



**AFRICA
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COLLEGE OF BUSINESS PEACE, LEADERSHIP AND GOVERNANCE

NCIS202: PROGRAMMING 1

END OF SECOND SEMESTER EXAMINATIONS

APRIL 2023

LECTURER: MR T.S MUWANI

DURATION: 3 HOURS

INSTRUCTIONS

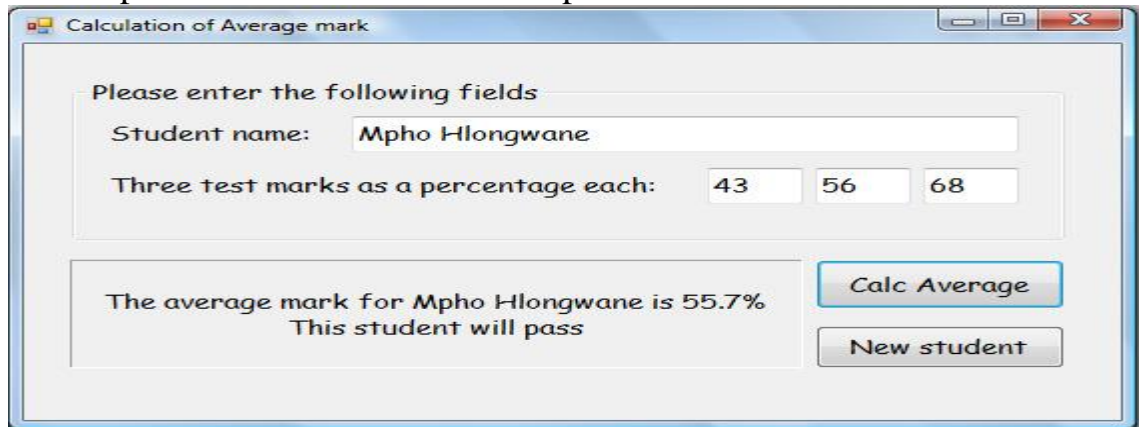
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1. Answer **All** questions in **Section A**
 2. Answer **any other three** questions in **Section B**
 3. Total possible mark is 100
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Start **each** question on a new page in your answer Booklet.

SECTION A

Question 1

- a) Write a program to enter three test marks for a student. A function is called to calculate the average mark. Another function is used to indicate if the average mark is a pass mark (≥ 50) or a fail mark. The average as well as the result must be displayed on the screen. All input and output must be done in the main procedure.



[10 marks]

- b) Define the following programming tools which may be used in program designing
- i. UML [2 marks]
 - ii. Flow Charts [2 marks]
 - iii. Pseudo-code [2marks]
- c) Explain the following concepts of OOP
- i. Objects [3 marks]
 - ii. Classes [3 marks]
 - iii. Data Abstraction and Encapsulation [3marks]
 - iv. Inheritance [3 marks]
 - v. Polymorphism [3 marks]
- d) How can we make:
- i. a variable so that its value cannot be changed once assigned at declaration time?
 - ii. a reference to an object so that it cannot reference any other object, except for the one it is made to reference at declaration time?

- iii. a method so that it cannot be overridden by any of its sub-classes?
 - iv. a class that cannot be inherited by any other class?
- [4 marks]
- e) Explain the following properties of a control
 - i. Name Property [1 mark]
 - ii. Text Property [1 mark]
 - f) Explain the following terms as they are used with variables in programming
 - i. Declaration [1 mark]
 - ii. Definition [1mark]
 - iii. Initialize [1 mark]

SECTION B

Question 2

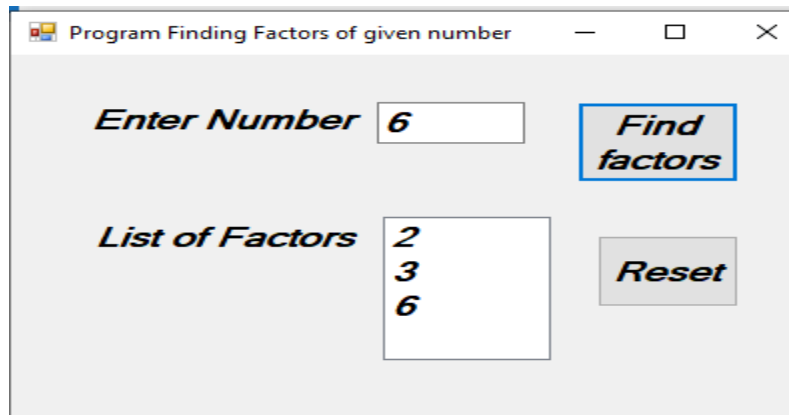
- a) Discuss and explain the four broad categories of programming errors types in Visual Basic.Net [8 marks]
- b) Examine how Option Explicit and Option Strict are used in minimising programming errors [2 marks]
- c) Explain the following types of visual basic.net
 - i. Windows Application [1 mark]
 - ii. Class Library [1 mark]
 - iii. Windows Control Library [1 mark]
 - iv. ASP.NET Web Application [1 mark]
 - v. ASP.NET Web Service [1 mark]
 - vi. Web Control Library [1 mark]
 - vii. Console Application [1 mark]
 - viii. Windows Service [1 mark]
 - ix. Empty Project [1 mark]
 - x. Empty Web Project [1 mark]

Question 3

a) Explain the following terms as they are used in Visual Basic.Net language

- i. Structures [2 marks]
- ii. Classes [2 marks]
- iii. Delegates [2 marks]
- iv. Enumerations [2 marks]

b) Study the interface below, of a program accepting any number from user and displays its factors in the listbox. Code the interface accordingly. The Reset button will clear the textbox, listbox and set the cursor in the cleared textbox



[12 marks]

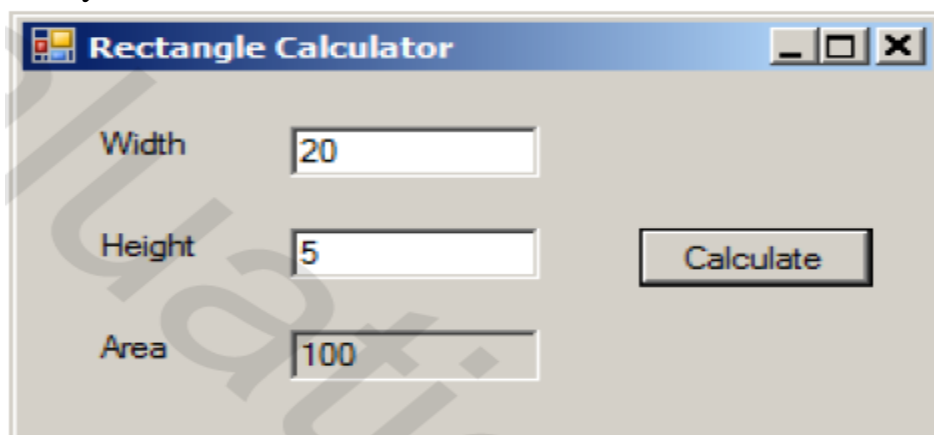
Question 4

a) Explain five dialog boxes used in Visual Basic.Net language

[10 marks]

b) Study the interface below and write visual basic.net statements for its functionality

[10 marks]



Question 5

a) All of the ADO.NET features are provided through types in the System.Data branch of the .NET class library. Explain the following namespaces of the ADO.NET object

- i. System.Data
- ii. System.Data.Common
- iii. System.Data.SqlClient
- iv. System.Data.Oracle
- v. System.Data.OleDb
- vi. System.Data.SqlTypes

[12 marks]

b) Explain the two options available for updating data when using the ADO.NET [4marks]

c) Differentiate the DataSet object from the DataReader object

[4 marks]

END OF EXAMINATION