



United International University (UIU)

Dept. of Computer Science & Engineering (CSE)

Final Exam, Trimester: Summer 2023

Course Code: CSI 321/CSE 3421, Course Title: SOFTWARE ENGINEERING

Total Marks: 40, Duration: 2 hours

Any examinee found adopting unfair means will be expelled from the trimester/ program as per UIU disciplinary rules.
(Answer All Questions)

1. Draw an UML diagram for the following scenario: [CO2] [8 Marks]
Visual Studio Code is an IDE which is used for writing and editing codes in different languages. The IDE supports programming languages such as C, Java, Python, and normal Text as well. It currently has different text styles such as Textual, Graphical and Colorful. The IDE supports themes such as Dracula and Heavenly. The Visual Studio Code team wants to add annotations to their codes such as Comments and Diagrams.
2. (a) State the Schneiderman's 8 Golden Rules of UI Design Consideration. Which of the rules are violated in the UI given in Figure 1? [CO1] [5 Marks]



Figure 1(a): Laptop View



Figure 1(b): Mobile View

- (b) Explain the following terms: [CO2] [3 Marks]
- i) Native App
 - ii) Web App
 - iii) API

3. (a) Let's say Mr. X is a new hire at a multinational corporation. Since joining the organization, he has seen that the manager gives him assignments that are above his scope of expertise and fails to give him credit once he completes the work. He also feels that he is not given his deserved amount of salary. He is also not receiving any kind of help from other developers. Which of the ethics principles are violated in this scenario? Explain. [CO3] **[5 Marks]**
- (b) What is Docker? Why is it useful? Explain with a suitable example. [CO2] **[3 Marks]**
4. (a) What are the major differences between Microservice Architecture and Event-Driven Architecture? Explain the two architectures in depth stating their advantages and disadvantages. Give a suitable example for each to illustrate your explanation. [CO2] **[5 Marks]**
- (b) What is the key difference between Adapter pattern and Decorator pattern? How is the State pattern and Strategy pattern different? Explain with suitable examples. [CO2] **[3 Marks]**
5. Find the **Earliest Start, Earliest Finish, Latest Start, Latest Finish** and **Critical Path** using the Critical Path Method for the following tasks: [CO3] **[8 Marks]**

Tasks	Duration	Precedents
A	10	-
B	5	-
C	7	B
D	9	A,B
E	6	B,D
F	10	E
G	14	D,F
H	16	-
I	13	H
J	18	I
K	12	G,J
L	10	H