigator.pushNamed(context, '/home'),
53                ), // ElevatedButton
54              ), // SizedBox
55            ), // Center
56          ], // Column
57        ), // Padding
58      ); // Scaffold
```

```

61 }
62
63 Widget _buildListItem(String time, String licensePlate) {
64   return Container(
65     width: double.infinity,
66     margin: const EdgeInsets.symmetric(vertical: 8),
67     padding: const EdgeInsets.symmetric(vertical: 20, horizontal: 16),
68     decoration: BoxDecoration(
69       color: AppColors.darkSecondaryBackGround,
70       borderRadius: BorderRadius.circular(5),
71     ), // BoxDecoration
72     child: Column(
73       crossAxisAlignment: CrossAxisAlignment.start,
74       children: [
75         Text(
76           time,
77           style: const TextStyle(fontSize: 16, fontWeight: FontWeight.bold, color: Colors.white),
78         ), // Text
79         const SizedBox(height: 4),
80         Text(
81           "license plate number: '$licensePlate'",
82           style: const TextStyle(fontSize: 16, fontWeight: FontWeight.bold, color: AppColors.darkSecondaryText),
83         ), // Text
84         const SizedBox(height: 10),
85       ],
86     ), // Column
87   ); // Container
88 }
89 }

```

List Page:

 Available Now

12:00

license plate number: '963452'

12:10

license plate number: '100555'

12:20

license plate number: '662298'

12:30

license plate number: '990055'

Done

In conclusion, Public Transit represents a significant step forward in the evolution of public transport applications, offering a range of innovative features designed to enhance the user experience and make public transport more accessible and convenient for all.