VBugs Chapter 6 Worksheet

*Solutions*

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| **Name:** |
| **Home Room:** |

Question 1: Define the terms: Method; Sub Procedure; Function; Parameter.

Method:

Each method can take some parameters to operate with. A parameter is an argument that is passed to the method by the method that calls it. Parameters are enclosed in parentheses (brackets) after the method name in the method declaration.

A function is a method which returns a value. Functions are used to evaluate data, make calculations or to transform data. Declaring a Function is similar to declaring a Sub procedure. Functions are declared with the Function keyword.

Sub procedures (or just Subs) are methods which do not return a value. Each time when the Sub procedure is called the statements within it are executed until the matching End Sub is reached. Sub Main()

A Method is a procedure built into the program. They are a series of statements that are executed when called from somewhere else in your program. Methods allow us to handle code in a simple and organized fashion, this is important as our program becomes more complex.

Sub Procedure:

Function:

Parameter:

Question 2

1. Which of the following Subs (Figure 3 or Figure 4) would execute first? Explain your answer

The Main procedure would excecute first as discussed earlier the Main sub procedure is the default procedure that first runs and calls other procedures.

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| Public Sub Main()  'calls the sub that prints “Hello World!”  HelloWorld()  'declaring variables to use  Dim a, b As Integer  a = 5  b = 2  'using a funcion and passing variables into it  a = CalculateAvarage(a, b)  text.Drawtext(c)  End Sub |

Figure 3

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| Public Sub CalculateAvarage()  'local variables a and b  Dim a, b As Integer  a = 5  b = 2  c = a/b  'statements to execute  ...  End Sub |

Figure 4

1. Could you access the variable “c” from the Main() procedure to draw it to the screen? Explain your answer.

The variable c can not be access from the main procedure as it only exists in CalculateAverage. It is a method variable therefore it only has method scope.

*Exercise 1: Creating ControlMusic() Sub Procedure*

Create ControlMusic() Sub, which will stop and start the music during the game. Call this method inside the Game Loop. Write the code that enables it in the area below:

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| Answer:  Public Sub ControlMusic()  If Input.WasKeyTyped(SwinGame.Keys.VK\_M) Then  If Audio.IsMusicPlaying() = True Then  Audio.StopMusic()  Else  Audio.PlayMusic(GameMusic("lion"), -1)  End If  End If  End Sub  Module GameLogic                      Public Sub Main()  ...    'Game Loop  Do  ControlMusic()  'Refreshes the Screen and Processes Input Events  … |

*Exercise 2: Making additional changes*

cha 2 - worksheet.pngMake the following changes in your program and write your solutions to the worksheet:

1. Create a new Sub Procedure called ChangeVolume() which will raise and lower the volume of the music. Put this sub before the Main() sub and call it from inside the Game Loop. Write the code that enables you to do this in the area below:

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| Answer:  ChangeVolume()  Public Sub ChangeVolume()  If Input.IsKeyPressed(SwinGame.Keys.VK\_UP) Then  Audio.SetMusicVolume(Audio.MusicVolume + 0.01F)  End If  If Input.IsKeyPressed(SwinGame.Keys.VK\_DOWN) Then  Audio.SetMusicVolume(Audio.MusicVolume - 0.01F)  End If  End Sub  …  Module GameLogic                      Public Sub Main()  ...    'Game Loop  Do      'Refreshes the Screen and Processes Input Events  … |

1. Create a new Sub Procedure called DrawMouse() which draws the target instead of the default mouse pointer(cut the code from Main sub). Call this sub inside the Game Loop somewhere after the clear screen.

Write the code that enables you to do this in the area below:

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| Answer:  …  Module GameLogic                Public Sub Main()  ...    'Game Loop  Do  SwinGame.Graphics.ClearScreen(Color.White)      'Refreshes the Screen and Processes Input Events  … |

DrawMouse()

Public Sub ChangeVolume()

If Input.IsKeyPressed(SwinGame.Keys.VK\_UP) Then

Audio.SetMusicVolume(Audio.MusicVolume + 0.01F)

End If

If Input.IsKeyPressed(SwinGame.Keys.VK\_DOWN) Then

Audio.SetMusicVolume(Audio.MusicVolume - 0.01F)

End If

End Sub

Question 3: Why is it that mousePoint has be declared in both sub procedures Main() and DrawMouse()? Explain your answer.

mousePoint has to be declared in both places because both methods are sub procedures and as discussed subs do not return a value however functions do. mousePoint is a method variable therefor it only has method scope.