

KENYA METHODIST UNIVERSITY

END OF TRIMESTER EXAMINATION APRIL 2008

FACULTY : **SCIENCE AND SOCIAL STUDIES**
DEPARTMENT : **COMPUTER INFORMATION SCIENCE**
COURSE CODE : **CISY 312**
COURSE TITLE : **INTERFACE PROGRAMMING**

Total Marks (60)

TIME: 2 ½ HOURS

Instructions

Answer ALL questions in section A, and ANY ONE question in section B.

SECTION A – 30 MARKS (Answer all questions)

1. Define the following terms
 - a. Container
 - b. Event
 - c. Image map (3 marks)
2. Mention two reasons why using the SWING component is better than using the AWT component. (2 marks)
3. Name the methods that perform the following functions:
 - a. Retrieves the current text displayed on a label.
 - b. Displaying a string in a window's title bar.
 - c. Setting the spacing for tick marks on a JSlider.
 - d. Query a database. (4 marks)
4. Name and describe the three parts to the event-handling mechanism. (3 marks)
5. Dialog boxes can either be modal or modeless. Describe what this means. (2 marks)
6. Describe the four fundamental issues encountered when writing any database application. (8 marks)
7. The following line of code is part of a program to load and display an image.
g.drawImage(logo1,0,0,this);
Define what each of the four arguments is for. (8 marks)

SECTION B – Answer ANY ONE question

Question 1 – 30 marks

- a. Write a Java program that displays three buttons, each with an image icon on it. Let us assume that the images are **image1**, **image2** and **image3** respectively. On pressing a button, a message dialog box should display what button was pressed. Call this class **ButtonExam**. (16 marks)
- b. What is the similarity and difference between **JCheckBox** and **JRadioButton**? (4 marks)
- c. Name the three types of state buttons that are contained in the Swing GUI component. (3 marks)
- d. Name the methods that perform the following tasks. (6 marks)
 - i. Retrieving the current icon displayed on a label.
 - ii. Determine the GUI component with which the user interacted.
 - iii. Set the maximum number of elements displayed when the user clicks the **JComboBox**.
- e. Which layout manager honors the preferred size of a component? (1 mark)

Question 2 – 30 marks

- a. Write a program that creates the following GUI. The program does not have to provide any functionality. (16 marks)



- b. State whether each of the following is *true* or *false*, explain why. (6 marks)
 - i. A **JApplet** does not have a content pane.
 - ii. A **JPanel** is a **JComponent**.
 - iii. A **TextField** is an **Object**.

- c. Find any error(s) in each of the following and explain how to correct it (them).
(8 marks)

- i. `import javax.swing.* //include swing package`
- ii. `panelObject.GridLayout(8, 8); //set GridLayout.`
- iii. `container.setLayout(new
FlowLayout(FlowLayout.DEFAULT));`
- iv. `container.add(eastButton, EAST); //BorderLayout`

Question 3 – 30 marks

- a. Write a program that defines a complete query application for a **books** database and uses Microsoft access. Provide a series of predefined queries, with an appropriate name for each query, displayed in a **JComboBox**. Also allow users to supply their own queries and add them to the **JComboBox**. Provide the following predefined queries:

- v. Select all authors from the **Authors table**.
- vi. Select all publishers from the **Publishers table**.
- vii. Select a specific author and list all books for that author.
Include the title, year and ISBN number. Order the information alphabetically by the author's last name and first name.
- viii. Select a specific publisher and list all books published by that publisher. Include the title, year and ISBN number. Order the information alphabetically by title.

(20 marks)

- b. Define the following terms

- i. Database
- ii. Foreign key
- iii. Transaction

(3 marks)

- c. Name the methods that perform the following tasks:

- i. Attempts to connect to a database specified by a URL argument.
- ii. Creates an object of type **Statement**.
- iii. Executes a query that selects information from a table or set of tables.

(6 marks)

- d. What does JDBC stand for?

(1 mark)