VBugs Worksheet 7

Name: _____

Year Level: **SOLUTIONS**

Answers to Part 1

Exercise 1: Creating fields and a property

1. In you Bug class, create AliveSprite, DeadSprite and Alive fields and a property for Alive field.

Answer:

```
Public Class Bug

Private Alive As Boolean
Private AliveSprite As Sprite
Private DeadSprite As Sprite

Public Property IsAlive() As Boolean
      Get
          Return Alive
      End Get
      Set(ByVal value As Boolean)
          Alive = value
      End Set
End Property

End Class
```

Exercse 2: Creating a constructor

1. Ceate a costructor for your Bug class.

Answer:

```
Public Class Bug
…

Public Sub New()
Alive = True

  If IsAlive Then
      AliveSprite =  Graphics.CreateSprite(GameImage("sprite"))
      AliveSprite.X = Rnd() * (800 - AliveSprite.Width)
      AliveSprite.Y = Rnd() * (600 - AliveSprite.Height)
      AliveSprite.Movement.X = Rnd() * 2 - 1
      AliveSprite.Movement.Y = Rnd() * 2 - 1
   End If

End Sub

End Class
```

Exercise 3: Creating Draw() and Update() methods

1. Create Draw() and Update() methods inside the Bug class.

Answer:

```
Public Class Bug
…

Public Sub Draw()
      If IsAlive Then
          Graphics.DrawSprite(AliveSprite)
      Else
          Graphics.DrawSprite(DeadSprite)
      End If
End Sub

Public Sub Update()
      If IsAlive Then
          Graphics.UpdateSprite(AliveSprite)
      Else
          Graphics.UpdateSprite(DeadSprite)
      End If
End Sub


End Class
```

Exercise 4: Creating an object

1. Create myBug object and make it to draw and to update itself (do not forget to add Randomize() method). Debug to see the result.

Answer:

```
…

LoadResources()
Input.ShowMouse(False)

Randomize()

Dim myBug As Bug
myBug = New Bug

…

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

myBug.Draw()
myBug.Update()

DrawMouse()
…
```

Answers to Part 2

Exercise 1: Creating CheckCollisions() method

1. Create CheckCollisions() method inside the Bug Class. Debug to see the result.

Answer:

```
  Public Class Bug

  …

  Public Sub Update()
        If IsAlive Then

            CheckCollisions()

  …

  End Sub

  …

  Private Sub CheckCollisions()
      If AliveSprite.X + AliveSprite.Width >= Core.ScreenWidth Or
AliveSprite.X <= 0 Then
            AliveSprite.Movement.X = -AliveSprite.Movement.X
            Audio.PlaySoundEffect(GameSound("hit"))
      End If

      If AliveSprite.Y + AliveSprite.Height >= Core.ScreenHeight
Or AliveSprite.Y <= 0 Then
            AliveSprite.Movement.Y = -AliveSprite.Movement.Y
            Audio.PlaySoundEffect(GameSound("hit"))
      End If
  End Sub

  End Class
```

Answers to Part 3

Exercise 1: Creating CheckIfClicked() method

1. Create ChechkIfClicked() method inside the Bug class. Debug to see the result.

Answer:

```
  Public Class Bug

  …

  Public Sub Update()
        If IsAlive Then

             CheckIfClicked()

  …

  End Sub

  …

  Private Sub CheckIfClicked()
     Dim mousePoint As Point2D
     mousePoint = Input.GetMousePosition()

     If IsAlive And Physics.IsSpriteOnScreenAt(AliveSprite,
mousePoint.X, mousePoint.Y) Then
          If Input.MouseWasClicked(MouseButton.LeftButton) Then
               Audio.PlaySoundEffect(GameSound("hit1"))
               Alive = False

               DeadSprite =
Graphics.CreateSprite(GameImage("deadBug"), 20, 10, 57, 43)
               DeadSprite.EndingAction = SpriteEndingAction.Stop

               DeadSprite.X = AliveSprite.X
               DeadSprite.Y = AliveSprite.Y
           End If
      End If
   End Sub

  End Class
```