

أسئلة برمجة للمراجعة (الجزء الأول)

Short Answers

(1) What is a Computer Programming?

Creating a sequence of instructions using any programming languages to enable the computer to do something, written by programmers.

(2) What is a Programming Language?

It is a special language used to write computer programs.

(3) What is Pseudo Code?

Pseudo Code is an informal language to help programmers for developing algorithms

(4) State the Levels of Programming Languages.

1. High-level
2. Low-level
3. Executable Machine

(5) Give examples of programming languages?

- Visual Basic.
- C#.
- C, C++.
- Java.
- Python.
- PHP.
- JavaScript.

(6) What are the elements of a programming language?

- Keywords (Reserved Words).
- Operators.
- Variables.
- Syntax.
- Statements.
- Procedures.
- Comments (Remarks).

(T/F)

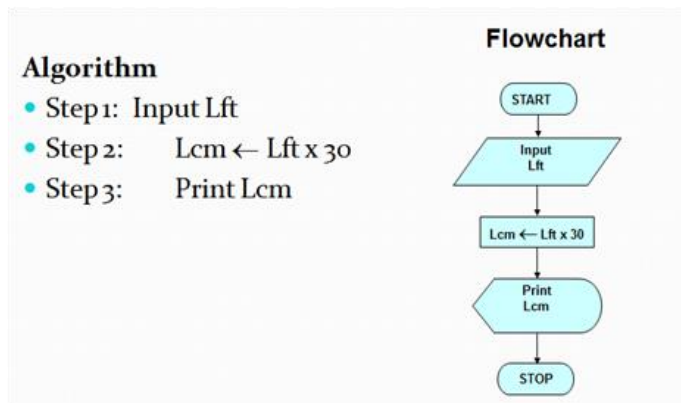
In problem solving phase, we create a general algorithm then a detailed algorithm	T
In problem solving phase, we can implement the program in some programming language	F
The sequence of steps that describe solution of problem is called an algorithm	T
The operator "AND" is a Boolean operator that returns True when the operand is False and returns False when the operand is True	F
Flowchart is a graphical representation of the sequence of operations in an information system or program	T
The expression $A > B$ is a logical expression	T
Relational operator ($<$) means “greater than or Equal to”	F
Relational operator (\neq) means “Not equal to”	T
Relational operator (\leq) means “less than or Equal to”	T
In flowchart, the diamond denotes a decision	T
In flowchart, the rectangle denotes an output operation	F
In flowchart, the oval denotes the beginning or end of the program	T
In flowchart, the hybrid denotes an input operation	F
Pseudo Code is an informal language to help programmers for developing algorithms	T

Applications

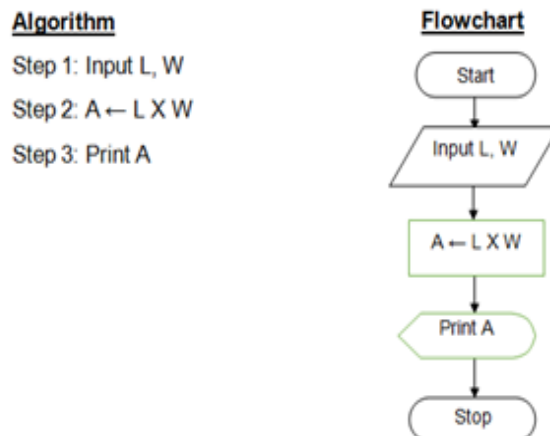
- (1) Write an algorithm to determine a student's final grade and indicate whether it is passing or failing. The final grade is calculated as the average of four marks.

```
Step 1:  Input M1,M2,M3,M4
Step 2:  GRADE ← (M1+M2+M3+M4)/4
Step 3:  if (GRADE < 50) then
           Print "FAIL"
         else
           Print "PASS"
        endif
```

- (2) Write an algorithm and draw a flowchart to convert the length in feet to centimeter.



- (3) Write an algorithm and draw a flowchart that will read the two sides of a rectangle and calculate its area.



(4) Write an algorithm and draw a flowchart that will calculate the roots of a quadratic equation

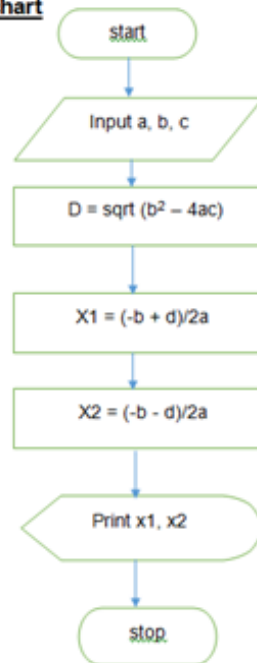
Hint: $d = \sqrt{b^2 - 4ac}$, and the roots are:

$$x_1 = \frac{-b + d}{2a} \quad \text{and} \quad x_2 = \frac{-b - d}{2a}$$

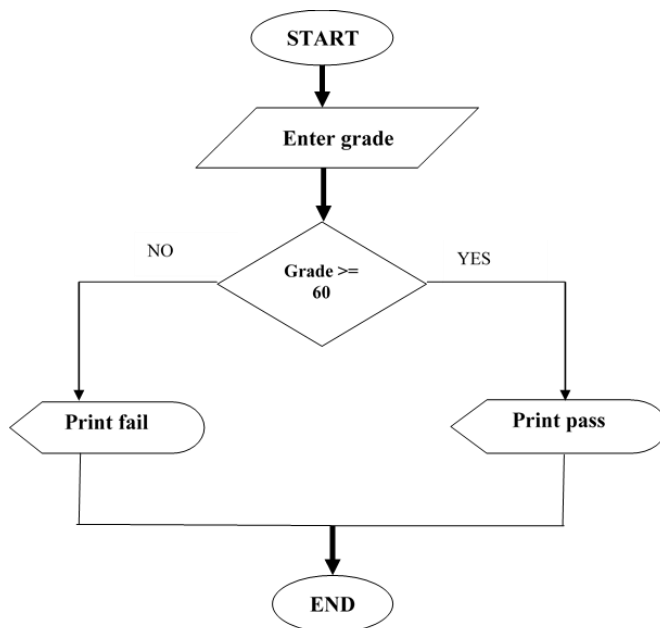
Algorithm

- Step 1: Input a, b, c
- Step 2: $d = \sqrt{b^2 - 4ac}$
- Step 3: $x_1 = \frac{-b + d}{2a}$
- Step 4: $x_2 = \frac{-b - d}{2a}$
- Step 5: Print x1, x2

Flowchart



(5) Draw flowchart and write an Algorithm to find if the student fails or passes, if his grade ≥ 60 , then print pass, and if his grade < 60 , then print fail.



Input Grade

If (Grade ≥ 60) Then

print "Pass"

Else

print "Fail"

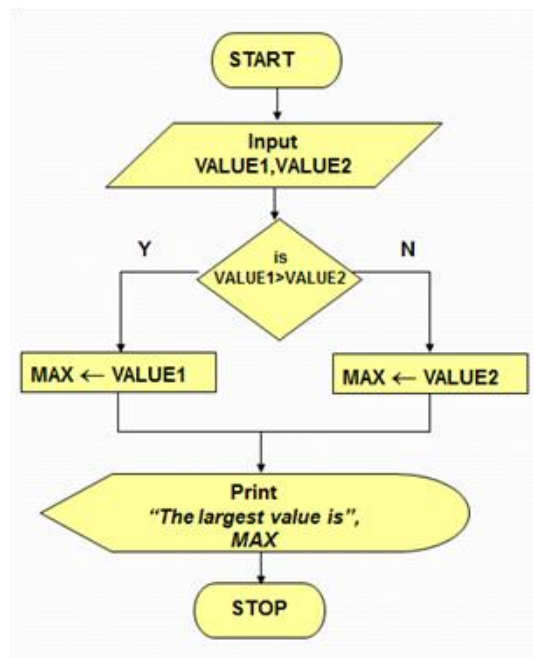
End If

- (6) Write an algorithm and draw a flowchart for a program that reads two values, determines the largest value and prints the largest value with an identifying message.

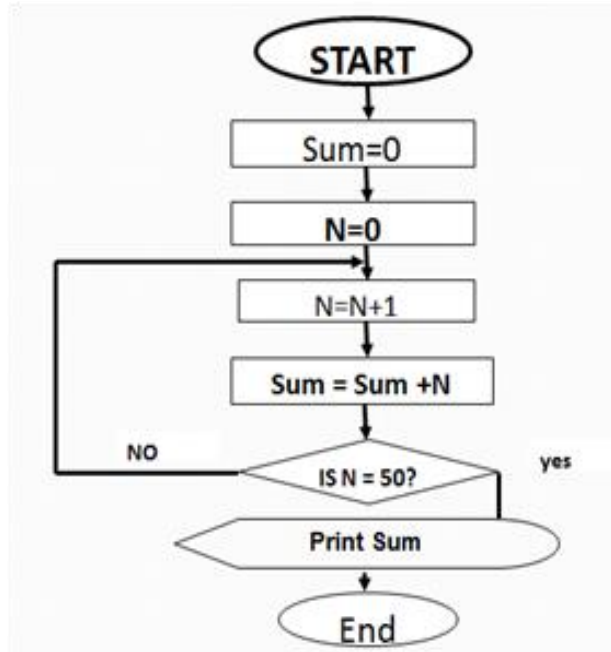
Algorithm

```
Input VALUE1, VALUE2
if (VALUE1 > VALUE2) then
    MAX ← VALUE1
else
    MAX ← VALUE2
end if
Print "The largest value is", MAX
```

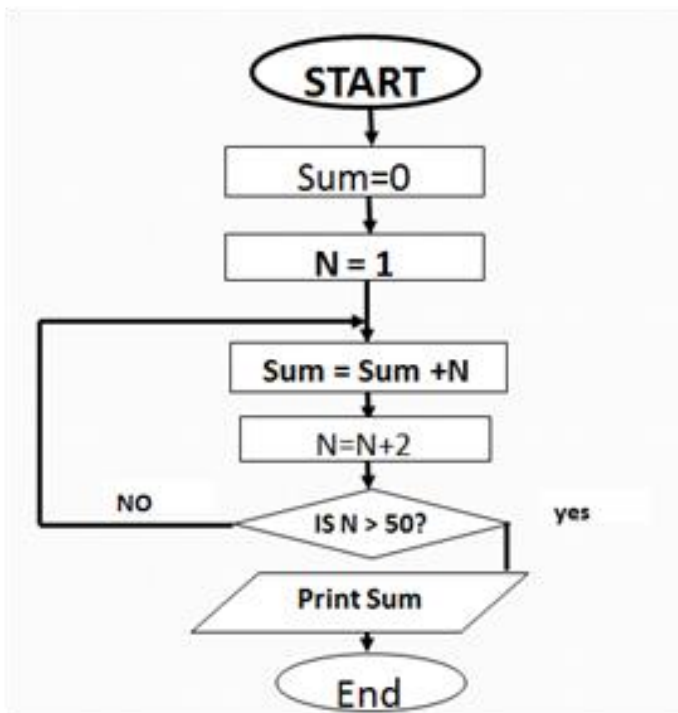
Flowchart



- (7) Draw flowchart to find the sum of integer numbers from 1 – 50 by using (Loop).



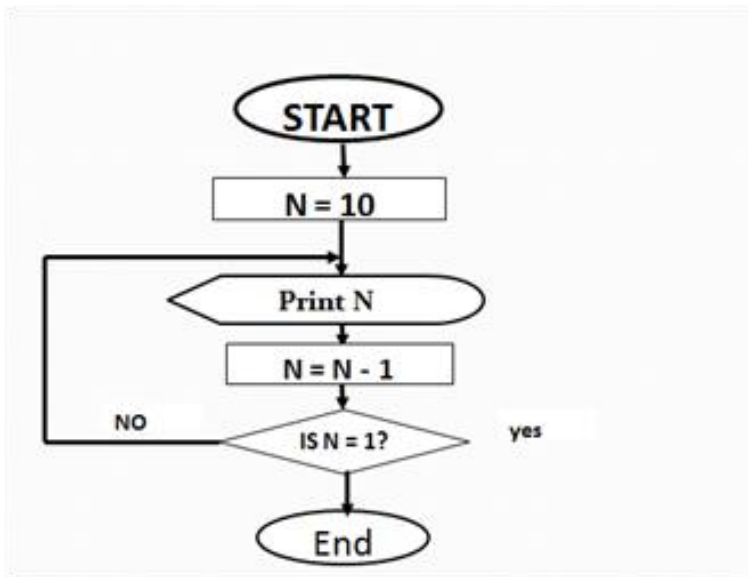
(8) Draw flowchart and algorithm to find the sum of the odd numbers from 1 – 50.



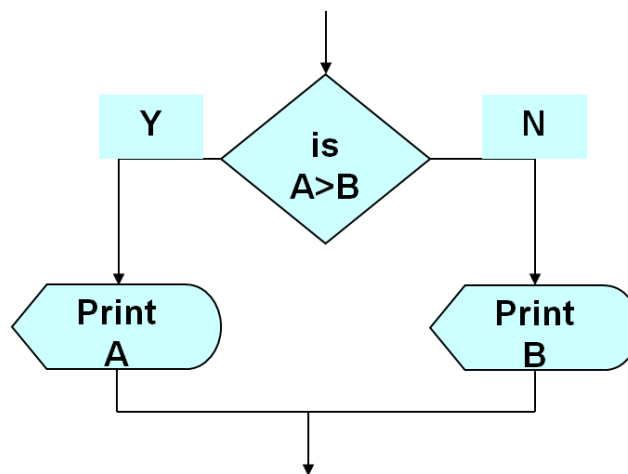
```

sum = 0
n = 1
While (n <= 50) {
    sum = sum + n
    n = n + 2
}
print sum
  
```

(9) Draw a flowchart to allow the user to print 10,9,8,.....,1



(10) Write the algorithm for the following flowchart



Algorithm

```
If A > B then  
  print A  
else  
  print B  
endif
```

أسئلة برمجة للمراجعة (جزء البرمجة)

(T or F)

1. A Computer Programming is creating a sequence of instructions using any programming languages to enable the computer to do something, written by programmers. (T)
2. ToUpper is a function that returns the lowercase equivalent of a string. (F)
3. A Programming Languages are a special language used to write computer programs. (T)
4. To display a “Welcome To VB!” message in a Label name (lblGreeting) you should use the following statement: `lblGreeting.print = "Welcome To VB!"`. (F)
5. *Xor* operator connects two Boolean expressions into one. Both expressions must be true for the overall expression to be true. (F)
6. ToLower is a function that returns the uppercase equivalent of a string. (F)
7. Relational operator (`>=`) means is greater than or Equal to. (T)
8. To display a “Hello World!” message in a message box you should use the following statement: `MessageBox.show("Hello World!")`. (T)
9. A Label control’s AutoSize property is set to False by default. (T)
10. A textbox’s name property is used to change its contents. (F)
11. The form’s color property is used to change its background color. (F)
12. The *If* statement must have *End If* keyword. (T)
13. The *Select Case* must have *Case else* keyword. (F)
14. Length is a method for a string. (F)
15. `"ABC" < "XYZ"` (T)
16. `“AAA” = ”AA”` (F)
17. `“ABC” <> “abc”` (T)

Multiple Choice:

- (1) You declare a named constant with which keyword?
a) Constant b) Dim c) NamedConstant d) **Const**
- (2) Property _____ specifies how the Label's border Fixed3D
a) **BorderStyle** b) Border c) FlatStyle d) 3DStyle
- (3) You display input boxes with this function.
a) InBox b) Input c) **InputBox** d) GetInput
- (4) SelectedIndex value when there is no item has been selected is?
a) 0 b) 1 c) **-1** d) any value you specify
- (5) _____ is a function that accepts a string as its argument and returns *True* if the string contains a number.
a) Length b) **IsNumeric** c) IndexOf d) None of the above
- (6) In code, you move the focus to a control with which method?
a) MoveFocus b) SetFocus c) ResetFocus d) **Focus**
- (7) The Data type _____ is not a numeric data type.
a) **Char** b) Single c) Double d) Long
- (8) Property _____ specifies how text is aligned within a Label's boundaries.
a) Alignment b) **TextAlign** c) Align d) Text
- (9) This operator connects two Boolean expressions into one. One or Both expressions must be true for the overall expression to be true.
a) And b) **Or** c) Xor d) Not
- (10) Which keyword is used to declare a variable?
a) Const b) VariableDim c) NamedDim d) **Dim**
- (11) Property _____ is used to change the word appeared on a button.
a) label b) button c) name d) **text**
- (12) The Data type _____ is not a numeric data type.
a) **String** b) Integer c) Double d) Decimal
- (13) Property _____ indicates a radio button selection.

a) checked

b) TextAlign

c) Align

d) Text

(14) The _____ property returns the number of characters in a string.

a) checked

b) length

c) Align

d) Text

(15) _____ is a method that converts the contents of a variable to a string

a) Toupper

b) Tolower

c) Tostring

d) Convert

Question 3: For each of the following VB code snippets, identify the syntax error

(A) If dblSalary > 30000 Then

 If intYearsOnJob > 2 Then

 lblMessage.Text = "The applicant qualifies."

 Elseif

 lblMessage.Text = "The applicant doesn't qualify."

 End If

Else

 Elseif intYearsOnJob > 5 Then

 lblMessage.Text = "The applicant qualifies."

 Else

 lblMessage.Text = "The applicant does not qualify."

End If

```
If dblSalary > 30000 Then
```

```
    If intYearsOnJob > 2 Then
```

```
        lblMessage.Text = "The applicant qualifies."
```

```
    Else
```

```
        lblMessage.Text = "The applicant doesn't qualify."
```

```
    End If
```

```
Else
```

```
    If intYearsOnJob > 5 Then
```

```
        lblMessage.Text = "The applicant qualifies."
```

```
    Else
```

```
        lblMessage.Text = "The applicant does not qualify."
```

```
    End If
```

```
End If
```

(B) If intX > 100

 lblResult.Text = "Invalid Data"

End If

```
If intX > 100 Then
```

```
    lblResult.Text = "Invalid Data"
```

```
End If
```

(C) Dim str As String = "Hello"

 Dim intLength As Integer

 intLength = Length(str)

```
Dim str As String = "Hello"
```

```
Dim intLength As Integer
```

```
intLength = str.Length
```

(D) If intZ < 10 Then

 lblResult.Text = "Invalid Data"

```
If intZ < 10 Then
```

```
    lblResult.Text = "Invalid Data"
```

```
End If
```

(E) Dim str As String = "123"

If str.IsNumeric Then

 lblResult.Text = "It is a number."

End If

```
Dim str As String = "123"
```

```
  If IsNumeric(str) Then
```

```
    lblResult.Text = "It is a number."
```

```
  End If
```

(F) Select Case intX

Case < 0

 lblResult.Text = "Value too low."

Case > 100

 lblResult.Text = "Value too high."

Case Else

 lblResult.Text = "Value just right."

End Select

```
Select Case intX
```

```
  Case intX < 0
```

```
    lblResult.Text = "Value too low."
```

```
  Case Is > 100
```

```
    lblResult.Text = "Value too high."
```

```
  Case Else
```

```
    lblResult.Text = "Value just right."
```

```
End Select
```