VBugs Worksheet 8

Name: _____

Year Level: **SOLUTONS**

Answers to Part 1

Exercise 1: *Creating a list*

1. Create a list of bugs in your program. Write the code you used to achieve this in the area below:

Answer:

```
 Module GameLogic

Private listBugs As List(Of Bug)
…
Public Sub Main()
…

LoadResources()
Input.ShowMouse(False)
Randomize()

listBugs = New List(Of Bug)
…
```

2. Write a code that will allow each bug in your program to draw and update itself. Write the code you used to achieve this in the area below:

Answer:

```
…
SwinGame.Graphics.ClearScreen(Color.White)

For Each Bug As Bug In listBugs
     Bug.Draw()
     Bug.Update()

Next
…
```

3. Create a function that will free a sprite inside the Bug class. Write the code you used to achieve this in the area below:

Answer:

```
Public Class Bug

    Public Sub CleanUp()
        DeadSprite.Dispose()
        AliveSprite.Dispose()
    End Sub

End Class
```

Answers to Part 2

Exercise 1: *Setting up the level and score*

1. Set up levels and score as shown in tutorial. Write the code you used to achieve this in the area below:

Answer:

```
Module GameLogic

  Private level As Integer
  Private gameTimer As Timer
  Public score As Integer
  Private endLevelAt As Integer


Public Sub LevelSetUp()

    Core.StopTimer(gameTimer)

    For Each Bug As Bug In listBugs
         Bug.CleanUp()
    Next

    listBugs.Clear()
```

```
    For i As Integer = 1 To level * 3
         listBugs.Add(New Bug)
    Next

    endLevelAt = 10000 - 500 * (level - 1)
    If endLevelAt < 500 Then endLevelAt = 500

    Core.StartTimer(gameTimer)
End Sub



Public Function EndOfLevel() As Boolean

    For Each myBug As Bug In listBugs
       If myBug.IsAlive Then
             Return False
       End If
    Next
    Return True

End Function



Public Sub Main()

…

  listBugs = New List(Of Bug)

  gameTimer = Core.CreateTimer()
  Dim time As Integer

  level = 1
  LevelSetUp()
  score = 0

…

Do
'Clears the Screen to White (customized color)
SwinGame.Graphics.ClearScreen(Color.White)

time = (endLevelAt - Core.GetTimerTicks(gameTimer)) / 100

    If EndOfLevel() Then
         level = level + 1
         LevelSetUp()
    End If

    If time < 0 Then
         score = score - 1
         Core.StopTimer(gameTimer)
         Core.StartTimer(gameTimer)
    End If

...
```

Exercise 2: *Printing current score and time on the screen*

1. Load new fonts into your program. Write the code you used to achieve this in the area below:

Answer:

```
  Private Sub LoadFonts()

    NewFont("cat_scratch", "cat_scratch.ttf", 40)
    NewFont("bear", "bear.ttf", 120)
    NewFont("bear_huge", "bear.ttf", 170)
    NewFont("comic", "comic.ttf", 16)

  End Sub
```

2. Draw current score and time n the screen. Write the code that enables you to achieve this in the area below:

Answer:

```
  …
  time = (endLevelAt - Core.GetTimerTicks(gameTimer)) / 100

  Text.DrawText("Bugs killed: " & score, Color.Green,
GameFont("comic"), 2, 2)


  Text.DrawText("Time: " & time, Color.Green, GameFont("comic"),
730, 2)

  …
```

Exercise 3: *Printing a start and end point of the game*

1. Build into your program DrawLevelStart() and DrawLevelEnd() procedures. Write the code that enables you to achieve this in the area below:

Answer:

```
 Module GameLogic
 Public Sub DrawLevelStart()

    For i As Integer = 1 To 22
       Graphics.ClearScreen(Color.White)
       Text.DrawText("Level " & level, Color.Green,
GameFont("bear"), 280, 200)
       Text.DrawText("Score: " & score, Color.Green,
GameFont("cat_scratch"), 320, 300)
       Core.RefreshScreen(30)
       Core.ProcessEvents()
    Next

 End Sub



  Public Sub DrawLevelEnd()

    Do
      Graphics.ClearScreen(Color.White)

      Text.DrawText("YOU ", Color.Green, GameFont("bear"), 80,
150)
      Text.DrawText("LOOOOSE!", Color.Red, GameFont("bear_huge"),
275, 125)
      Text.DrawText("Level " & level, Color.Green,
GameFont("cat_scratch"), 300, 340)
      Text.DrawText("Press ENTER to start", Color.Green,
GameFont("cat_scratch"), 180, 480)

      Core.RefreshScreen(30)
      Core.ProcessEvents()
     Loop Until Input.WasKeyTyped(Keys.VK_RETURN) Or
SwinGame.Core.WindowCloseRequested() = True

score = 0
     level = 1
     LevelSetUp()

  End Sub


 Public Sub LevelSetUp()
    Core.StopTimer(gameTimer)

    DrawLevelStart()
  ...
  End Sub
```

```
Public Sub Main()
 …

 'Game Loop
 Do
 …


 If time < 0 Then
    score = score - 1
    Core.StopTimer(gameTimer)
    Core.StartTimer(gameTimer)

    If score < 0 Then
         DrawLevelEnd()
    End If

End If
…

End Sub

End Module
```