



(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS
SECOND YEAR FIRST SEMESTER**

**FOR THE DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)**

**COURSE CODE : CSC 210
COURSE TITLE : OBJECT ORIENTED
PROGRAMMING II**

DATE: 14/12/2022

TIME: 2.00 P.M - 4.00 P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

Question 2**(20 marks)**

- a. Write the code to generate the GUI in Figure 1 below by first designing the layout:

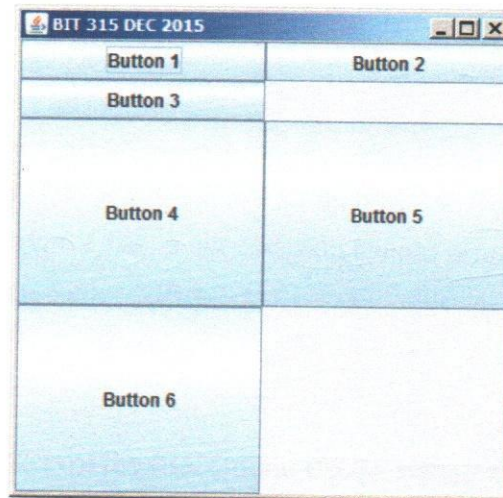
[8 marks]

Figure 1: GUI Layout

- b. You are designing a GUI that uses menus and your GUI has a menu with the title “Year 3 options” which in turn has menu items named “Software”, “Networking”, and “Engineering”. Write Java statements to create the menu with its items as described and add it to the menu bar. **[6 marks]**
- c. Write the code that will display the text “Software engineers design, develop, and test software and applications for computers” in the middle of the JFrame when the menu item “Software” is selected. **[6 marks]**

Question 3**(20 marks)**

- a. Show how you define a customized exception SecurityCheckException that displays the message “Security violation!!!” when thrown. **[6 marks]**
- b. Define an exception class called FileNotFoundException. The class should have a constructor with no parameters. If an exception is thrown with this zero-argument constructor, getMessage should return “File Not Found!” The class should also have a constructor with a single parameter of type String. If an exception is thrown with this constructor, then getMessage returns the value that was used as an argument to the constructor. **[8 marks]**

- c. Test scores should fall between 0 and 100. Assume an Exception called TestScoreException has been implemented and imported. Write code to input 10 test scores, compute their average, but throw a TestScoreException in case any inputs violate the proper range.

[6 marks]

Question 4

(20 marks)

- a. Suppose a program is required to encrypt file by adding 5 to every byte in the file. Write a program to create the encrypted file. Your program should prompt the user to enter an input file name and an output file name and should save the encrypted version of the input file to the output file.

[10 marks]

- b. Now write a program to decrypt the file. Output the decrypted file to the screen monitor.

[10

marks]

Question 5

(20 marks)

You are provided with a window in Figure 2 below. Study it and answer the questions that follow.

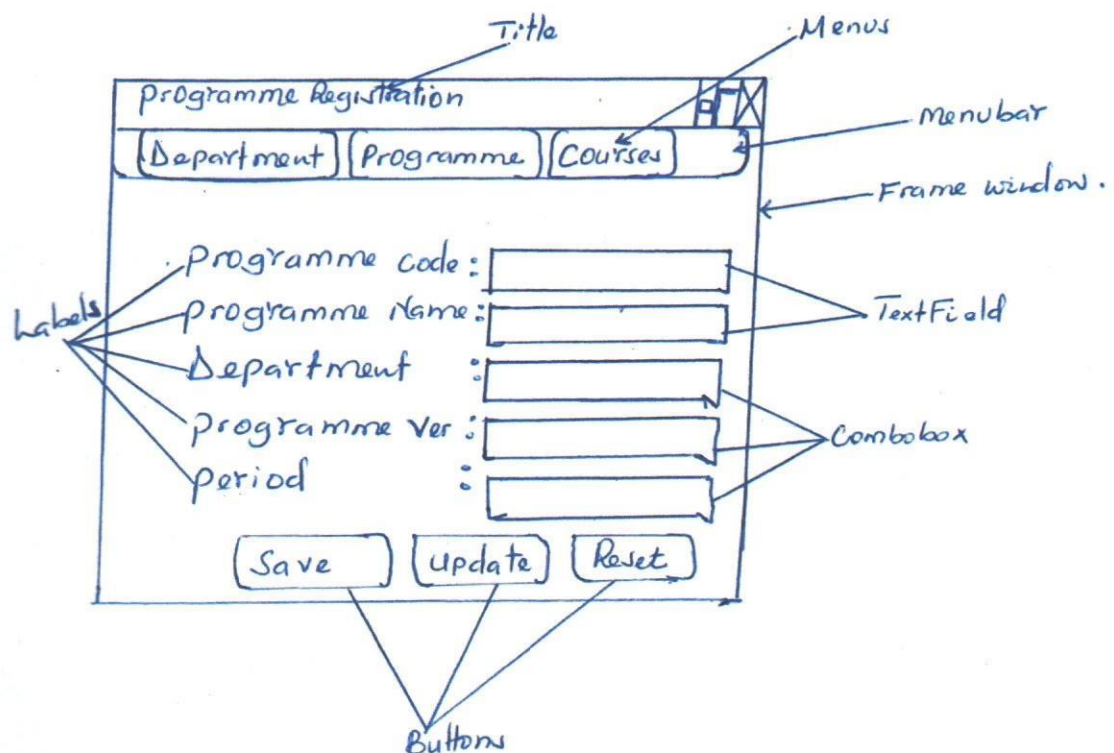


Figure 2: Programme Registration

a) Using relevant GUI objects, Data values for comboboxes and layout managers, write a java program that creates the window in Figure 2. **[10 marks]**

b) Using relevant Dialog boxes, write java code extract that will:

- Show error message with a String argument “Ensure all the field area entered!!” when save Button is clicked on.
- Show a dialog box for confirmation with a String argument (“Are you sure you want to Update?”) if update is clicked on.
- Show an information message “Reset is done successfully. “, when Reset button is clicked on.

[10 marks]