

NAZARETH COLLEGE OF ARTS AND SCIENCE

Department of Computer Science

VISUAL PROGRAMMING

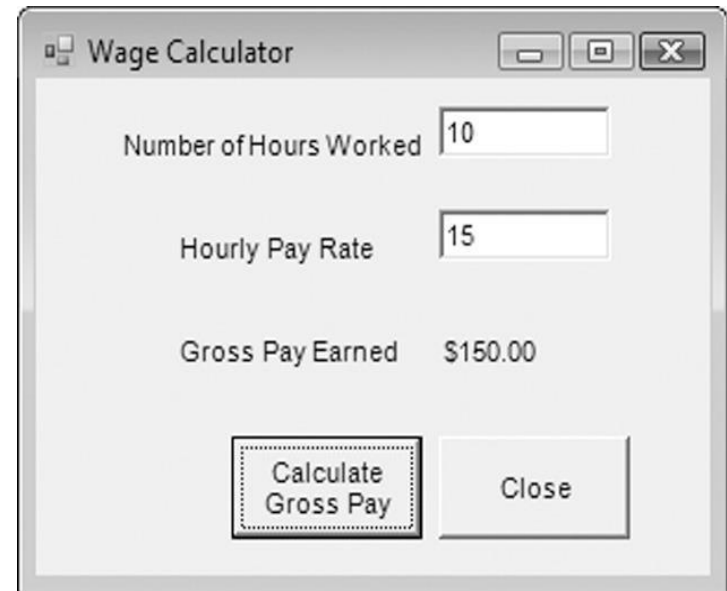
Control Structures and Functions

Unit - II

1. Displaying information
2. Determinate loops
3. Indeterminate loops
4. Conditionals
5. Built in functions
6. Procedures.

2.1 Displaying information

- Forms applications that display information, request input from users, and communicate with remote computers over a network.
- Message box
- Input box



The screenshot shows a window titled "Wage Calculator" with standard Windows window controls (minimize, maximize, close). Inside the window, there are three input fields and two buttons. The first input field is labeled "Number of Hours Worked" and contains the value "10". The second input field is labeled "Hourly Pay Rate" and contains the value "15". Below these, the text "Gross Pay Earned" is displayed next to the value "\$150.00". At the bottom of the window, there are two buttons: "Calculate Gross Pay" and "Close". The "Calculate Gross Pay" button is highlighted with a dashed border.

Control Structures

Control structure have different programming segments that affects program execution, depending on the true/false value of a Boolean expression

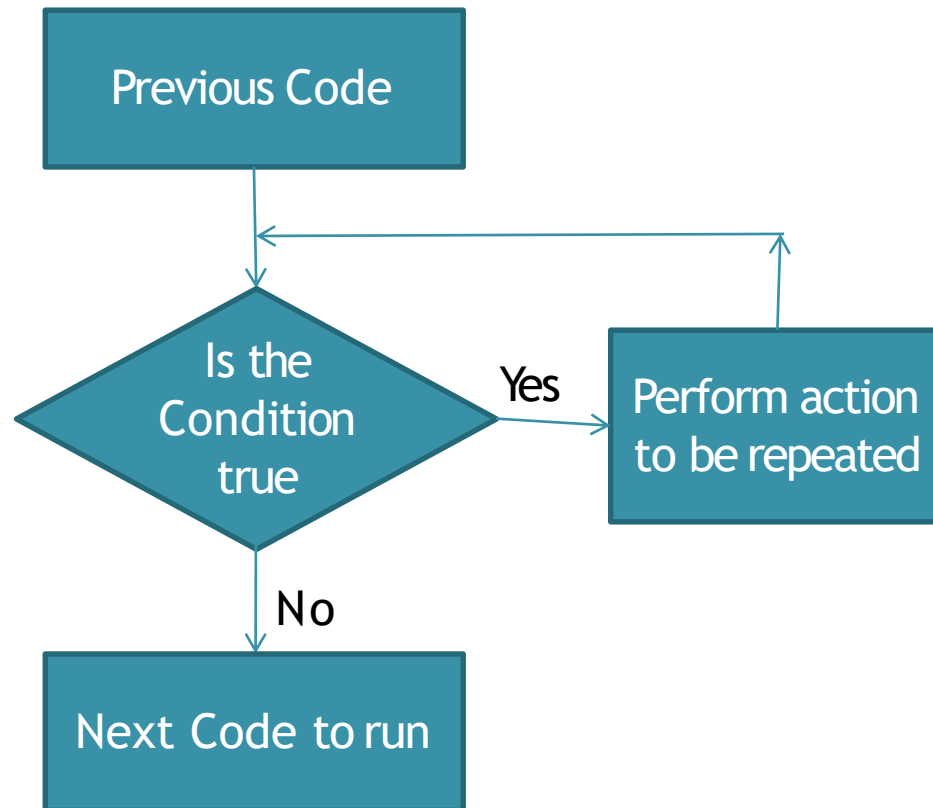
Control structures is Classified as

Iterative (Looping) Structures

Conditional Structures

2.2 Determinate Loop Structures

Visual Basic loop structures allow you to run one or more lines of code repetitively for a specific number of times



You can repeat the statements in a loop structure

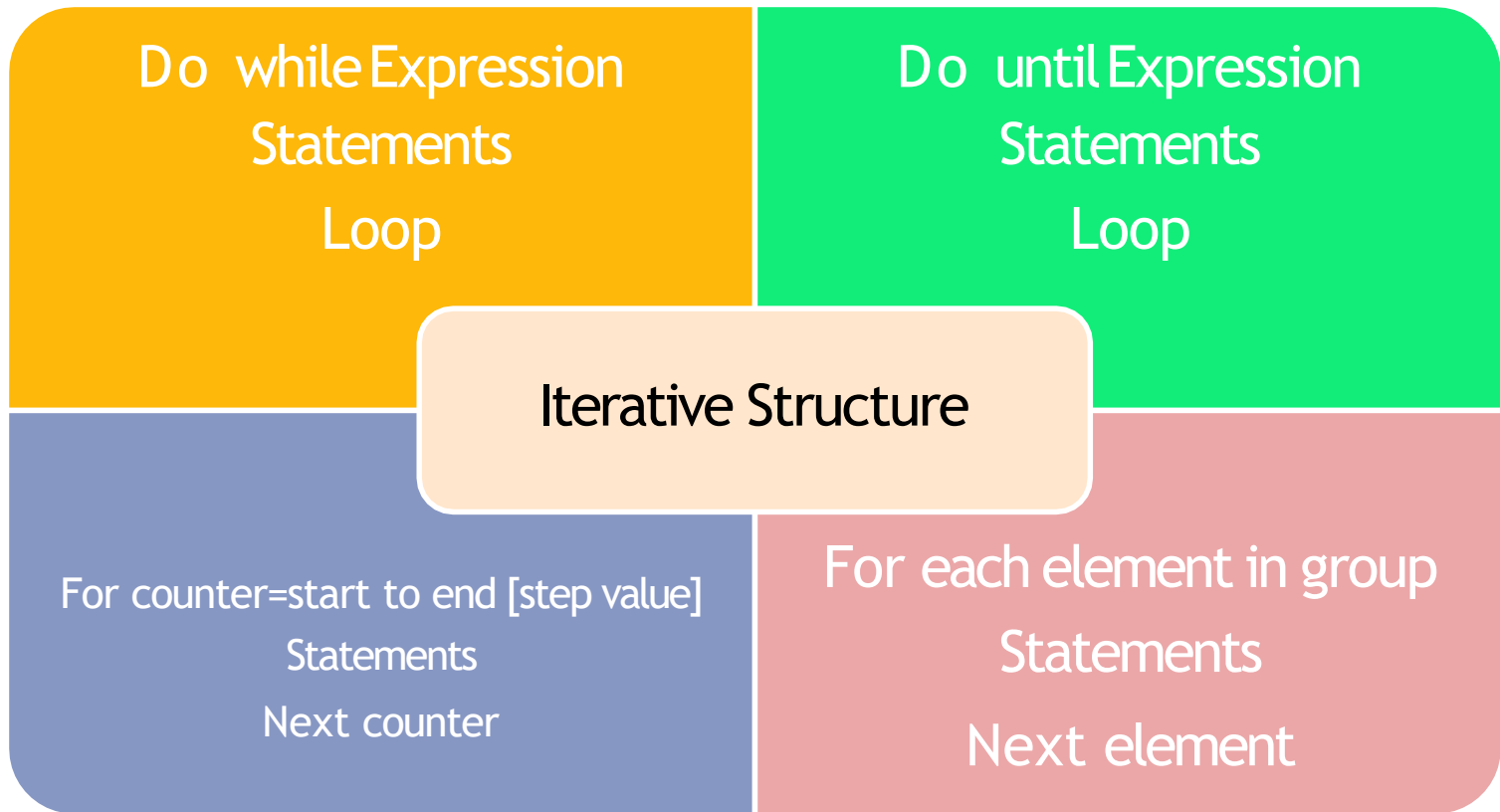
while a condition is True

until a condition is False

For a specified number of times

For each element in a collection

Looping syntax



Example: sum=0,num=0

Do while num<11

Sum=sum+num

num=num+1

Loop

2.3 Indeterminate Loop Structures

Loop structures that allows us to run set of statements repetitively for unspecified number of times

Note:

- It is an infinite loop.
- The loop that never terminates.
- It is undesirable looping construct
- Exit statement can be used for termination of loop
- Ctrl + break keys are used to terminate the program

2.4 Conditionals

Conditional structures respond to different values depending upon the result of a test condition

Conditional structures are

If ... Then Statement

If ... Then ... Else Statements

If ... Then ... Elseif Statements

Select case Statements

Conditional Statements

V
I
S
U
A
L

B
A
S
I
C

If condition then
Statements
End If

If condition then
Statements
Else
Statements
End If

Syntax

If condition then
Statements
Elseif
Statements
Else Statements
End If

Select case test expression
[case expressionlist - 1]
Statements
[case expressionlist - 2]
Statements
Case Else
Else statements
End Select

Example for ElseIf

```
AvgMarks=s1+s2+s3
If AvgMarks > 75 then
    Print "Passed in Distinction"
ElseIf AvgMarks > 60 then
    Print "Passed in First Class"
ElseIf AvgMarks > 50 then
    Print "Passed in Second
Class"
Else
    Print "Failed"
End If
```

Example for Select Case

```
units=curreading- prevreading
Select case units
    case 0
        ElecCharges=0
    case 1 to 100
        ElecCharges=units * 5
    case 101 to 500
        ElecCharges=units * 8
    case else
        ElecCharges=units * 15
End Select
```

2.5 Built-in Functions

·Visual Basic offers a rich assortment of built-in **functions**. The **on-line help utility** will give you information on any or all of these functions and their use. Some examples are:

Function	Value Returned
Abs	Absolute value of a number
Asc	ASCII or ANSI code of a character
Chr	Character corresponding to a given ASCII or ANSIcode
Cos	Cosine of an angle
Date	Current date as a text string
Format	Date or number converted to a text string
Left	Selected left side of a text string
Len	Number of characters in a text string
Mid	Selected portion of a text string
Now	Current time and date
Right	Selected right end of a text string
Rnd	Random number
Sin	Sine of an angle
Sqr	Square root of a number
Str	Number converted to a text string
Time	Current time as a text string
Timer	Number of seconds elapsed since midnight
Val	Numeric value of a given text string

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2.6 Procedures and Functions

Any large project is divided into small logical components called Procedures. Procedures are used for defining repeated or shared tasks. Such as frequently used calculations, text and database manipulation.

Procedures can be classified as

Event Procedures

➤ Are involved automatically in response to a user or system action or when called by another statement.

Property Procedures

➤ Can return and assign values and set references to objects.

General Procedures

➤ It is created by the user and it is called from another procedure.

Syntax for Sub Procedure is

```
Sub Procedurename( P1 as Type, P2 as Type....)  
    Statements  
End Sub
```

Syntax for Sub Function is

```
Function Functionname( P1 as Type, P2 as Type....) As DataType  
    Statements  
End Function
```

Where P1, P2 ,etc are parameters to the procedures

Note|: Functions returns values

Example for Sub Function is

```
Function Interest( P ,R,T) As Single  
    Interest=(P * R * T)/ 100  
End Function
```