

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:

```
import 'package:flutter/material.dart';
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:jiomart/Screens/product_grid.dart';
import '../screens/cart_page.dart';
import '../screens/myaccount.dart';
import '../widgets/category_list.dart';
```

```
import '../Screens/orders_page.dart';

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

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

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: const HomeScreen(),
    );
  }
}

class HomeScreen extends StatefulWidget {
  const HomeScreen({Key? key}) : super(key: key);

  @override
  _HomeScreenState createState() => _HomeScreenState();
}

class _HomeScreenState extends State<HomeScreen> {
  int _currentIndex = 0;

  final List<Widget> _pages = [
    HomeContent(),
    CategoryList(),
    OrdersPage(),
    MyAccountPage(),
  ];

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.blueAccent,
        title: Text(
          "JioMart",
          style: TextStyle(
            color: Colors.white,
```

```

        fontSize: 22,
        fontWeight: FontWeight.bold,
        fontFamily: 'Roboto', // Change to any font you like
      ),
    ),
    centerTitle: true, // Centers the logo text

    actions: [
      IconButton(
        icon: Icon(Icons.search, color: Colors.white),
        onPressed: () {
          // Add search functionality if needed
        },
      ),
    ],
  ),

  body: _pages[_currentIndex],
  bottomNavigationBar: BottomNavigationBar(
    currentIndex: _currentIndex,
    type: BottomNavigationBarType.fixed,
    selectedItemColor: Colors.blueAccent,
    unselectedItemColor: Colors.grey,
    onTap: (index) {
      setState(() {
        _currentIndex = index;
      });
    },
    items: [
      BottomNavigationBarItem(icon: Icon(Icons.home), label: 'Home'),
      BottomNavigationBarItem(icon: Icon(Icons.category), label: 'Categories'),
      BottomNavigationBarItem(icon: Icon(Icons.shopping_bag), label: 'Orders'),
      BottomNavigationBarItem(icon: Icon(Icons.person), label: 'Profile'),
    ],
  ),
);
}
}

class HomeContent extends StatefulWidget {
  @override
  _HomeContentState createState() => _HomeContentState();
}

```

```

class _HomeContentState extends State<HomeContent> {
  Map<String, int> cartQuantities = {};

  @override
  void initState() {
    super.initState();
    // Initialize quantities from existing cart items
    for (var item in cartItems) {
      cartQuantities[item['name']] = item['quantity'];
    }
  }

  // Function to fetch products from Firestore
  Future<List<Map<String, dynamic>>> fetchProductsForCategory(String category) async
  {
    List<Map<String, dynamic>> products = [];
    try {
      DocumentSnapshot categorySnapshot =
        await FirebaseFirestore.instance.collection("deals").doc(category).get();

      if (categorySnapshot.exists) {
        var categoryData = categorySnapshot.data() as Map<String, dynamic>;
        if (categoryData != null && categoryData.containsKey('products')) {
          var productList = categoryData['products'] as List<dynamic>;
          for (var product in productList) {
            products.add({
              'name': product['name'],
              'price': product['price'],
              'imageUrl': product['imageUrl'],
            });
          }
        }
      }
    } catch (e) {
      print("Error fetching category products: $e");
    }
    return products;
  }

  // Function to add/update product in cart
  void _updateCart(Map<String, dynamic> product, int quantity) {
    if (quantity <= 0) {
      // Remove product from cart if quantity is 0
      setState(() {

```

```

        cartItems.removeWhere((item) => item['name'] == product['name']);
        cartQuantities[product['name']] = 0;
    });
    return;
}

// Check if product already exists in cart
int existingIndex = cartItems.indexWhere((item) => item['name'] == product['name']);

setState(() {
  if (existingIndex >= 0) {
    // Update existing product quantity
    cartItems[existingIndex]['quantity'] = quantity;
  } else {
    // Add new product to cart
    cartItems.add({
      'name': product['name'],
      'price': product['price'],
      'imageUrl': product['imageUrl'],
      'quantity': quantity,
    });
  }
  // Update local quantity tracker
  cartQuantities[product['name']] = quantity;
});
}

@override
Widget build(BuildContext context) {
  return SingleChildScrollView(
    child: Column(
      crossAxisAlignment: CrossAxisAlignment.start,
      children: [
        Padding(
          padding: const EdgeInsets.all(8.0),
          child: Row(
            children: [
              Icon(Icons.location_on, color: Colors.black54),
              SizedBox(width: 5),
              Text("Mumbai 400020", style: TextStyle(fontSize: 16)),
              Spacer(),
              Icon(Icons.arrow_drop_down, color: Colors.black54),
            ],
          ),

```

```

),
SizeBox(height: 10),
Container(
  height: 150,
  margin: EdgeInsets.symmetric(horizontal: 10),
  decoration: BoxDecoration(
    borderRadius: BorderRadius.circular(10),
    image: DecorationImage(
      image: AssetImage('assets/banner.jpg'),
      fit: BoxFit.cover,
    ),
  ),
),
SizeBox(height: 10),
Padding(
  padding: const EdgeInsets.symmetric(horizontal: 10.0),
  child: Text(
    "BEST DEALS",
    style: TextStyle(fontSize: 18, fontWeight: FontWeight.bold),
  ),
),
SizeBox(height: 20),
Wrap(
  spacing: 16,
  runSpacing: 16,
  alignment: WrapAlignment.center,
  children: [
    _dealCard(context, 'Up to 50% Off', 'Biscuits', 'assets/biscuit.png'),
    _dealCard(context, 'Up to 30% Off', 'dairy', 'assets/dairy.png'),
    _dealCard(context, 'Up to 25% Off', 'fruits', 'assets/fruits.png'),
    _dealCard(context, 'Up to 25% Off', 'personal care', 'assets/personal care.png'),
    _dealCard(context, 'Up to 20% Off', 'beauty', 'assets/beauty.png'),
    _dealCard(context, 'Up to 20% Off', 'home care', 'assets/home care.png'),
  ],
),
SizeBox(height: 10),
Container(
  height: 150,
  margin: EdgeInsets.symmetric(horizontal: 10),
  decoration: BoxDecoration(
    borderRadius: BorderRadius.circular(10),
    image: DecorationImage(
      image: AssetImage('assets/banner2.png'),
      fit: BoxFit.cover,
    ),
  ),
),

```

```

        ),
      ),
    ),
    SizedBox(height: 20),
  ],
),
);
}

```

///  Fixed `_dealCard` method to fetch products before navigating

```

Widget _dealCard(BuildContext context, String discount, String category, String asset) {
  return FutureBuilder<List<Map<String, dynamic>>>(
    future: fetchProductsForCategory(category),
    builder: (context, snapshot) {
      if (snapshot.connectionState == ConnectionState.waiting) {
        return CircularProgressIndicator(); // Show loading indicator while fetching
      } else if (snapshot.hasError) {
        return Text('Error: ${snapshot.error}');
      } else if (!snapshot.hasData || snapshot.data!.isEmpty) {
        return Text('No products available');
      } else {
        List<Map<String, dynamic>> products = snapshot.data!;
        return GestureDetector(
          onTap: () {
            Navigator.push(
              context,
              MaterialPageRoute(
                builder: (context) => ProductGrid(products: products),
              ),
            ).then((_) {
              setState(() {}); // Refresh the HomeContent when returning from ProductGrid
            });
          },
          child: Column(
            children: [
              Container(
                height: 80,
                width: 80,
                decoration: BoxDecoration(
                  image: DecorationImage(image: AssetImage(asset), fit: BoxFit.cover),
                ),
              ),
              SizedBox(height: 5),
              Text(discount, style: TextStyle(color: Colors.green, fontSize: 12)),
            ],
          ),
        );
      }
    ),
  );
}

```

```
        Text(category.toUpperCase(), style: TextStyle(fontSize: 14, fontWeight:
FontWeight.bold)),
      ],
    ),
  );
}
},
);
}
}
```

Output:

23:13



11.0 KB/S



Search



**LOWEST PRICES
ON GROCERY**
**10-30 MINUTE
DELIVERY**

Download the App Now



BEST DEALS



Up to 50% Off
Biscuits, Drinks



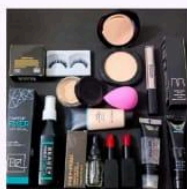
Up to 30% Off
Dairy Items



Up to 25% Off
Fruit & Vegetable



Up to 25% Off
Personal Care



Up to 20% Off
Beauty Products



Up to 20% Off
Home Care

Get Grocery at Incredibly LOW PRICES.

FREE HOME
DELIVERY

NO MINIMUM
ORDER



Home



Categories



Orders



Profile

JioMart



DAIRY



FRUITS



VEGETABLES



COOKING ESSENTIALS



BABYCARE



STATIONERY



KITCHENWARE



Home



Categories



Orders



Profile



My Orders

Your Last Order:

No orders yet!



Home



Categories



Orders








Profile



Sneha Patra

patrasneha21@gmail.com

My Account

-  My Notifications >
-  My List >
-  Delivery Addresses >
-  PAN Card Information >
-  MilkBasket >

Payment Modes


-  JioMart Wallet >

 Sign Out


Home


Categories


Orders


Profile

← My Cart



Oreo Pokemon Cream...

₹30

− 1 +



Apple Red Delicious 4 ...

₹189

− 1 +



Total: ₹219.00

Proceed to Checkout

Checkout Page

Delivery Address

ion, Mumbai, Maharashtra 400022, India

Payment Method

Cash on Delivery 

Place Order

