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' *****
' Surname, Initials: Kuni, D
' Student Number: 201320596
' Practical: P05
' Class name: frmрге
' *****
Option Strict On
Option Explicit On
Option Infer Off
Public Class frmрге
    Private Elfs() As cElf
    Private Orcs() As cOrc
    Private Humans() As cHuman
    Private ne, h, o As Integer
#Region "Inputting of data"
    Private Sub btnhuman_Click(sender As Object, e As EventArgs) Handles btnhuman.Click
        h += 1 'increase of number of objects
        ReDim Preserve Humans(h)
        Dim name As String = InputBox("Please enter the name of the Human")
        Humans(h) = New cHuman(name) 'calls constructor to get rest of the data
    End Sub
    Private Sub btnorc_Click(sender As Object, e As EventArgs) Handles btnorc.Click
        o += 1 'increase of number of objects
        ReDim Preserve Orcs(o)
        Dim name As String = InputBox("Please enter the name of the Orc")
        Orcs(o) = New cOrc(name) 'calls constructor to get rest of the data
    End Sub
    Private Sub btnelf_Click(sender As Object, e As EventArgs) Handles btnelf.Click
        ne += 1 'increase of number of objects
        ReDim Preserve Elfs(ne)
        Dim name As String = InputBox("Please enter the name of the Elf")
        Elfs(ne) = New cElf(name) 'calls constructor to get rest of the data
    End Sub
#End Region
#Region "Display of Data"
    Private Sub btndh_Click(sender As Object, e As EventArgs) Handles btndh.Click
        'displays all Humans into the grid
        grdDp.Cols = h + 1
        PIG(0, 4, "Cowardness Level")
        PIG(0, 5, "Speed Level ")
        For i As Integer = 1 To h
            PIG(i, 0, "Human " + CStr(i))
            PIG(i, 1, Humans(i).name)
            PIG(i, 2, CStr(Humans(i).Attack))
            PIG(i, 3, CStr(Humans(i).Defence))
            PIG(i, 4, CStr(Humans(i).Cowardness))
            PIG(i, 5, CStr(Humans(i).speed))
            PIG(i, 6, CStr(Math.Round(Humans(i).power, 2)))
            PIG(i, 7, CStr(Math.Round(Humans(i).defend, 2)))
            PIG(i, 8, CStr(Math.Round(Humans(i).rating, 2)))
        Next
    End Sub
    Private Sub btndo_Click(sender As Object, e As EventArgs) Handles btndo.Click
        grdDp.Cols = o + 1
        PIG(0, 5, "Scariness Level")
        PIG(0, 4, "Armor Level ")
        For i As Integer = 1 To o
            PIG(i, 0, "Orc " + CStr(i))

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        PIG(i, 1, Orcs(i).name)
        PIG(i, 2, CStr(Orcs(i).Attack))
        PIG(i, 3, CStr(Orcs(i).Defence))
        PIG(i, 4, CStr(Orcs(i).armor))
        PIG(i, 5, CStr(Orcs(i).Scariness))
        PIG(i, 6, CStr(Math.Round(Orcs(i).power, 2)))
        PIG(i, 7, CStr(Math.Round(Orcs(i).defend, 2)))
        PIG(i, 8, CStr(Math.Round(Orcs(i).rating, 2)))
    Next
End Sub

Private Sub btnElfs_Click(sender As Object, e As EventArgs) Handles btnElfs.Click
    'displays all Elfs into the grid
    grdDp.Cols = ne + 1
    lblGridText.Text = "A Table showing multiple Elf information"
    PIG(0, 4, "AccuracyLevel")
    PIG(0, 5, "Adrenaline Level ")
    For i As Integer = 1 To ne
        PIG(i, 0, "Elf " + CStr(i))
        PIG(i, 1, Elfs(i).name)
        PIG(i, 2, CStr(Elfs(i).Attack))
        PIG(i, 3, CStr(Elfs(i).Defence))
        PIG(i, 4, CStr(Elfs(i).Accuracy))
        PIG(i, 5, CStr(Elfs(i).Adrenaline))
        PIG(i, 6, CStr(Math.Round(Elfs(i).power, 2)))
        PIG(i, 7, CStr(Math.Round(Elfs(i).defend, 2)))
        PIG(i, 8, CStr(Math.Round(Elfs(i).rating, 2)))
    Next
End Sub
#End Region
#Region "Methods and others"
Private Sub PIG(c As Integer, r As Integer, t As String) 'stands for place in grid
    grdDp.Col = c
    grdDp.Row = r
    grdDp.Text = t
End Sub
Private Sub frmрге_Load(sender As Object, e As EventArgs) Handles MyBase.Load
    'set up of grid partially
    grdDp.set_ColWidth(0, 120)
    PIG(0, 1, "Name ")
    PIG(0, 2, "Attack Level")
    PIG(0, 3, "Defence Level")
    PIG(0, 6, "Power")
    PIG(0, 7, "Overall Defence")
    PIG(0, 8, "Rating")
End Sub
#End Region

End Class

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' *****
' Surname, Initials: Kuni, D
' Student Number: 201320596
' Practical: P05
' Class name: cRaceGroup

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' *****
Option Strict On
Option Explicit On
Option Infer Off
Public MustInherit Class cRaceGroup
    Implements ibasics
#Region "Attributes "
    Protected _name As String
    Protected _Attack As Double
    Protected _Defence As Double
#End Region
#Region "Properties"
    Public ReadOnly Property name As String
        Get
            Return _name
        End Get
    End Property
    Public Property Attack As Double
        Get
            Return _Attack
        End Get
        Set(value As Double)
            _Attack = calcVal(value)
        End Set
    End Property
    Public Property Defence As Double
        Get
            Return _Defence
        End Get
        Set(value As Double)
            _Defence = calcVal(value)
        End Set
    End Property
#End Region
#Region "Methods"
    Public MustOverride Function defend() As Double Implements ibasics.defend
    Protected Function calcVal(ByVal value As Double) As Double 'Utility for property
methods
    If value <= 10 And value >= 0 Then
        calcVal = value
    Else
        Dim a As Double = CDb1(InputBox("Invalid input , Please enter a value between
0 and 10 ", "Error!!"))
        calcVal = calcVal(a)
    End If
    End Function
    Public Overridable Function power() As Double Implements ibasics.power
        power = _Attack 'just returns attack
    End Function

    Public Overridable Function rating() As Double Implements ibasics.rating
        rating = 10 * (Attack / Defence) 'calculates rating
    End Function
#End Region
#Region "Constructors"
    Public Sub New(name As String)
        'gets necessary data from the user
        Me._name = name

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        Attack = CDb1(InputBox("Please enter the Attack of " + name + " a level between 0
and 10"))
        Defence = CDb1(InputBox("Please enter the Defence of " + name + " a level between
0 and 10"))
    End Sub
    Public Sub New() 'incase user wants to enter data differently
        _name = ""
        Attack = 0
        Defence = 0
    End Sub
#End Region
End Class

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' *****
' Surname, Initials: Kuni, D
' Student Number: 201320596
' Practical: P05
' Class name: cHuman
' *****
Option Strict On
Option Explicit On
Option Infer Off
Public Class cHuman
    Inherits cRaceGroup
#Region "Attributes "
    Protected _speed As Double 'increases the attack of the human
    Protected _cowardness As Double 'weakens the defence and attack of the human
#End Region
#Region "Properties"
    Public Property speed As Double
        Get
            Return _speed
        End Get
        Set(value As Double)
            _speed = calcVal(value)
        End Set
    End Property
    Public Property Cowardness As Double
        Get
            Return _cowardness
        End Get
        Set(value As Double)
            _cowardness = calcVal(value)
        End Set
    End Property
#End Region
#Region "Methods"
    Public Overrides Function defend() As Double
        Return Defence - _cowardness
    End Function

    Public Overrides Function power() As Double
        Return MyBase.power - _cowardness + (_speed * 0.3256)
    End Function

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        Public Overrides Function rating() As Double
            Return MyBase.rating - _cowardness + (0.5 * _speed)
        End Function
    #End Region
    #Region "Constructors"
        Public Sub New(name As String)
            'Gets data from the user
            MyBase.New(name)
            speed = CDb1(InputBox("Please enter the speed of " + name + " a level between 0
and 10"))
            Cowardness = CDb1(InputBox("Please enter the cowardness level of " + name + " a
level between 0 and 10"))
        End Sub
        Public Sub New()
            MyBase.New()
            speed = 0
            Cowardness = 0
        End Sub
    #End Region
End Class

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' *****
' Surname, Initials: Kuni, D
' Student Number: 201320596
' Practical: P05
' Class name: cOrc
' *****
Option Strict On
Option Explicit On
Option Infer Off
Public Class cOrc
    Inherits cRaceGroup
    #Region "Attributes "
        Protected _armor As Double 'armor for the orc
        Protected _scariness As Double 'orcs is generally scary
    #End Region
    #Region "Properties"
        Public Property armor As Double
            Get
                Return _armor
            End Get
            Set(value As Double)
                _armor = calcVal(value)
            End Set
        End Property
        Public Property Scariness As Double
            Get
                Return _scariness
            End Get
            Set(value As Double)
                _scariness = calcVal(value)
            End Set
        End Property
    #End Region
    #Region "Methods"
        Public Overrides Function defend() As Double
            Return Defence + _armor

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End Function
Public Overrides Function rating() As Double
    Return MyBase.rating() + _scariness - _armor
End Function
Public Overrides Function power() As Double
    Return MyBase.power() - _armor + (0.23569 * _scariness)
End Function
#End Region
#Region "Constructors"
Public Sub New()
    MyBase.New()
    armor = 0
    Scariness = 0
End Sub
Public Sub New(name As String)
    'Gets data from the user
    MyBase.New(name)
    armor = Cdbl(InputBox("Please enter the Armor Level of " + name + " a level
between 0 and 10"))
    Scariness = Cdbl(InputBox("Please enter the Scariness Level of " + name + " a
level between 0 and 10"))
End Sub
#End Region
End Class

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' *****
' Surname, Initials: Kuni, D
' Student Number: 201320596
' Practical: P05
' Class name: cElf
' *****

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Option Strict On
Option Explicit On
Option Infer Off
Public Class cElf
    Inherits cRaceGroup
#Region "Attributes "
    Protected _Accuracy As Double
    Protected _Adrenaline As Double
#End Region
#Region "Properties"
    Public Property Accuracy As Double
        Get
            Return _Accuracy
        End Get
        Set(value As Double)
            _Accuracy = calcVal(value)
        End Set
    End Property
    Public Property Adrenaline As Double
        Get
            Return _Adrenaline
        End Get
        Set(value As Double)
            _Adrenaline = calcVal(value)

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        End Set
    End Property
#End Region
#Region "Methods"
    Public Overrides Function defend() As Double
        Return Defence
    End Function
    Public Overrides Function power() As Double
        Return MyBase.power() + (0.25 * _Adrenaline) + _Accuracy
    End Function
#End Region
#Region "Constructors"
    Public Sub New()
        MyBase.New()
        Accuracy = 0
        Adrenaline = 0
    End Sub
    Public Sub New(name As String)
        'Gets data from the user
        MyBase.New(name)
        Accuracy = Cdbl(InputBox("Please enter the Accuracy Level of " + name + " a level
between 0 and 10"))
        Adrenaline = Cdbl(InputBox("Please enter the Adrenaline level of " + name + " a
level between 0 and 10"))
    End Sub
#End Region
End Class

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' *****
' Surname, Initials: Kuni, D
' Student Number: 201320596
' Practical: P05
' Class name: ibasics
' *****
Option Strict On
Option Explicit On
Option Infer Off
Public Interface ibasics
    Function power() As Double
    Function defend() As Double
    Function rating() As Double
End Interface

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