BSc (Hons) in Information Technology
Year 4

Assignment - 2

SE4020 – Mobile Application Design and Development   Semester 1, 2023

Marks – 25%   **Deadline – 16ᵗʰ June 2023**

Build a fully-functional iOS app with a user interface that incorporates several SwiftUI components, such as labels, buttons, text fields, sliders, and pickers. The app should have at least two screens that can be navigated between using a navigation controller. The app should also include data persistence by utilizing Core Data or any other method of your choice.

Here are some additional requirements to consider for the assignment:

1. This app can be an extension of your idea for Assignment 1, but it should go well beyond what you have done in Assignment 1. You are however encouraged to tryout something that is more challenging that what you have used in Assignment 1.
2. The app should have a clear purpose and target user. It can be anything from a productivity app, social media app, or entertainment app.
3. The user interface should be visually appealing and easy to use. You should aim to create an app that has a professional look and feel.
4. The app should incorporate various user interface elements to display data and accept user input. For example, you could use a picker view to allow the user to select options, or a slider to adjust values.
5. The app should utilize best practices in mobile app design, including responsive layouts, appropriate use of color, and typography.
6. The app should be thoroughly tested to ensure it works as expected and is free of bugs.
7. You should provide a detailed write-up explaining your design choices, implementation decisions, and any challenges you faced during the development process.
8. You should also present a demonstration of your app to the class, highlighting its key features and functionality.
9. You are expected to try out one of the additional ios libraries mentioned in the last point in the rubric given

Submission Guidelines

1. This is an individual Assignment.
2. Think of your own problem and solution, please do not refer to solutions and problems available in public.
3. Please do not discuss or share your assignment ideas with others, since this is an open ended assignment, it is not possible for two submissions to be similar.
4. You are expected to design and write code on your own for this assignment. You should not use any code written by anyone else or any code available in the internet.
5. You should not use any AI generated code for your submission e.g. using GitHub CoPilot, ChatGPT, GhostWriter or any similar tools.

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6. If you are referring to tutorials on the web, we still expect you to write your own code. If the code that you submitted is similar to code available in the internet, we would suspect it to be plagiarized.

Marking Rubric

App Functionality | 20 |

- Functionality (15): Does the app work as intended? Does it incorporate at least two screens with navigation between them? Does it persist data using Core Data or any other method?
- Error Handling (5): Are errors handled gracefully? Are any errors identified and handled appropriately?

User Interface Design | 20 |

- Visual Design (10): Is the visual design of the user interface appealing and consistent? Are appropriate colors, fonts, and layouts used?
- Usability (10): Is the user interface easy to use and navigate? Does it provide clear feedback to the user?
- Note : Refer to https://developer.apple.com/design/

SwiftUI Knowledge | 20 |

- Code Quality (10): Does the code demonstrate a good understanding of Swift and SwiftUI? Is the code well-organized and readable? Are best practices followed, such as naming conventions and separation of concerns?
- UI Components (5): Are SwiftUI components used effectively to build the user interface? Are they customized appropriately?
- Advanced Concepts (5): Does the code demonstrate an understanding of advanced iOS development concepts such as custom built components.

Testing and Debugging | 10 |

- Testing (10): Has the app been thoroughly tested, including unit tests and UI tests? Are tests designed to cover all functionality and edge cases?

Documentation | 10 |

- Design (4): Is there a detailed write-up explaining design choices, including user interface design and user experience considerations?
- Implementation (4): Is there a clear explanation of implementation decisions, including the use of third-party libraries or APIs?
- Challenges (2): Are any challenges faced during the development process identified and explained?

Overall Quality | 5 |

- Attention to Detail (2): Is there a high level of attention to detail throughout the app, including user interface design and code quality?
- Creativity (2): Is there evidence of creativity in the app's design or functionality?
- Professionalism (1): Does the app demonstrate a high level of professionalism, including appropriate use of language and visuals?

Incorporating additional ios Libraries | 15 |

- Appropriate use of any one of these libraries
  - https://developer.apple.com/machine-learning/
  - https://developer.apple.com/augmented-reality/
  - https://developer.apple.com/maps/
  - https://developer.apple.com/health-fitness/
  - https://developer.apple.com/games/
  - https://developer.apple.com/education/
  - https://developer.apple.com/localization/