MAD Assignment 3: Interactive Event-Based Flutter App

```dart
import 'package:flutter/material.dart';

void main() {
  runApp(MyInteractiveApp());
}

class MyInteractiveApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Interactive App',
      home: InteractiveHome(),
    );
  }
}

class InteractiveHome extends StatefulWidget {
  @override
  _InteractiveHomeState createState() => _InteractiveHomeState();
}

class _InteractiveHomeState extends State<InteractiveHome> {
  Color _backgroundColor = Colors.white;
  final Color _originalColor = Colors.white;
  final Color _pressedColor = Colors.lightBlue.shade100;

  String _liveInput = "";

  void _showSnackBar(BuildContext context, String message) {
    ScaffoldMessenger.of(context).showSnackBar(SnackBar(
      content: Text(message),
      duration: Duration(seconds: 1),
    ));
  }

  void _changeBackgroundColor() {
    setState(() {
      _backgroundColor = _pressedColor;
    });
  }

  void _resetBackgroundColor() {
    setState(() {
      _backgroundColor = _originalColor;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
```

```
backgroundColor: _backgroundColor,
appBar: AppBar(title: Text('MAD Assignment 3')),
body: Padding(
  padding: const EdgeInsets.all(20),
  child: Column(
    crossAxisAlignment: CrossAxisAlignment.center,
    children: [
      Text(
        'Welcome to the Interactive Flutter App!',
        style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),
      ),
      SizedBox(height: 20),

      // Buttons
      ElevatedButton(
        onPressed: () => _showSnackBar(context, 'Button Clicked'),
        child: Text('Click Me'),
      ),
      ElevatedButton(
        onLongPress: _changeBackgroundColor,
        child: Text('Long Press Me'),
        onPressed: () {},
      ),
      ElevatedButton(
        onPressed: _resetBackgroundColor,
        child: Text('Reset'),
      ),
      SizedBox(height: 20),

      // GestureDetector
      GestureDetector(
        onTap: () => _showSnackBar(context, "Single Tap Detected"),
        onDoubleTap: () => _showSnackBar(context, "Double Tap Detected"),
        child: Container(
          height: 100,
          width: double.infinity,
          color: Colors.amber,
          child: Center(
            child: Text(
              'Tap or Double Tap Here',
              style: TextStyle(fontSize: 18),
            ),
          ),
        ),
      ),
      SizedBox(height: 20),

      // TextField
      TextField(
        decoration: InputDecoration(labelText: 'Type something...'),
        onChanged: (value) {
          setState(() {
            _liveInput = value;
```

```dart
              });
              print("Live Input: \$value");
            },
            onSubmitted: (value) {
              print("Submitted: \$value");
            },
          ),
          SizedBox(height: 10),
          Text('Live Input: \$_liveInput'),
        ],
      ),
    ),
  );
}
}
```