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AI-generated content may be incorrect.**CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**FACULTY OF TECHNOLOGY AND ENGINEERING**

**CHANDUBHAI S. PATEL INSTITUTE OF TECHNOLOGY**

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING**

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| **Subject :** Mobile Application Development | **Semester:** 5 |
| **Subject Code:** AIML308 | **Academic Year :**2025-26(ODD) |

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**Practical 1**

**Problem Definition**

You are building a mobile application where users navigate through multiple screens like login, dashboard, and profile. Create a basic multi-screen Flutter app with navigation, passing data between pages.

**Technical Approach:**

- State Management: Uses StatefulWidget with setState() for UI updates in login and dashboard screens.

- Navigation: Named routes in MaterialApp for screen transitions (pushReplacementNamed for login→dashboard, pushNamed for dashboard→profile).

- Data Passing: Route arguments via ModalRoute.of(context) for passing user data between screens.

- Core Widgets: Scaffold, TextField, ElevatedButton, Text; no external packages used.

**File Structure:**

lib/

├── main.dart # Application entry point with MaterialApp and route configuration

├── login.dart # Login screen with form inputs and navigation to dashboard

├── dashboard.dart # Dashboard screen displaying user data and navigation to profile

└── profile.dart # Profile screen showing user details with back navigation

**Screenshots:**

A screenshot of a computer

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**Key Questions:**

**1. How does navigation work in Flutter?**

Ans: Navigation managed by Navigator widget using a stack of Route objects.In this project: Named routes defined in MaterialApp (main.dart). pushReplacementNamed (login → dashboard): Replaces current screen, passes arguments. pushNamed (dashboard → profile): Adds to stack, allows return via pop().

2. How can data be passed between screens?

Ans: - Data passed via route arguments in RouteSettings.

Sender: Include Map in `arguments` parameter of navigation methods.

Receiver: Access via ModalRoute.of(context).settings.arguments.

Example: Login passes 'name' and 'email' to dashboard and profile.

3. What is the difference between push and pushReplacement?

Ans: push(): Adds new screen to navigation stack; allows back navigation.

pushReplacement(): Replaces current screen; removes from history.

Usage: pushReplacementNamed for login (no return), pushNamed for profile (allow back).

**Key Skills to be Understand:**

Widget Tree, Navigation routing