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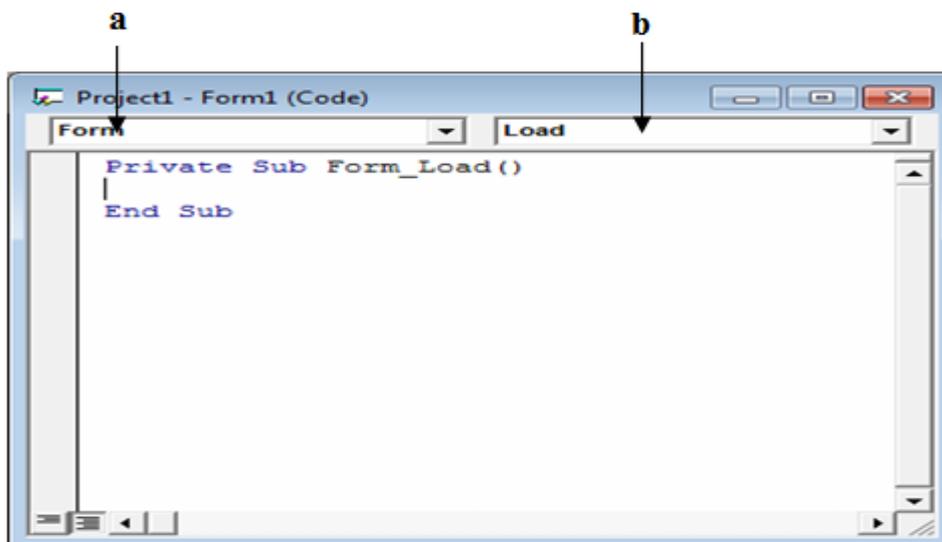
Visual Programming Exam

INSTRUCTIONS:

Answer **ALL** questions in this paper.

QUESTION ONE

a) State the main difference between procedural and event-driven programming. [2 marks]

b) State two advantages and two disadvantages of Visual Programming. [4 marks]

c) State the purpose of the project explorer window. [1 mark]

d) Below is a window used in the Visual Basic IDE.

e) Identify the window. [1 mark]

f) Identify and explain the function of the parts labeled **a** and **b**. [4 marks]

g) State three ways through which the startup position of a form can be set. [3 marks]

h) Distinguish between a form module and a standard module. [2 marks]

i) Giving two examples, explain what an **event** is in visual programming. [3 marks]

QUESTION TWO

a) Assume you have a listbox by the name lstCourses

   i. Write code statements to add three items to the listbox at Run-time. [3 marks]

   ii. Write a code statement that would remove the first item from the listbox. [2 marks]

b) Write a code statement that would print a user's input from a textbox onto the form.   [2 marks]

c) State two uses of the picture box.   [2 marks]

d) Explain the difference between the Hide and Unload methods used to remove a form from the screen.   [2 marks]

e) Name three properties of the textbox control.   [3 marks]

f) Explain the difference between option buttons and checkboxes in terms of usage.   [2 marks]

g) Compare Visual Basic programming language with machine language in terms of: [4 marks]

    i. Speed of execution -
    ii. Memory resource requirement -
    iii. Length of code -
    iv. Portability;

QUESTION THREE

a) Distinguish between a variable and a constant.   [2 marks]

b) Explain the difference between Implicit Declaration and Explicit Declaration.   [2 marks]

c) Explain what is meant by the scope of a variable.   [1 mark]

d) Explain how the three scopes of variables are implemented.   [6 marks]

e) State the standard prefix for each of the following objects: [5 marks]

    (i)   Double

    (ii)   Boolean

    (iii) Currency

    (iv) Command button

    (v)   Combo box

f) Given that $x = 5$ and $y = 2$, evaluate each of the following Visual Basic expressions.   [6 marks]

    (i) $x - 0.8/y + (x * 2)$

    (ii) $x - y >= 5$ And $y <> x - y \char`^ 2$

    (iii) $x + 2 * y > 0$ XOR $2 * y > x$

g) Define each of the following terms as used in Visual Basic Programming: [3 marks]

    i.   Object

    ii.   Property

    iii. Method

h) List four properties of a form as used in Visual Basic programs.   [2 marks]

i) Write a line of code that would do the following: [3 marks]

    i.   Change the colour of a form to Blue at form load.
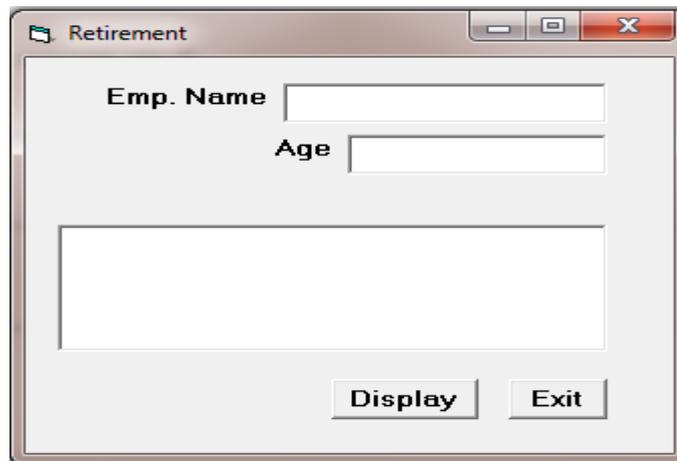
ii. Give focus to a textbox.

iii. Make a command button inactive at form load.

QUESTION FOUR

a) Write a Visual Basic program that accepts two numeric values and then multiplies the two numbers. The program should validate the user's input to ensure only numeric values are keyed in. The program should then display the answer through a message box. Attach the code to a command button click event. [10 marks]

b) Below is a screen shot of a program that accepts a user's name and age and computes the year when the employee would retire.

The program then displays the results in the listbox in the form: **"Moses Akaranga is 40 years old and will retire in the year 2029".** Assume the retirement age is 60 years. Write the code to implement the program. [10 marks]

c) Write a Visual Basic program that prompts the user to enter his/her **title, first name, middle name, and last name**. The program should then display the title, first character of the first name, first character of the middle name and the last name through a **message box** as in "Mr. G.N Ngome". Attach the code to command button click event. [10 marks]

1) i) Name two properties of the Textbox. [2 marks]
   ii) Distinguish between run-time errors and logic errors. [2 marks]

   iii) Explain the difference between Implicit Declaration and Explicit Declaration. [2 marks]

   iv) Describe the three levels of variable scoping. [6 marks]

   v) Given that x = 5 and y = 2, evaluate each of the following VB program expressions. [8 marks]

   a. x −4/y + (x* 2)
   b. x − y >= 5 And y > (x − y)
   c. (x - 4) * 2 + 6 / 2
   d. x%2

2) a) Consider the Visual Basic procedure below and then answer the questions that follow.
   Private Sub cmdCountUp_Click()

   Static count As Integer

count = count + 1

Label1.Caption = count

End Sub

  i. Briefly explain what the procedure is expected to do.   [3 marks]

  ii. Explain the purpose of the following parts of the statement in line two: [3 marks]

      Static

      Count

      As Integer

  iii. Explain the function of the statement in line 2 of the code.   [2 marks]

  iv. Distinguish between standard modules and form modules as used in Visual Basic.[4 marks]

b) Below are two Visual Basic procedures used in the same program to calculate the area of a square.

Public Sub SquareArea(dblSide as Double)
      dblArea = dblSide * dblSide
  End Sub

Private Sub cmdCalculateArea_Click()
    Call Form1.SquareArea (25)
     lblResults.Text = dblArea
  End Sub

  i. Explain how the programmer would make the variable "dblArea" accessible to both procedures.

  ii. Identify the control/object used to display output in the program.   [2 marks]

  iii. State one property associated with the object in Visual Basic.   [1 mark]

  iv. State three advantages of modular programming.   [3 marks]

3) a) i) Define the term event driven programming.   [2 marks]

      ii) The figure bellow shows a form design for an application to be used by a wholesaler for computing discount when billing clients. Use it to answer the question that follows.

The discount rate is calculated based on the payment mode and the shopping Amount as shown in Table 1.

Payment Mode	Shopping Amount	Discount Rate
Cash	< 10000	20%
	> = 10000	25%
Cheque	<15000	10%
	> =15000	15%
Credit Card	< 10000	10%
	> = 10000	12%

Table 1

Write a Visual Basic program that will accept the shopping amount, compute the discount and then display the net amount.

Hint: The net amount = shopping amount – discount rate x Shopping amount

(6 marks)

b) Write a program to produce the output below. Use *for... loop.*   [6 marks]
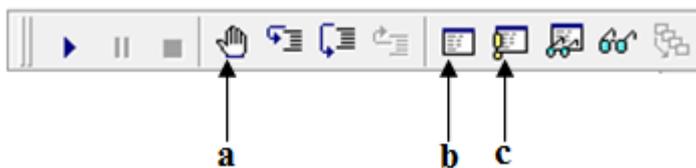
```
1    2    3    4    5
1    2    3    4
1    2    3
1    2
 1
```

b) Write a Visual Basic program that prompts a user to enter the first 5 integers through the use of InputBox function and assign the values to an array named *Myarray*. The program should then display the average of the values and the values greater than the average on a picture box named *picSummary*. Use a *For...Next* loop.   [6 marks]

4) (a) Below is a diagram of the debugging toolbar used in Visual Basic Programming. Briefly describe the use of the three tools labeled **a**, **b** and **c**.   [6 marks]

(b) Define the term debugging as used in programming.   [1 mark]

(c) Explain the purpose of the following as used in debugging: [6 marks]

    i. Resume statement

    ii. Resume Next

    iii. Err Object

(d) State the three modes that a programmer can work in Visual Basic environment.   [3 marks]

(e) Explain what a break point is in Visual programming.   [2 marks]

(f) State three ways through which break points can be set in a block of code.   [3 marks]

(g) Below is block of code for computing the area of a circle. Identify the errors in the code and Correct them.   [5 marks]

```
Private Sub cmdCalculate_Click()
Dim dblRadius As Double
Dim dblArea As Double
Const dblPI As Double
dblPI = 3.142
dblPI = CDbl(txtRadius.Text)
dblArea = dblPI + (dblRadius * dblRadius)
lblArea.Caption = dblArea
End Sub
```

b) i) Describe three arguments used with the Input Box function.   [3 marks]

ii) Distinguish between Unload and Hide methods as used with Form Control.   [2 marks]

iii) Using examples, distinguish between pre-test and post-test loops. [4 marks]

iv) What is a control array in Visual Basic? [2 marks]