



(Knowledge for Development)

KIBABII UNIVERSITY (KIBU)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

END OF SEMESTER EXAMINATION

2021/2022 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER EXAMINATION

FOR THE DEGREE OF BACHELORS OF SCIENCE IN

(INFORMATION TECHNOLOGY)

COURSE CODE: BIT 221

COURSE TITLE: EVENT DRIVEN PROGRAMMING

DATE: 12/05/2022 TIME: 9.00 A.M. – 11.00 A.M.

2HRS

INSTRUCTIONS TO CANDIDATES:

ANSWER QUESTION ONE AND ANY OTHER TWO.

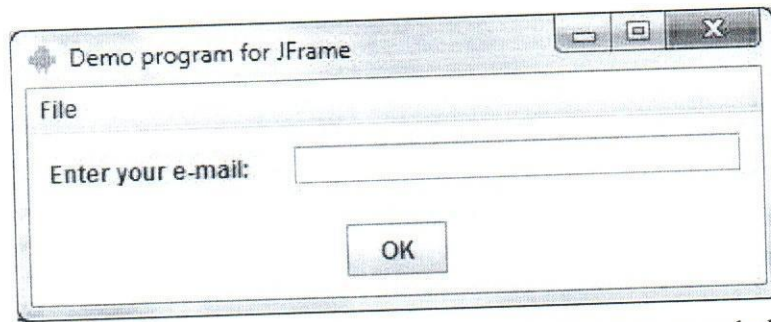
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QUESTION ONE (COMPULSORY)

[30 MARKS]

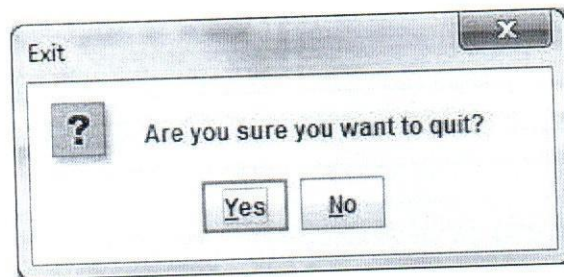
a. i. Create a Swing program that implement the displays on the screen shot below:

[5 marks]



ii. On clicking the "OK" button, a confirm message dialog appears as below

[3 marks]



b. i. Explain the relationship between an action Event object and an ActionListener interface **[2 marks]**

ii. How can one create a class named Login that is both a JFrame and ActionListener type? Illustrate using a single java statement. **[2 marks]**

iii. Given the inside of Login class above, you define a button object as follows:

```
JButton btn= new JButton("Submit");
```

Write a Java statement that registers this button as listener object **[2 marks]**

c. Write a program using JOptionPane that captures two integer inputs, computes their sum and product and displays the results. **[4 marks]**

d. How do we get the text of a selected menu item in the action performed method? Explain using a java code excerpt. **[4 marks]**

- e. Normally we create a frame window by creating a class that extends javax.swing.JFrame class:

```
Public class SwingJFrameDemo extends javax.swing.JFrame {  
    public SwingJFrameDemo()  
    {  
        super("Demo program for JFrame");  
    }  
}
```

Required:

Add components on the above class by writing a java code that will:

- i. Set Layout of the JFrame above to BorderLayout. [2 marks]
- ii. Adds a dropdown component to the Frame's Content Pane and set its list as PIT, MIT, BIT, DIT and CIT. [4 marks]
- iii. Add the component in (ii) above to the center of the JFrame. [2 marks]

QUESTION TWO

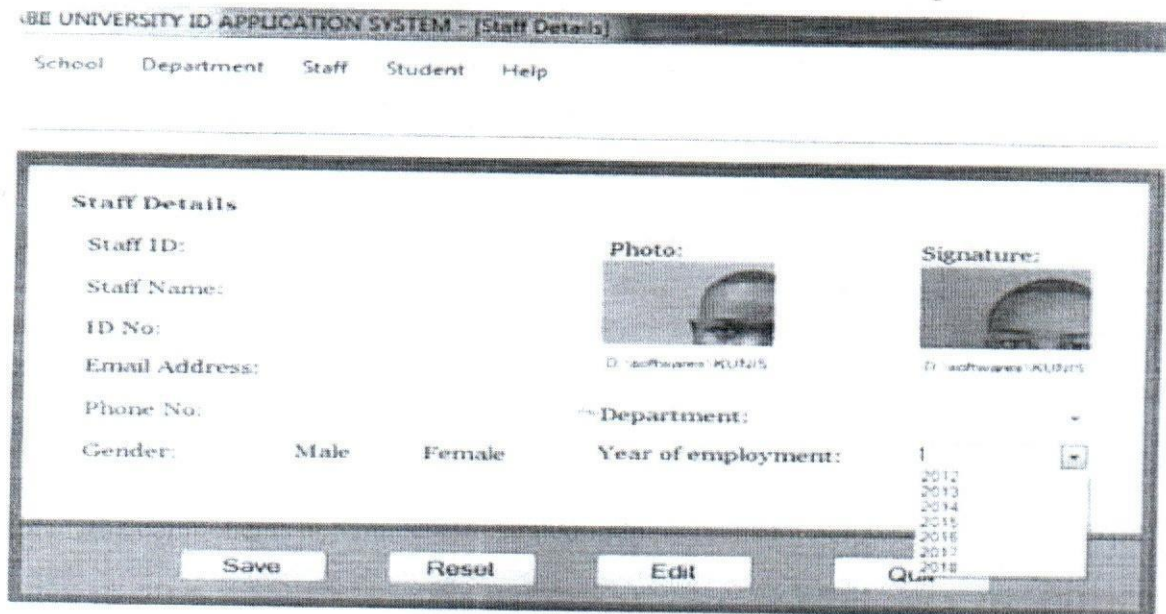
[20 MARKS]

- a. Create a java GUI program that allows the user to enter the desired username and password. Provide a button that when clicked, it informs the user that their account was successfully created. Include labels and layout managers as appropriately. [7 marks]
- b. Explain why exception handling is considered important in event driven programming. How is it achieved using a java code? [4 marks]
- c. Explain the meaning of the following concepts as used in the study of event driven programming:
 - i. Event Handler [2 marks]
 - ii. Event Driven Programming [2 marks]
- d. Where do we register events: on a JMenu, JMenuItem or both? Explain [3 marks]
- e. Explain the meaning of the following arguments of the setDefaultCloseOperation() method:
 - i. JFrame.DO_NOTHING_ON_CLOSE [1 mark]
 - ii. JFrame.EXIT_ON_CLOSE [1 mark]

QUESTION THREE

[20 MARKS]

- a. A student wanted to add three Buttons and Panel object on a JFrame. He resorted in using FlowLayout manager in arranging the buttons objects on the Panel then BorderLayout in adding the Panel object on the North of a JFrame.
- Write a java code that will create and initialize Button objects as “Save”, “Reset” and “Exit”, the Panel object and the JFrame. **[4 marks]**
 - Write java code that will be used to add the created objects in (i) above on the JFrame objects. **[4 marks]**
- b. Explain the components and objects illustrated in the screenshot below: **[12 marks]**



QUESTION FOUR

[20 MARKS]

- a. A menu is an object of the class JMenu. A choice on a menu is called a MenuItem, and is an object of the class JMenuItem. A menu can contain any number of menu items. Using appropriate import statements, write the code segments that creates a new menu called phone with a title “Mobile Phone”, and then add a menu item nokia to it with title “Nokia Phone”, techno with a title “Techno Phone”, oppo with a title “Oppo Phone” and infinix with a title “Infinix Phone”. Add this menu to a JMenuBar object called jmb. **[10 marks]**

b. The JCheckBox class is used to create a checkbox. It is used to turn an option on (true) or off (false). Clicking on a CheckBox changes its state from "on" to "off" or from "off" to "on ".It inherits JToggleButton class. Explain the meaning of the following constructors in the JCheckBox class.

i. JCheckBox ()

[2 marks]

ii. JCheckBox (String x)

[2 marks]

iii. Jcheckbox (String x, Boolean selected)

[2 marks]

c. Write a java code excerpt to create two radio buttons male and female. Add the two buttons to a button group. Create two String variables to store the value stored when a radio button is clicked.

[4 marks]

QUESTION FIVE

[20 MARKS]

a. Differentiate between DDL (Data Definition Language) and DML (Data Manipulation Language) as used in Structured Query Language (SQL).

[2 marks]

b. Consider having a database schema as below:

Courses (course_code, course_name, units, programme_code, semester)

i. Using appropriate data types, field size, and constraints. Write an SQL statement that implements the schema.

[4 marks]

ii. Write an SQL statement to insert the data in the schema above as shown below:

[4 marks]

Course_Code	Couse_Name	units	<u>programme Code</u>	semester
BIT 211	OOP II	3	BIT	SEM I
BIT 221	EDP	3	BIT	SEM II
CSC 210	OOP II	3	CS	SEM II

c. Assume you have a database called "class_attendance" that is locally hosted, with the user "root" having no password. Write a java code to create a class with the name "ConnectionDB" that would connect the Java Program to the MySQL database.

[10 marks]