MAD PWA LAb 5

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

Theory:

Navigation and Routing:

1. **Navigator:**

- Definition: In Flutter, the Navigator class is responsible for managing a stack of Route objects, where each route represents a screen or page in the app.
- Purpose: It facilitates navigation between different parts of the app, managing transitions and maintaining a hierarchical structure of screens.

2. **MaterialPageRoute:**

- Definition: MaterialPageRoute is a commonly used route in Flutter that provides a standard Android/iOS page transition when navigating to a new screen.
- Usage: It is initiated by calling Navigator.of(context).push(MaterialPageRoute(builder: (context) => NextScreen()));.
- Benefit: Offers a consistent and platform-specific user experience.

3. **Named Routes:**

- Definition: Named routes provide a way to organize routes using strings instead of widget constructors.
- Usage: Define named routes in the routes parameter of MaterialApp.
- Navigation: Navigate to a named route using Navigator.pushNamed(context, '/next');.

Gestures:

1. **GestureDetector:**

- Definition: GestureDetector is a widget that enables gesture recognition in a subtree of the widget tree.
- Gestures: It supports various gestures like onTap, onDoubleTap, onLongPress, onPanUpdate, etc.
- Usage: Wrap the desired widget with GestureDetector and handle the required gestures.

2. **InkWell:**

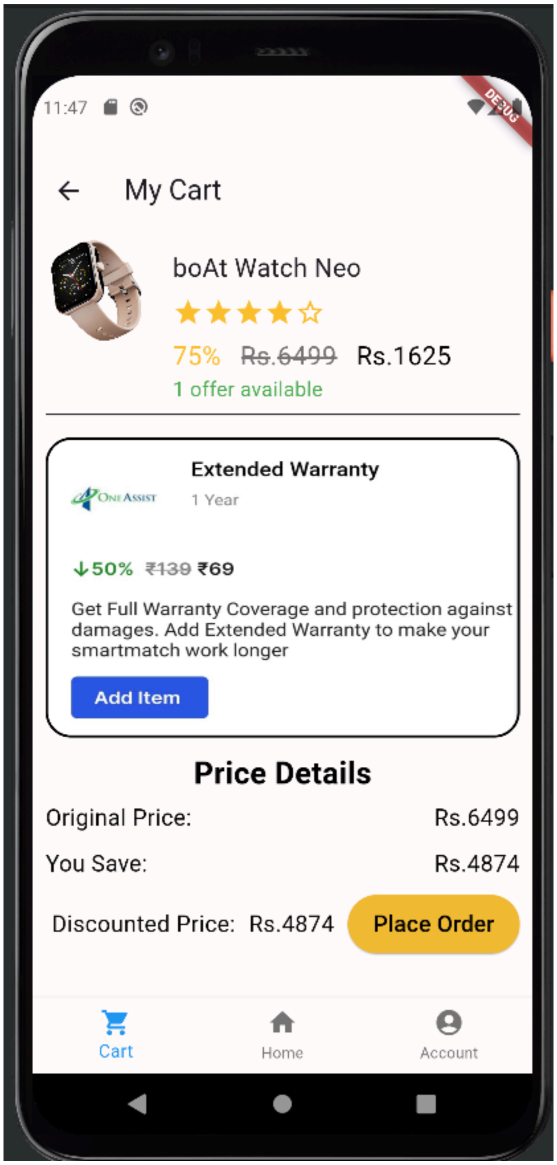
- Definition: InkWell is a material design widget that provides a visual ink splash on tap.
- Usage: It simplifies the implementation of common tap gestures and adds a visual touch feedback.

3. **Draggable:**

- Definition: Draggable is a widget that allows dragging of its child within a designated area.
- Usage: It is useful for creating draggable components, like draggable tiles or cards.
- Callbacks: You can specify callbacks like onDraggableCanceled to handle events when dragging is canceled.

CODE:

```
class CartScreen extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('My Cart'),
      ),
      body: Padding(
        padding: const EdgeInsets.all(10.0),
        child: SingleChildScrollView(
          scrollDirection: Axis.vertical,
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.center,
            children: [
              // Product 1
              _buildCartItem(
                imagePath: 'assets/watch.png',
                productName: 'boAt Watch Neo',
                stars: 4,
                discountPercentage: 75,
                originalPrice: '~~6499'~~,
                discountedPrice: '1,599',
                offerText: '1 offer available',
              ),
              // Divider between products
              Divider(
                color: Colors.black,
                thickness: 1.0,
              ),
              // Image below the divider
              SizedBox(
                height: 250.0,
                width: 400.0,
                child: Padding(
                  padding: EdgeInsets.only(top: 10.0, bottom: 5.0),
                  child: Container(
                    decoration: BoxDecoration(
                      borderRadius: BorderRadius.circular(20.0),
                      border: Border.all(
                        color: Colors.black,
                        width: 2.0,
                      ),
                    ),
                    child: ClipRRect(
                      borderRadius: BorderRadius.circular(18.0),
                      child: Image.asset(
                        'assets/warranty.jpeg',
                        fit: BoxFit.fill,
                      ),
                    ),
                  ),
                ),
              ),

              SizedBox(height: 6.0),
              // Price details
              Padding(
                padding: EdgeInsets.only(bottom: 5.0),
                child: Text(
                  'Price Details',
                          style: TextStyle(
                            fontSize: 24.0,
                            color: Colors.black,
                            fontWeight: FontWeight.bold,
                          ),
                        ),
                      ),

                      Row(
                        mainAxisAlignment: MainAxisAlignment.spaceBetween,
                        children: [
                          Text(
                            'Original Price:',
                            style: TextStyle(
                              fontSize: 18.0,
                              color: Colors.black,
                            ),
                          ),
                          Text(
                            'Rs.6499',
                            style: TextStyle(
                              fontSize: 18.0,
                              color: Colors.black,
                            ),
                          ),
                        ],
                      ),
                      SizedBox(height: 10.0),
                      // Calculating discounted price
                      _buildDiscountedPrice(6499, 75),
                      Divider(
                        color: Colors.black,
                        thickness: 1.0,
                      ),
                    ],
                  ),
                ),
              ),
              // Bottom Navigation Bar
              bottomNavigationBar: SizedBox(
                height: 80.0,
                child: Container(
                  margin: EdgeInsets.only(top: 21.0),
                  child: BottomNavigationBar(
                        items: const <BottomNavigationBarItem>[
                          BottomNavigationBarItem(
                            icon: Icon(Icons.shopping_cart),
                            label: 'Cart',
                          ),
                          BottomNavigationBarItem(
                            icon: Icon(Icons.home),
                            label: 'Home',
                          ),
                          BottomNavigationBarItem(
                            icon: Icon(Icons.account_circle),
                            label: 'Account',
                          ),
                        ],
                        selectedItemColor: Colors.blue,
                        onTap: (index) {
                          if (index == 2) {
                            // Check if 'Account' is tapped
                            Navigator.of(context).push(
                              MaterialPageRoute(
                                builder: (context) => AccountScreen(),
                              ),
                            );
                          }
                          if (index == 1) {
                            Navigator.of(context).push(
                              MaterialPageRoute(
                                builder: (context) => HomeScreen(),
                              ),
                            ); // Go back to the HomeScreen
                          }
                        },
                      ),
                    ),
                  ),
                );
              }

              Widget _buildDiscountedPrice(double originalPrice, int discountPercentage) {
                double discountedPrice = (discountPercentage / 100) * originalPrice;

                return Column(
                  children: [
                    Row(
                mainAxisAlignment: MainAxisAlignment.spaceBetween,
                children: [
                  Text(
                    'You Save:',
                    style: TextStyle(
                      fontSize: 18.0,
                      color: Colors.black,
                    ),
                  ),
                  Text(
                    'Rs.${discountedPrice.toStringAsFixed(0)}',
                    style: TextStyle(
                      fontSize: 18.0,
                      color: Colors.black,
                    ),
                  ),
                ],
              ),
              SizedBox(height: 10.0),
              // Display Discounted Price
              Row(
                mainAxisAlignment: MainAxisAlignment.spaceBetween,
                children: [
                  Text(
                    ' Discounted Price:',
                    style: TextStyle(
                      fontSize: 18.0,
                      color: Colors.black,
                    ),
                  ),
                  Text(
                    'Rs.${discountedPrice.toStringAsFixed(0)}',
                    style: TextStyle(
                      fontSize: 18.0,
                      color: Colors.black,
                    ),
                  ),
                  Container(
                    margin: EdgeInsets.symmetric(vertical: 0.0),
                    child: ElevatedButton(
                      onPressed: () {
                        // Add functionality for placing an order
                      },
                      style: ElevatedButton.styleFrom(
                              primary: Colors.yellow[700], // Yellow color
                              padding:
                                  EdgeInsets.symmetric(horizontal: 20.0, vertical: 10.0),
                            ),
                            child: Text(
                              'Place Order',
                              style: TextStyle(
                                fontSize: 18.0,
                                color: Colors.black,
                              ),
                            ),
                          ),
                        ),
                      ],
                    ),
                  ],
                );
              }

              Widget _buildCartItem({
                required String imagePath,
                required String productName,
                required int stars,
                required int discountPercentage,
                required String originalPrice,
                required String discountedPrice,
                required String offerText,
              }) {
                double discountedPriceValue =
                    double.parse(originalPrice.replaceAll('', '')) -
                        (discountPercentage / 100) *
                            double.parse(originalPrice.replaceAll('', ''));

                return Container(
                  margin: EdgeInsets.only(right: 16.0),
                  child: Row(
                    crossAxisAlignment: CrossAxisAlignment.start,
                    children: [
                      // Image on the left
                      Image.asset(
                        imagePath,
                        height: 80.0,
                        width: 80.0,
                      ),
              SizedBox(width: 20.0),
              // Text on the right
              Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  // Box below the image with "Qty: 1" inside
                  SizedBox(height: 8.0),
                  Text(
                    productName,
                    style: TextStyle(fontSize: 20.0),
                  ),
                  SizedBox(height: 8.0),
                  // Star rating
                  Row(
                    children: List.generate(
                      5,
                      (index) => Icon(
                        index < stars ? Icons.star : Icons.star_border,
                        color: Colors.yellow[700],
                      ),
                    ),
                  ),
                  SizedBox(height: 8.0),
                  // Discount details
                  Row(
                    children: [
                      // Percentage text
                      Text(
                        '$discountPercentage%',
                        style: TextStyle(
                          fontSize: 20.0,
                          color: Colors.yellow[700],
                        ),
                      ),
                      SizedBox(width: 15.0),
                      // Original price
                      Text(
                        '~~Rs.~~$originalPrice ',
                        style: TextStyle(
                          fontSize: 20.0,
                          color: Colors.grey[600],
                        ),
                      ),
                      SizedBox(width: 10.0),
                                // Discounted price
                                Text(
                                  'Rs.${discountedPriceValue.toStringAsFixed(0)}',
                                  style: TextStyle(
                                    fontSize: 20.0,
                                    color: Colors.black,
                                  ),
                                ),
                              ],
                            ),
                            // Offer text
                            Text(
                              offerText,
                              style: TextStyle(
                                fontSize: 16.0,
                                color: Colors.green,
                              ),
                            ),
                          ],
                        ),
                      ],
                    ),
                  );
                }
              }
```



My Cart

boAt Watch Neo

★★★★☆

75% ~~Rs.6499~~ Rs.1625

1 offer available

Extended Warranty

1 Year

↓50% ~~₹139~~ ₹69

Get Full Warranty Coverage and protection against damages. Add Extended Warranty to make your smartmatch work longer

Price Details

Original Price: Rs.6499

You Save: Rs.4874

Discounted Price: Rs.4874

CONCLUSION:

Thus we studied navigation,routing and gesture features in Flutter Application.