MPL Experiment 5

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Aim: To apply navigation, routing and gestures in Flutter App.

Theory:

Navigation & Routing:
Flutter provides multiple ways to navigate between screens (pages):

1. **Using Navigator.push() and Navigator.pop()**
   Push a new screen onto the stack and pop it to return to the previous one.

2. **Named Routes**
   Define routes in MaterialApp and navigate using Navigator.pushNamed().

3. **GoRouter Package**
   A declarative approach to handle navigation more efficiently.

Gestures:
Flutter's GestureDetector and InkWell widgets help in detecting user interactions like taps, swipes, and long presses. Some common gestures include:

- **onTap:** Detects a tap event.
- **onDoubleTap:** Recognizes double taps.
- **onLongPress:** Detects a long press on a widget.
- **onHorizontalDrag & onVerticalDrag:** Detects drag/swipe motions.

Steps:
Step 1: Create a Flutter project and define multiple screens.
Step 2: Set up named routes in `MaterialApp`.
Step 3: Implement navigation using `Navigator.push()` and `Navigator.pushNamed()`.
Step 4: Use `GestureDetector` to detect taps, swipes, and long presses.
Step 5: Add buttons or swipes to navigate between screens.

Code:
```dart
import 'package:flutter/material.dart';
import 'package:firebase_core/firebase_core.dart';
import 'package:proj1/screens/login.dart';
import 'package:proj1/screens/RegisterPage.dart';
import 'package:proj1/screens/home.dart';
import 'package:proj1/screens/UsedCarScreen.dart';
```

```dart
import 'package:proj1/screens/FilteredUsedCarsScreen.dart';
import 'firebase_options.dart';

void main() async {
  WidgetsFlutterBinding.ensureInitialized();
  await Firebase.initializeApp(
    options: DefaultFirebaseOptions.currentPlatform,
  );
  runApp(const MyApp());
}

class MyApp extends StatelessWidget {
  const MyApp({super.key});

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      initialRoute: '/login', // Default route to Login Page
      routes: {
        '/register': (context) => const RegisterPage(),
        '/login': (context) => const LoginPage(),
        '/home': (context) => const HomePage(),
        '/usedCars': (context) => UsedCarScreen(),
      },
      onGenerateRoute: (settings) {
        if (settings.name == '/filteredCars') {
          final args = settings.arguments as Map<String, int>;
          return MaterialPageRoute(
            builder: (context) => FilteredUsedCarsScreen(
              minPrice: args['minBudget']!,
              maxPrice: args['maxBudget']!,
            ),
          );
        }
        return null;
      },
    );
  }
}
```
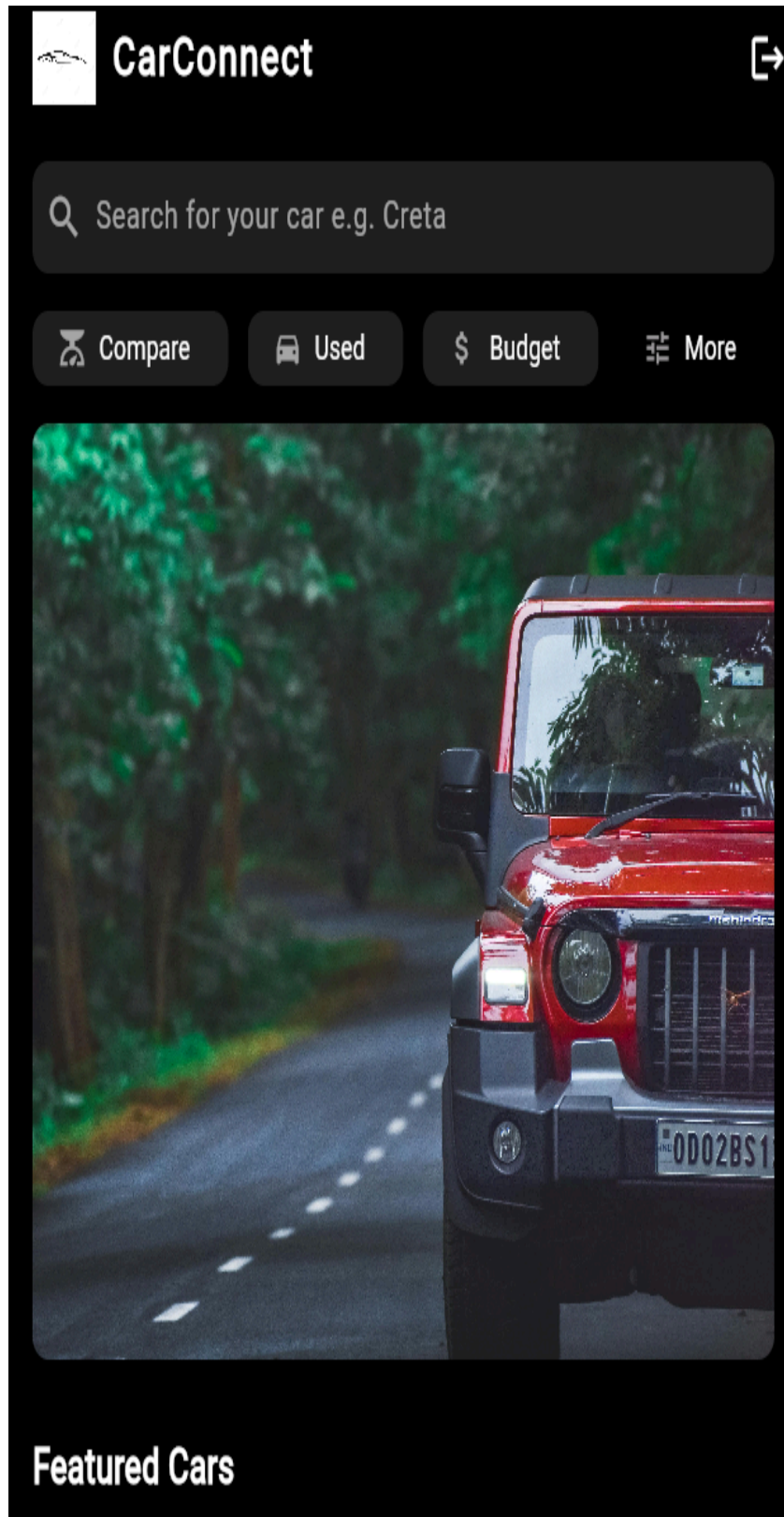
Output:

Select Car ▾ **VS** Select Car ▾

Compare

POPULAR CAR COMPARISONS

Tata Harrier
onwards

VS

Kia Sonet
onwards

BMW 3 Series
onwards

VS

Audi Q5
onwards

Car Comparison

Feature	MG Hector	Mahindra XUV700
Price	1500000	1400000
Engine	1.5L	2.2L
Mileage	14 kmpl	15 kmpl
Horsepower	143 HP	200 HP
Torque	250 Nm	450 Nm
Fuel Type	Petrol	Diesel
Transmission	CVT	Automatic
Seating Capacity	5	7

Choose your Budget

0 Lakh   50 Lakh

Find Used Car

Want to Sell Your Car?

✉ Get buyers' details via SMS and Email

$ Sell your car at best price

👥 Large number of genuine buyers

Sell Car Online

- 🚗 **Mahindra XUV700**
  14.0 Lakh

- 🚗 **Unknown Name**
  0.0 Lakh

- 🚗 **Kia Seltos**
  11.0 Lakh

- 🚗 **MG Hector**
  15.0 Lakh

- 🚗 **Audi Q5**
  66.0 Lakh

- 🚗 **Toyota Fortuner**
  33.0 Lakh

- 🚗 **Mercedes-Benz E-Class**
  00.0 Lakh

Car Name

car

Ex-Showroom Price (₹)/Your estimated price

1000000

Select Car Type

Mid-Size Car ▼

Interest Rate (%)

10

Loan Duration (Years)

2

Down Payment (₹, Optional)

10000

Get Cost Breakdown

Breakdown for Your Selected Car (Mid-Size Car)

Total On-Road Price (Without Loan) ₹1610500.00

Monthly EMI ₹73854.95

Total Cost with Loan & Interest ₹1772518.91

Show Detailed Breakdown

Detailed Cost Breakdown for Your Selected Car (Mid-Size Car)

Ex-Showroom Price	₹1000000.00
GST	₹280000.00
Cess	₹150000.00
Road Tax	₹100000.00
Insurance	₹50000.00
Registration	₹10000.00
Fastag	₹500.00
Accessories	₹20000.00
Total On-Road Price	**₹1610500.00**
Loan Amount	₹1600500.00
Monthly EMI	₹73854.95
Total Loan Payment	₹1772518.91

Close