National University of Sciences and Technology (NUST)
School of Electrical Engineering and Computer Science

DEPARTMENT OF COMPUTING

CS-415: Mobile Application Development

Class: BESE12-AB

Lab 07: <u>Designing UI, Context, Navigation Bars</u>

CLO-2: Design data-driven Mobile Interfaces using advanced design and development techniques

CLO-4: Display proficiency using modern tools and framework usage by developing interactive mobile applications

Date: 11th Mar 2025

Time: 9:45 - 11:55

Lab Instructor: Mr. Moeed Ahmed

Class Instructor: Engr. Naema Asif

Lab 07: Designing UI, Context, Navigation Bars

Introduction

This lab will focuses on designing UI, Passing Context and the different types of Navigation bar that includes Drawer Navigation, Top Tab Navigation Bar, Bottom Tab Navigation Bar.

Objectives

In this lab you will practice:

- Designing UI (Use Different Widgets)
- Passing Context
- Creating multiple Navigation bars
- Navigation routes

Tools/Software Requirements

- Android Studio Ladybug Feature Drop | 2024.2.2
- Android Emulator (35.3.11) Stable *(Optional, depends on system's requirement)*
- Visual Studio Code (1.97.2 - Latest)
- Flutter Windows Android SDK 3.29.0 (stable)
- Flutter Lab Online

Lab Task-1: Designing UI

Create an user interface for an app by following steps:

1. First, create a simple splash screen and add any logo on splash screen. Choose any color for the background of the screen

Add Any Logo on
splash screen

2. After splash screen create a Login screen as shown given below. You need to add Logo, Text Field, icons, Labels, Place holders and button Widgets

3. Password Text Field should be secure Text Entry like shown below its means that whenever user enter his/her password it's not visible to others

4. When user click on eye button password should be visible to user and when click again on eye button password is hide so you need to hide/unhide password by clicking on eye button

5. You need to add check/uncheck box for a Remember me functionality. When user click on Remember me icon then check box is checked and when click again it's un-check
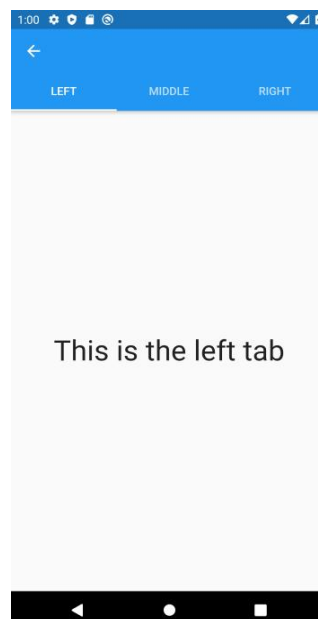

6. You need to validate a login screen
   a) Show an appropriate message to user when fields are empty
   b) Validate an email
   c) Validate a password (Minimum 8 characters, at least one uppercase Alphabet, one special character, one number)
7. Finally show any validation errors in a SnackBar at the bottom of the screen

Lab Task-2: Top Tab Navigation Controller

Continuing with task#1 and using same above code; implement a Top Navigation Bar after pressing a Login button as shown below:
- Create three screens and add a label in center and set label texts for all 3 screens
- Create three top tab menu items
- When user click on any top tab menu item that specific screen is visible to user
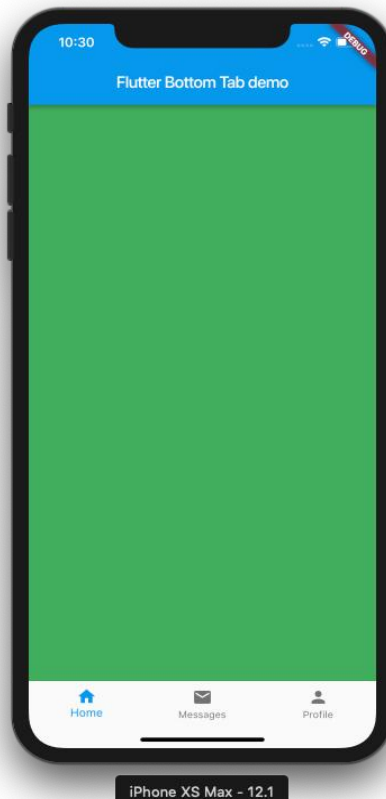- User can switch between screen by clicking on tabs

Lab Task-3: Bottom Tab Navigation Controller

Continuing with task#1 and using same above code; implement a Bottom Navigation Bar after pressing a Login button as shown below:

- Create 3 bottom tabs, each having a different screen with a label in the middle
- When user click on any bottom tab it becomes highlighted as shown below
- When user click on any bottom tab menu item that specific screen is visible to user
- User can switch between screen by clicking on bottom tabs

Useful Resources:

Below is the list of useful resources to help you in solving above tasks:

- Adding assets and images
- Pass arguments to a named route
- Navigator class
- Navigate to a new screen and back
- Send data to a new screen
- Return data from a screen
- Navigate with named routes
- Return data from a screen
- Navigate with named routes
- Tab Controller

Deliverable:

You need to submit the code files for all above lab tasks along with the report having screenshots of your code and UI before the deadline.