

PROCEDURES, FUNCTIONS & MODULES IN VB

Q1. Name & explain the usage of all three types of modules available in Visual Basic.

- Sol.:
- (i) Form Module- it is a module that stores all the procedures & declaration pertaining to single form. Extension of form module is .frm.
 - (ii) Standard Module- It stores general purpose code of the application that is the code & declaration that are not specific to one form of application. Extension of standard module .bas.
 - (iii) Class Module- it is a special code module that stores the blueprint for user created custom objects. Extension of class module is .cls.

Q2. What is the difference between a function and a sub procedure? Write one example of each.

Sol.: Function Procedure & Sub Procedure share the characteristics with one difference, function returns the value to the caller while procedure never returns the value

e.g

```
private sub sum (a as integer, b as integer)
    dim s as integer
    s=a+b
    print "sum of two nos is "& s
end sub
```

```
private function sum( a as integer, b as integer) as integer
    dim s as integer
    s= a+b
    sum=s
End function
```

Q3. How many value(s) does a Procedure and a Function return?

Sol.: Procedure doesn't return any value while Function can return only one value.

Q4. Write a Procedure in VB to accept number and add number with 400 and display result

Sol.: the function is as:

```
Private sub Procedure Result (num As Integer)
    Result=num+400
    MsgBox ("the result is:"&str (Result))
End Function
```

Q5. Write a procedure that receives a day number and print day of the week.

Sol.: private sub display (dd as integer)

Dim day as string

Select case dd

Case 1

Day="Monday"

Case 2

Day="Tuesday"

Case 3

Day="Wednesday"

Case 4

Day="Thursay"

Case 5

Day="Friday"

Case 6

Day="Saturday"

Case 7

Day="Sunday"

Case else

Day="Enter the no. from 1 between 7"

Select end

Print "day of the week is "& Day

End sub

Q6.: Write a VB procedure that takes a number as argument and display the sum of all the digits in number.

Sol.: private sub Sdigit(num as integer)

Dim R,Sum as integer

Do while num<>0

R=num mod 10

Sum= sum + R

Nun= num\10

Loop

Print " sum of digits are"& sum

End sub

Q7.: Write a VB function that takes a number as argument and return 'true' if it is even else return 'false'.

Sol.: Private function evenodd (num as integer) as string

Dim res as string

If num mod 2 = 0 then

Res="true"

Else

Res="false"

End if

Evenodd=Res

End function

Q8.: How general procedure is different from event driven procedure?

Sol.: A general procedure is the one that we create for our own specific purpose. Once a general procedure is defined it must be specifically invoked by the application as and when required.

A event procedure is a procedure associated with the specific event of an object and are named in a way that indicate the object and the event clearly e.g click event procedure linked to command button, say cmdok is named as cmdok_click. Event procedure get executed automatically when related event take place.

Q9.: define Procedure & function . How many types of procedures are supported in VB?

Sol.: A procedure is a named unit of a group of program statements that perform a well defined task.

Function is a procedure that perform a well defined task and returns a value.

Three procedure supported by VB.

1. Sub-procedure
2. Function procedure
3. Property procedure

Q10.: What are the parameters? What are actual & formal parameter?

Sol.: Parameters or arguments are the values that are passed to procedures and used by procedures to accomplish the task.

Actual parameters are those which appear in the statement invoking the procedure. And Formal parameter are those which appear in the definition of the procedure.

Q11.: How is call by value mechanism different from call by reference?

Sol.: Call by value method copies the values of actual parameter into the formal parameter, that is procedure creates its own copy of argument values and then uses them. In call by value method , the changes are

not reflected back to the original values.

In call by reference method, the called procedure doesn't create its own copy of original values rather it refers to the original values by different names. In call by reference method, the changes are reflected back to the original values.

Q12. Read the following case study and answer the questions that follow :
Mr. Vidyarthi works in Blossoms Public School as a programmer. He is required to develop a student record. The school offers two different streams, medical and non-medical, with different grading criteria. The school also offers incentive to the NCC cadets in the form of a 3% increment in percentage for all the NCC cadets. The grading criteria for the two streams is given below:

Stream	Percentage	Grade
Medical	≥ 80	A
	60-80	B
	< 60	C
Non-Medical	≥ 75	A
	50-75	B
	< 50	C
Object Type	Object Name	Description
Form	FrmStudRec	The Main Form Object
Text Box	txtFirstTerm	To enter first term marks
	txtSecondTerm	To enter second term marks
	txtPercentage	To display the percentage of the student
	txtGrade	To display the grade of the student
Check Box	chkCadet	To be Checked if student is an NCC Cadet
Option Button	optMedical	To provide Stream Information
	optNonmedical	
Command Button	cmdCalcPer	To calculate the percentage
	cmdCalcGrade	To calculate the grade
	cmdClear	To clear the entered values
	cmdExit	To close the application

(a) Write the code for cmdCalcPer to calculate the percentage after finding the total marks of first term and second term (assuming that both marks are out of 100). Also ensure that NCC cadets get an increment of 3% in their percentages.

(b) Write the code for cmdCalcGrade to calculate the grade depending on the stream selected according to the criteria given above.

sol.:

```
(a) Sub cmdCalcPer_Click ()
    Dim first, second, total, per as integer
    first = Val(txtFirstTerm.Text)
    second = Val(txtSecondTerm.Text)
    total = first + second
    per = total / 2 OR per = total / 200 * 100
    If chkCadet.value = 1 Then OR True or vbChecked
        per = per + 3
    End If
    txtPercentage.Text=per
End Sub
```

(b) Sub cmdCalcGrade_Click()
 Dim per, grade
 per = Val(txtPercentage.Text)
 If optMedical.Value = True And per >= 80 Then
 grade = "A"
 ElseIf optMedical.Value = True And per >=60 Then
 grade = "B"
 ElseIf optMedical.Value = True Then
 grade = "C"
 End If
 If optNonMedical.Value = True And per >= 75 Then
 grade = "A"
 ElseIf optNonMedical.Value = True And per >= 50 Then
 grade = "B"
 Else
 grade = "C"
 End If
 txtGrade.Text=grade
End Sub

OR

Sub cmdCalcGrade_Click()
 Dim per, grade
 per = Val(txtPercentage.Text)
 If optMedical.Value = True
 If per >= 80 Then
 grade = "A"
 ElseIf per >=60 Then
 grade = "B"
 Else
 grade = "C"
 End If
 Else
 If per >= 75 Then
 grade = "A"
 ElseIf per >= 50 Then
 grade = "B"
 Else
 grade = "C"
 End If
 End If
 txtGrade.Text=grade
End Sub

Q13.: Find the errors from the following code segment and rewrite, the corrected code underlining the correction made:

Private Sub Command1_Click()
 Dim p = 1 As Integer, i As Integer
 For i = 1 UpTo 50
 p = p + 1
 If p = 5 Then
 p = 1
 Display "P is equal to 5"
 Else
 Display "P is not equal to 5"
 End If
 Next i
End Sub

```
Loop i
End Sub
```

```
Sol.: Private Sub Command1_Click()
    Dim p As Integer, i As Integer
    p = 1
    For i = 1 To 50
        p = p + 1
        If p = 5 Then
            p = 1
            Print "p is equal to 5"
        Else
            Print "p is not equal to 5"
        End If
    Next i
End Sub
```

Q14.: Write a procedure to calculate the factorial of a number passed by user.

```
Sol.: Private Sub DFactorial( dim counter as integer)
    Dim factorial As Long, strAnswer As String
    factorial = 1
    For a = counter to 1 Step -1
        factorial = factorial * a
    Next a
    Print "Factorial of " & txtFactorial.Text & " is " & factorial
End Sub
```

Q15. Write a Visual Basic function that takes an integer argument N and returns the sum of all even numbers less than the given number N.

```
sol.: Function SumEven(N)as integer
    SumEven=0
    For k = 2 To N Step 2
        If k mod 2 =0 Then
            SumEven = SumEven + k
        End If
    Next k
End Function
```

Q16. Write a function that takes two string arguments and returns 0 if both are equal. The function returns -1 if the first argument is smaller than the second, and 1 if second is small than first.

```
Sol.: private function comparestrings(byval str1 as string, byval str2 as string) as integer
    Dim result as integer
    If str1=str2 then
        Result=0
    ElseIf str1<str2 then
        Result = -1
    Else
        Result=1
    Endif
    Comparestrings=result
End function
```

Q17. Write a function that takes integer arguments and returns true if given number is prime otherwise returns false.

```
Sol.: private function isprime( num as integer) as Boolean
    Dim limit as integer, R as Boolean
    R= true
```

```

Limit=num/2
For ctr = 2 to limit
    If (num mod ctr)=0 then
        R= false
    Exit for
Endif

```

```

Next

```

```

Isprime= R

```

```

End function

```

Q18. Write a procedure that receives two start values of a Fibonacci series and the number of terms to be printed . It then prints the Fibonacci series from the given two values.

Sol.: private sub fibo(s1 as integer,s2 as integer,n as integer)

```

    Dim count as integer, term as integer

```

```

    Print s1

```

```

    Print s2

```

```

    For count = 3 to n

```

```

        Term= s1+s2

```

```

        S1=s2

```

```

        S2=term

```

```

    Next count

```

```

End sub

```

Q19. Write a procedure to swap two numbers

Sol.: private sub swap(byref num1 as integer, byref num2 as integer)

```

    Dim temp as integer

```

```

    Temp=num1

```

```

    Num1=num2

```

```

    Num2=temp

```

```

End sub

```

Q20. What are Events ? What are Event Procedures ? How are they related ?

Sol.: Event refers to the occurrence of an activity usually in response to the user's action, such as a key press, mouse button click or a keystroke. Event procedures are procedures that are called when a corresponding event occurs.

OR

An event procedure is executed when the event connected with it occurs.

Q21. Write a procedure in VB that takes in year of birth of a person as an argument. It displays a message box indicating how many years are left for the person to reach the retirement age of 60. If the user is older than 65, wish him/her for a long life !

sol.: Sub Check(Year_Birth As Integer)

```

    Dim Age, Retire

```

```

    Age = Year(Date()) – Year_Birth

```

```

    Retire = 60 – Age

```

```

    If Retire > 0 Then

```

```

        MsgBox “Years left for retirement:” + Retire

```

```

    End If

```

```

    If Age > 65 Then

```

```

        MsgBox “Wish you a long life!”

```

```

    End If

```

```

End Sub

```

OR

Private Sub checkage(birthyear As Integer)

```

    Dim age As Integer

```

```

    age = Year(Now) - birthyear

```

```

    If age > 65 Then
        MsgBox "Have a long Life !"
    End If
    If age <= 60 Then
        MsgBox "There are "& 60-age & " Years left for Retirement"
    End If
End Sub
OR
Sub retire(bday As Date)
    myage = Abs(DateDiff("yyyy", bday, Now))
    If myage <= 60 Then
        Print "Years left for retirement : "& 60 - myage
    End If
    If myage > 65 Then
        MsgBox ("Happy long life...")
    End If
End Sub
End Sub

```