EXPERIMENT NO 5

NAME-kartik bhat

CLASS-D15A

ROLL NO-03

AIM-To apply navigation, routing and gestures in Flutter App

THEORY

Navigation in Flutter allows users to move between different screens (or pages) in the app. Flutter uses the Navigator widget to handle navigation between routes (screens).

Types of Navigation

🎬 Push Navigation (Forward Navigation) → Moves to a new screen. 🎬 Pop Navigation (Backward Navigation) → Moves back to the previous screen.

🎬 PushReplacement → Replaces the current screen with a new one. 🎬 PushAndRemoveUntil → Moves to a new screen and removes previous screens from the stack.

Routing in Flutter manages different screens in the app. It helps organize and structure navigation efficiently.

Types of Routing

1. Direct Route Navigation (MaterialPageRoute)-Used for simple page-to page navigation.
2. Named Routes (Predefined Routes in main.dart)-Defined in the MaterialApp widget and used throughout the app.

Flutter uses the GestureDetector widget to detect user interactions like taps, swipes, pinches, and long presses. This is essential for making an app interactive.

Common Gestures & Their Uses:

🎬 Tap → Detects simple taps on a widget.
🎬 Double Tap → Recognizes double-clicking.

🎬 Long Press → Triggers an action when the user presses and holds. 🎬 Swipe (Drag) → Detects horizontal or vertical dragging. 🎬 Pinch (Zoom In/Out) → Detects two-finger pinch for zooming.

SYNTAX

Navigator

```
Navigator.push(
 context,
 MaterialPageRoute(builder: (context) =>
SecondPage()),  );
Navigator.pushReplacement(
 context,
 MaterialPageRoute(builder: (context) => NewPage()),
);
```

Routing

```
void main() {
 runApp(MaterialApp(
 initialRoute: '/',
 routes: {
 '/': (context) => HomePage(),
 '/profile': (context) => ProfilePage(),
 },
 ));
}
```

Gestures

```
GestureDetector(
 onTap: () {
```

```
 print("Widget Tapped!");
 },
 child: Container(
 width: 100,
 height: 100,
 color: Colors.blue,
 ),
);
```

Widget Properties

Navigator

context → The current build context for navigation.

MaterialPageRoute → Creates a transition animation between pages. builder → Defines the widget to navigate to.

Navigator.push() → Pushes a new screen on top of the stack.

Navigator.pop() → Removes the top screen and goes back.

Navigator.pushReplacement() → Replaces the current screen with a new one.

Routing

initialRoute → Sets the first screen when the app starts.

routes → Defines a map of route names and corresponding widgets.

Navigator.pushNamed() → Navigates using a predefined route.

Navigator.pop() → Closes the current screen and returns to the previous one. Gestures

onDoubleTap → Detects a double tap.

onLongPress → Detects when the user presses and holds.

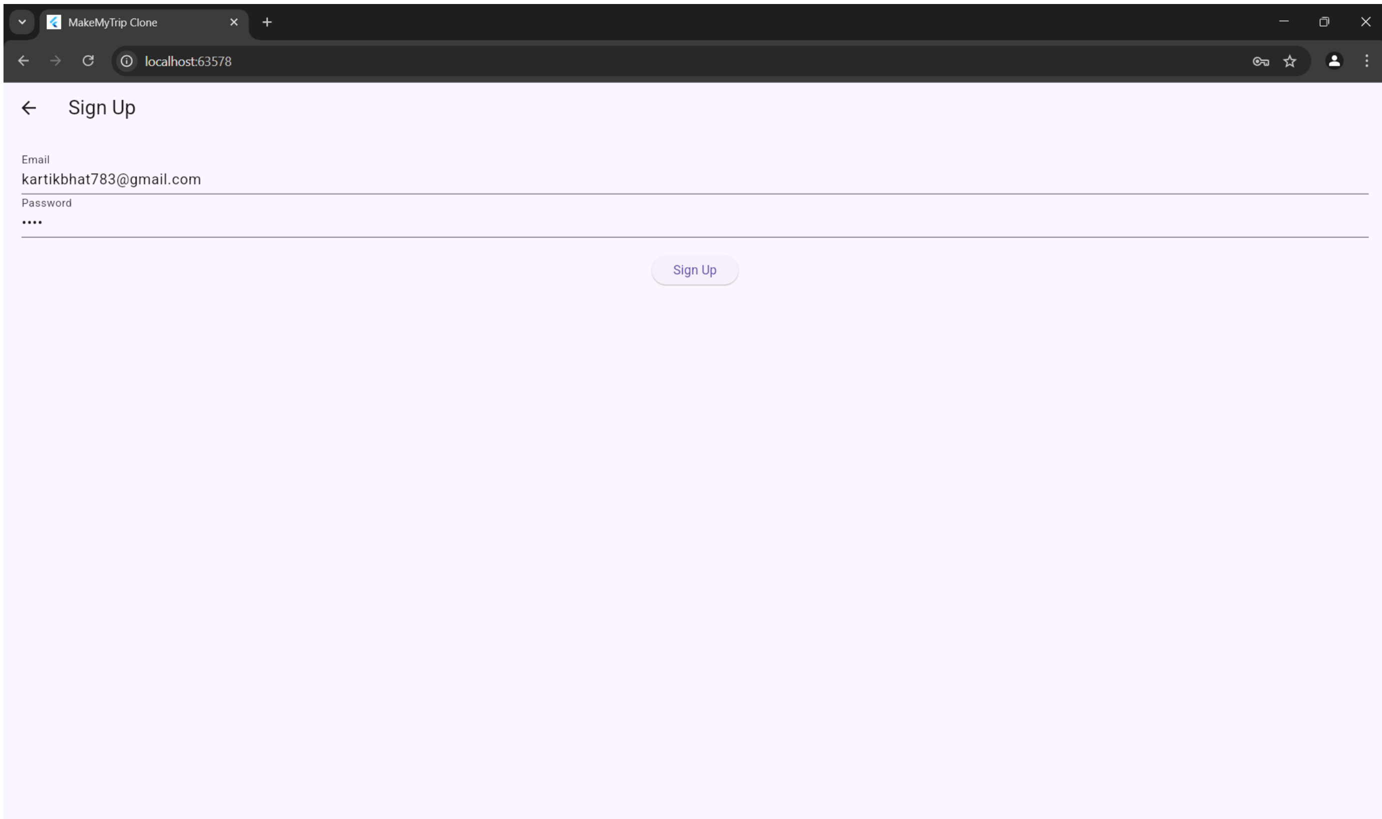
onHorizontalDragStart → Detects when a horizontal drag begins.

onHorizontalDragUpdate → Detects movement during a horizontal drag. onHorizontalDragEnd → Detects when a horizontal drag stops.

CODE

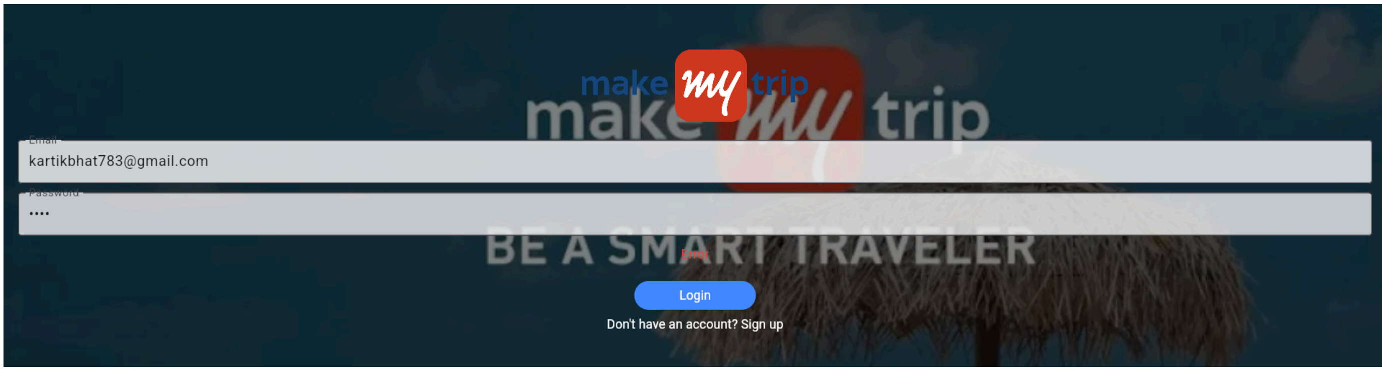
```
 // Navigate to Home Page
 Navigator.pushReplacement(
 context,
 MaterialPageRoute(builder: (context) => const TwitterHomePage()),
);
 }
```

OUTPUT



Email
kartikbhat783@gmail.com

Password
••••



Email
kartikbhat783@gmail.com

Password
••••

Error

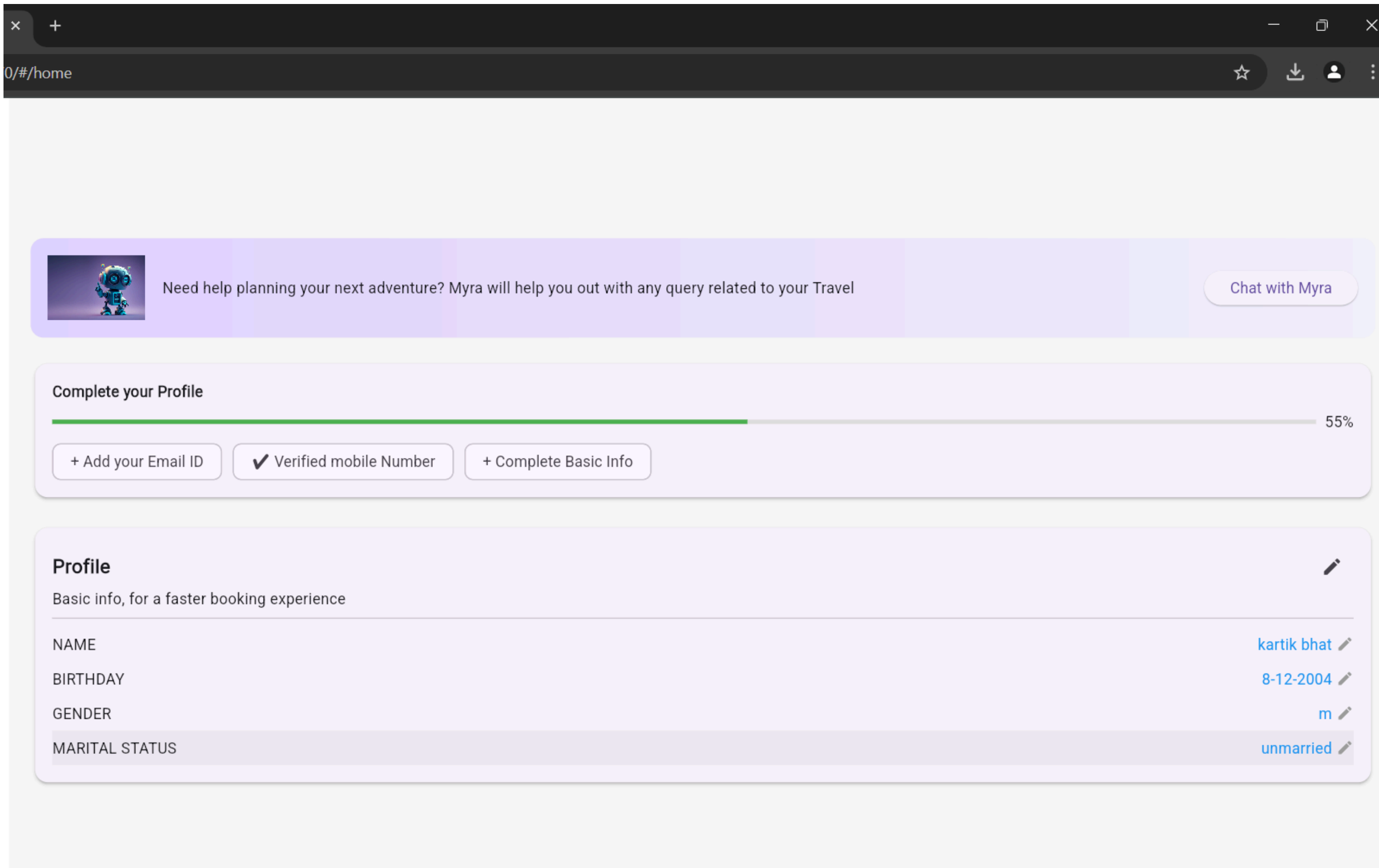
Don't have an account? Sign up

CODE

To go the user profile

```
onTap: () {
 Navigator.push(
 context,
 MaterialPageRoute(builder: (context) => const UserProfilePage()),  );
 },
```

OUTPUT



0/#/home

Need help planning your next adventure? Myra will help you out with any query related to your Travel

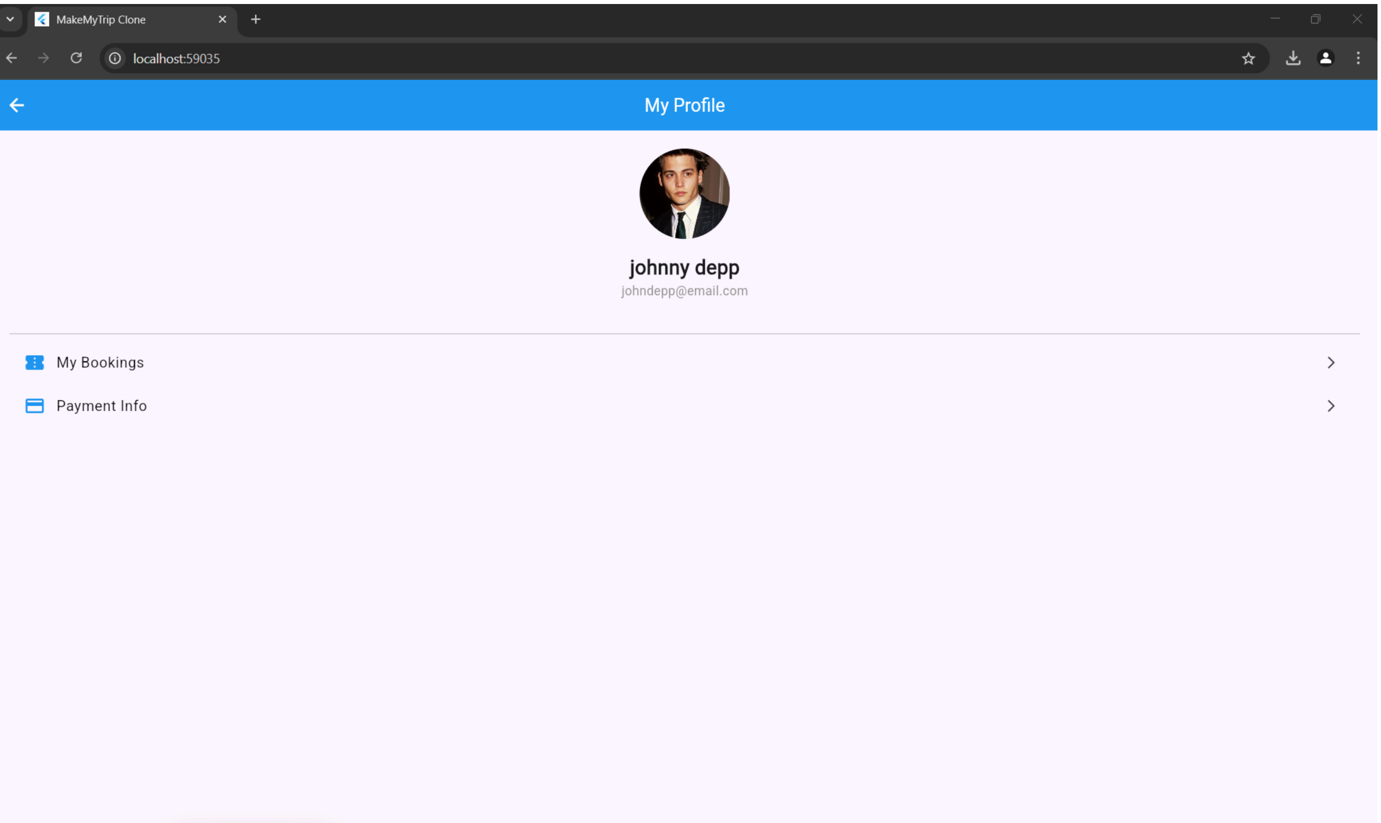
Complete your Profile

55%

Profile

Basic info, for a faster booking experience

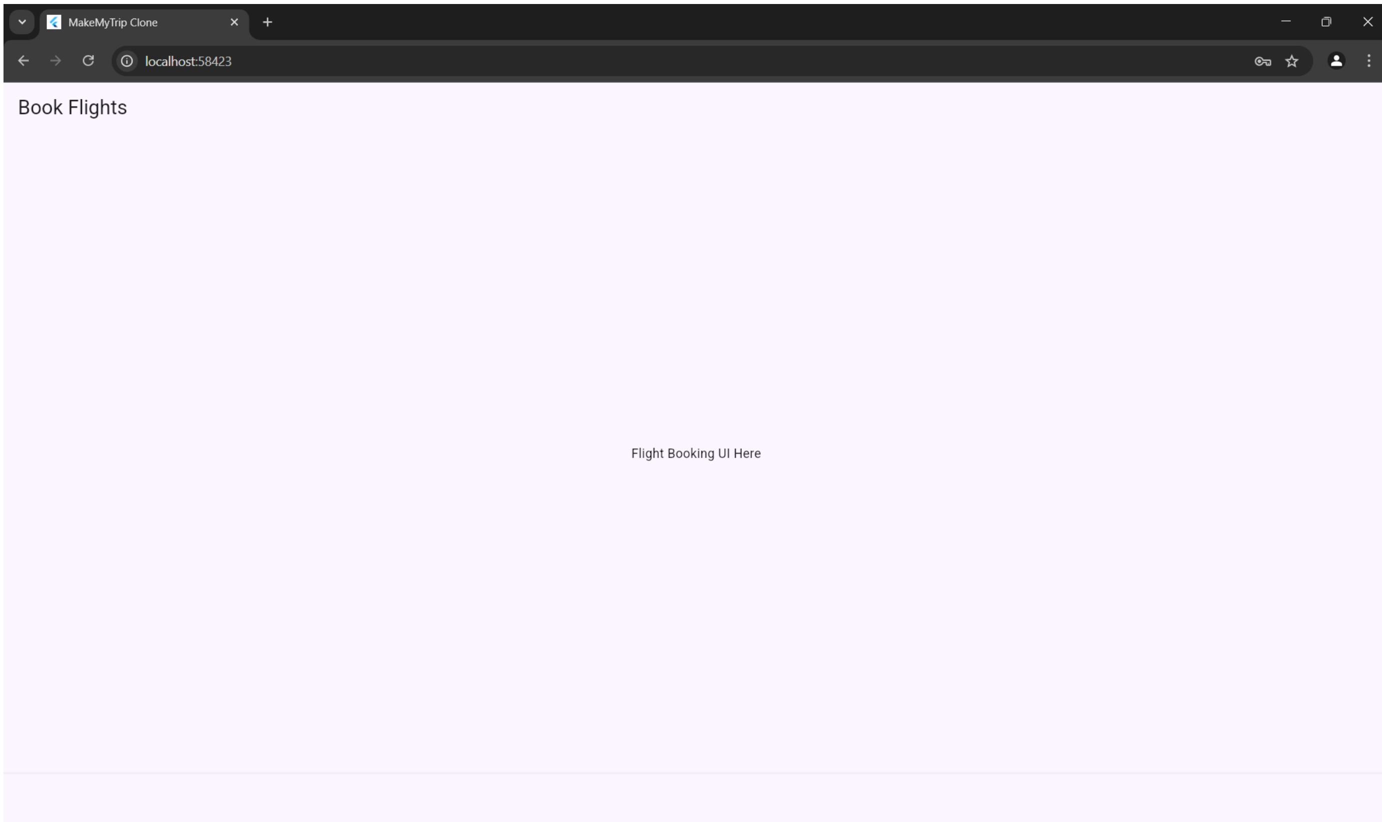
NAME	kartik bhat
BIRTHDAY	8-12-2004
GENDER	m
MARITAL STATUS	unmarried



My Profile

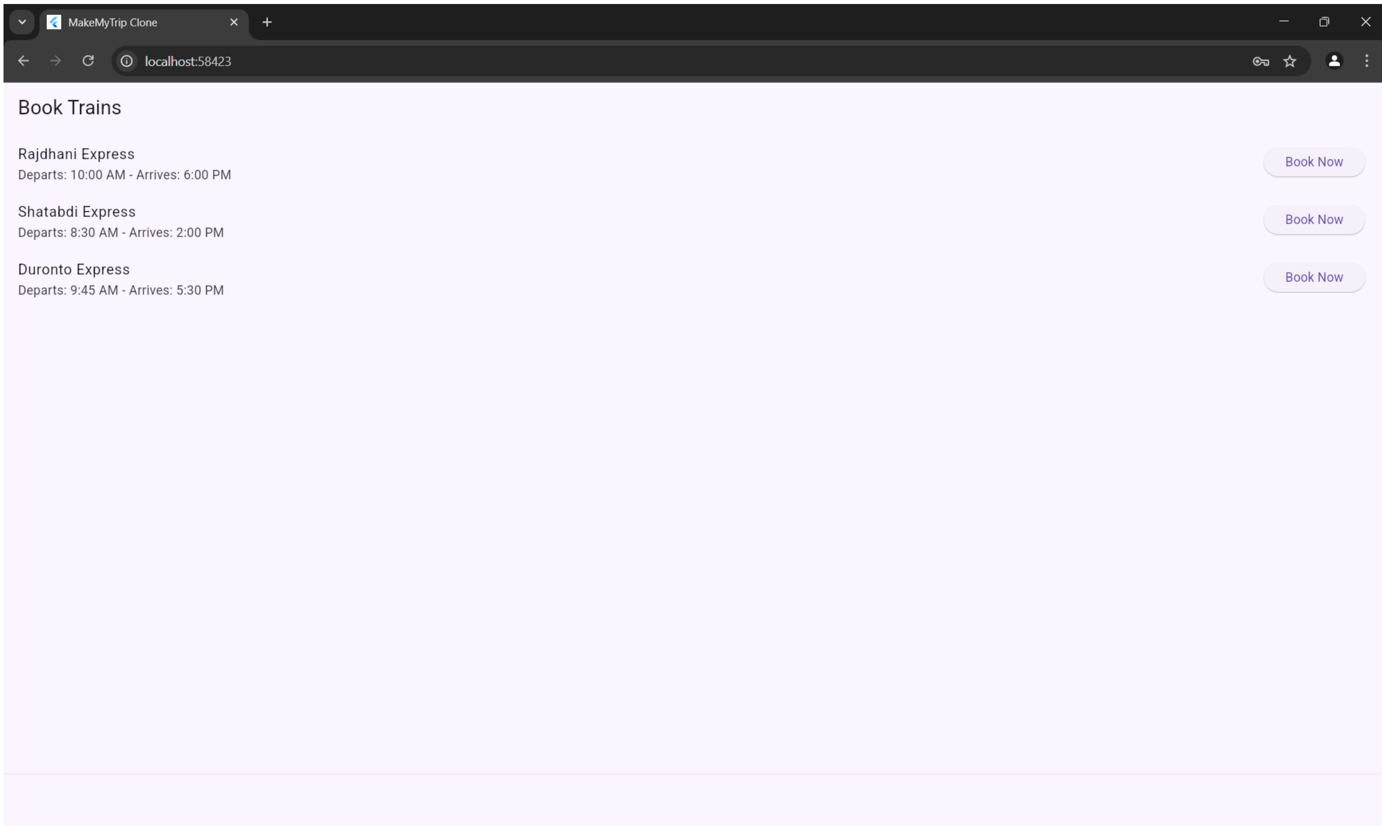
johnny depp

johndepp@email.com



Book Flights

Flight Booking UI Here

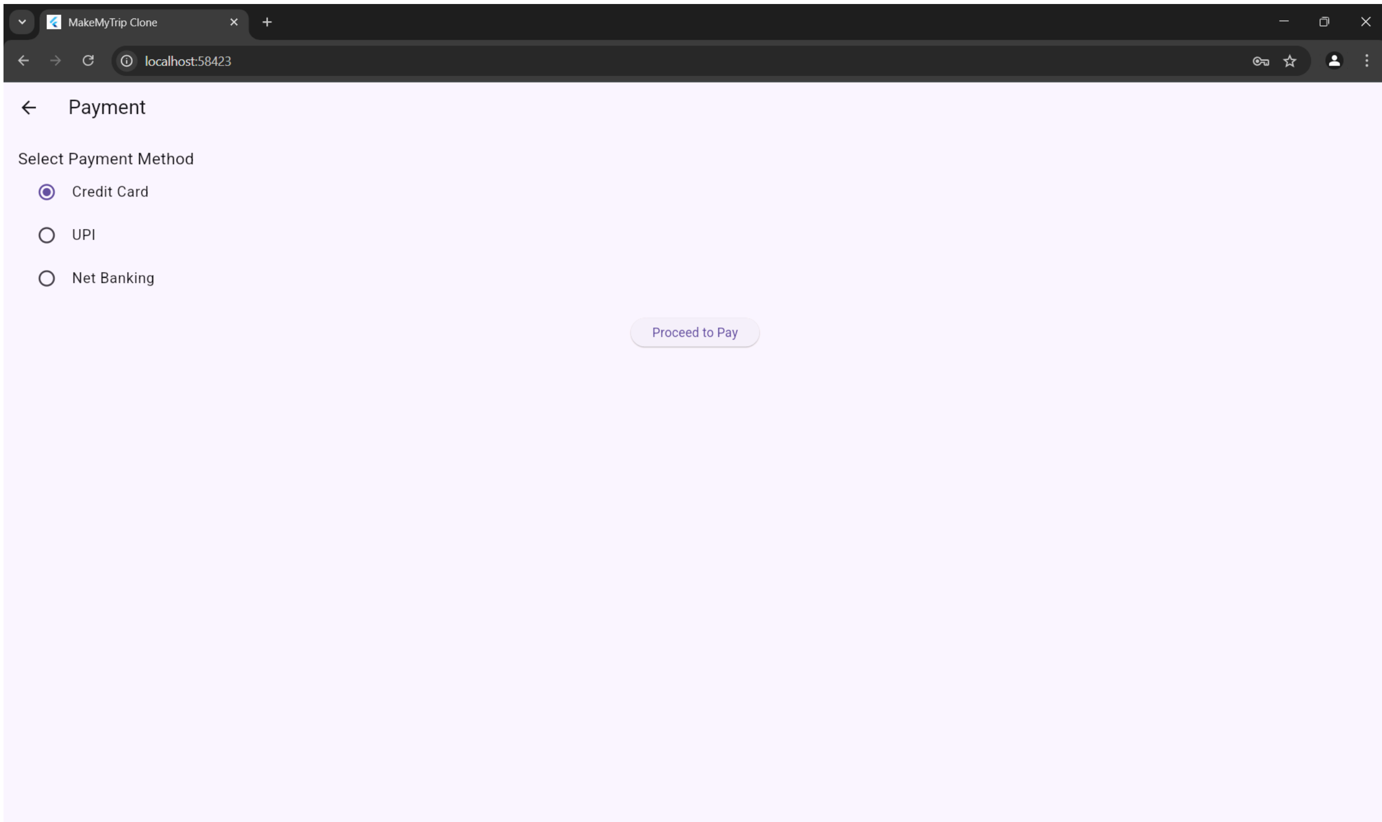


Book Trains

Rajdhani Express
Departs: 10:00 AM - Arrives: 6:00 PM

Shatabdi Express
Departs: 8:30 AM - Arrives: 2:00 PM

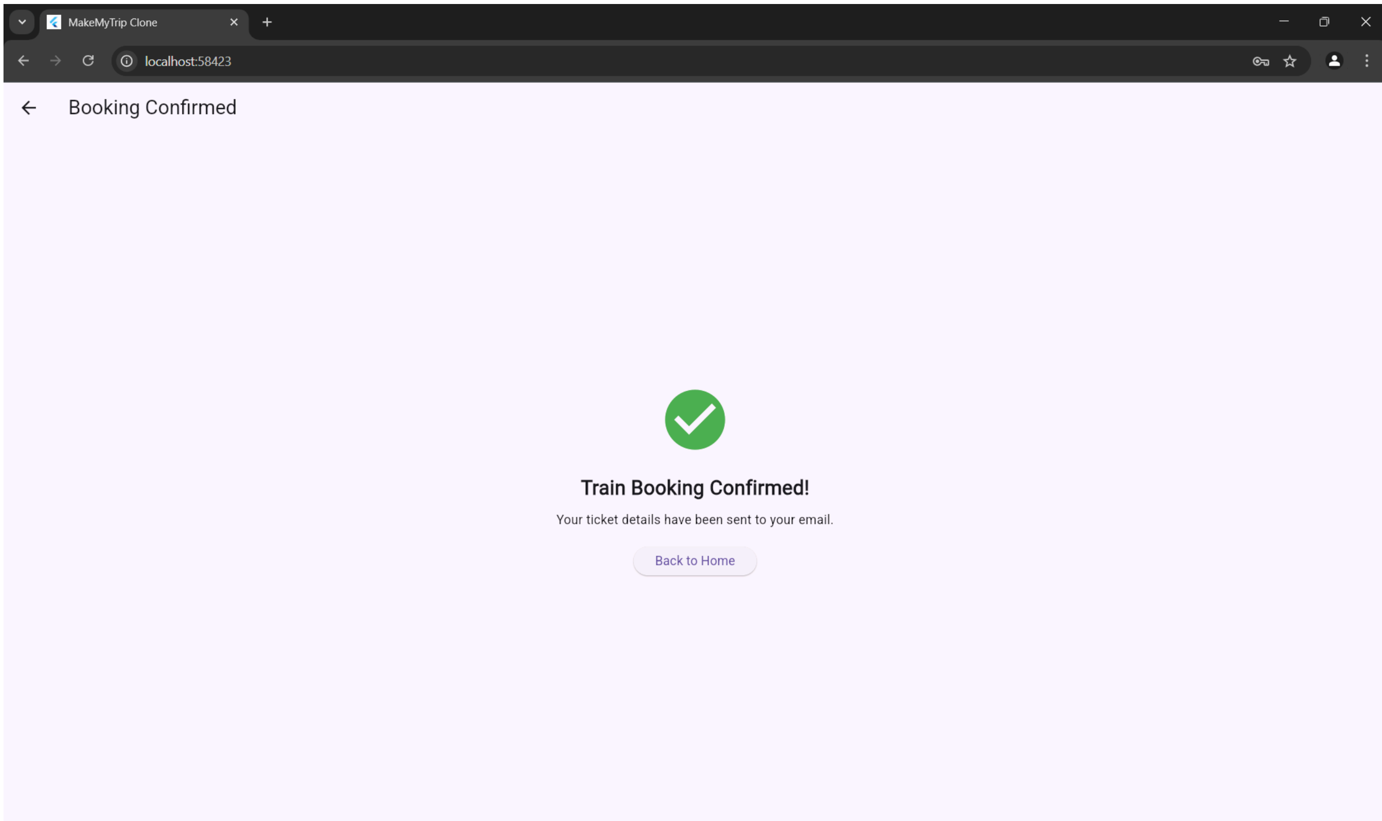
Duronto Express
Departs: 9:45 AM - Arrives: 5:30 PM



Payment

Select Payment Method

● Credit Card
○ UPI
○ Net Banking



Booking Confirmed

Train Booking Confirmed!

Your ticket details have been sent to your email.