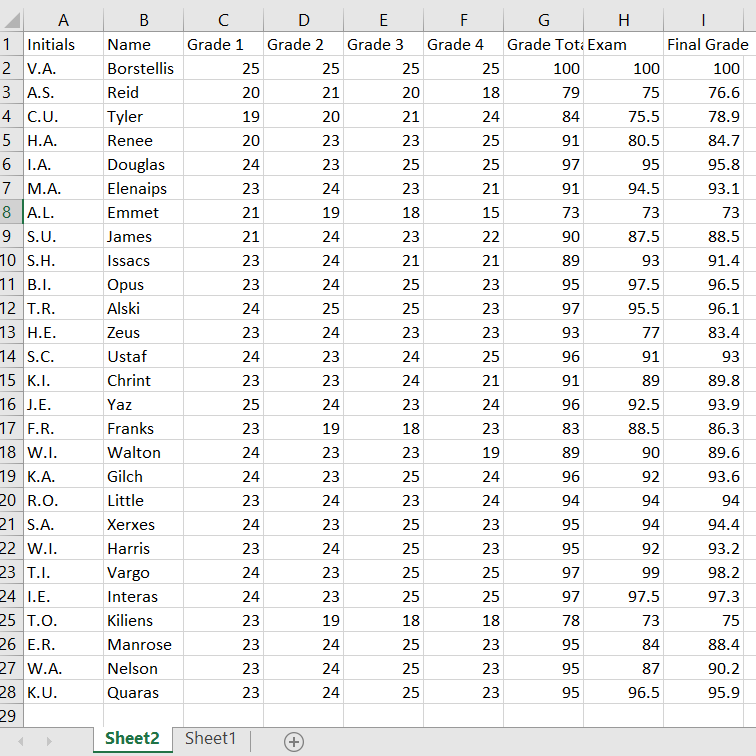
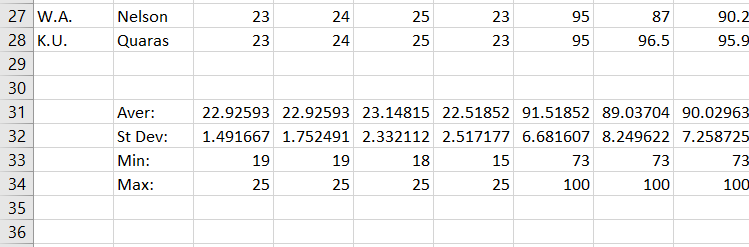
Program Cover Sheet

|  |
| --- |
| Name: Nathan VanSnepson |
| Assignment: Assignment 9 |
| List any parts of the assignment that do not work/were not completed: (None) |

|  |
| --- |
| Instructor’s Comments: |
| Grade: |

Program Submission Requirements: (1) all files, zipped and uploaded to Canvas and (2) a completed cover sheet, program execution screenshots and source code printed, **stapled** and turned in during class. Failure to follow the submission requirements will result in points lost on that particular assignment.





Imports Microsoft.Office.Interop

Module Main

'------------------------------------------------------------

'- File Name : Main.vb -

'- Part of Project: Assignment9 -

'------------------------------------------------------------

' Written By: Nathan VanSnepson -

' Written On: April 4, 2022 -

'------------------------------------------------------------

'- File Purpose: -

'- -

'- This file contains the logic for creating an excel sheet -

'- and populating it with student infromation. Also it adds -

'- formulas for analyzing the student data -

'------------------------------------------------------------

'- Program Purpose: -

'- -

'- The purpose of this program is to show statistics of -

'- students in an excel sheet using excel formulas -

'------------------------------------------------------------

'- Global Variable Dictionary (alphabetically): -

'-\*myStudents - ArrayList containing students of clsStudent -

'- type -

'------------------------------------------------------------

'---------------------------------------------------------------------------------------

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'---------------------------------------------------------------------------------------

Dim myStudents As New ArrayList

'-----------------------------------------------------------------------------------

'--- SUBPROGRAMS --- SUBPROGRAMS --- SUBPROGRAMS --- SUBPROGRAMS --- SUBPROGRAMS ---

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'-----------------------------------------------------------------------------------

Sub Main()

'------------------------------------------------------------

'- Subprogram Name: Main -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the main method that is run when the -

'- application is executed. It creates a new excel sheet and-

'- populates it with student information and statistics -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- (None) -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'-\*anExcelDoc - Excel Doc Application -

'-\*CheckExcel - Used to check if excel sheet already exists -

'-\*intLoop - Loop counter -

'------------------------------------------------------------

Dim CheckExcel As Object

Dim anExcelDoc As Excel.Application

Dim intLoop As Integer = 2

'Insert Student records into array

InsertMyStudents()

'Checks if excel object exists

Try

CheckExcel = GetObject(, "Excel.Application")

Catch Ex As Exception

'Excel was not running, so we got an error

End Try

'Create a new instance of excel

If CheckExcel Is Nothing Then

'Create a new instance of Excel

anExcelDoc = New Excel.Application()

anExcelDoc.Visible = True

Else

anExcelDoc = CheckExcel

anExcelDoc.Visible = True

End If

'Add a new workbook and a new sheet

anExcelDoc.Workbooks.Add()

anExcelDoc.Sheets.Add()

'Put student information into excel sheet

PutStudentsIntoExcel(anExcelDoc, intLoop)

'Put formulas into excel sheet

Formula(anExcelDoc, "Aver:", "Average", intLoop, 0)

Formula(anExcelDoc, "St Dev:", "STDEV", intLoop, 1)

Formula(anExcelDoc, "Min:", "MIN", intLoop, 2)

Formula(anExcelDoc, "Max:", "MAX", intLoop, 3)

End Sub

Private Sub PutStudentsIntoExcel(ByRef anExcelDoc, ByRef intLoop)

'------------------------------------------------------------

'- Subprogram Name: PutStudentsIntoExcel -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is puts the data into Excel -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*anExcelDoc - reference to the excel document -

'-\*intLoop - reference to a loop counter -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

'Excel file headers

anExcelDoc.Cells(1, 1) = "Initials"

anExcelDoc.Cells(1, 2) = "Name"

anExcelDoc.Cells(1, 3) = "Grade 1"

anExcelDoc.Cells(1, 4) = "Grade 2"

anExcelDoc.Cells(1, 5) = "Grade 3"

anExcelDoc.Cells(1, 6) = "Grade 4"

anExcelDoc.Cells(1, 7) = "Grade Total"

anExcelDoc.Cells(1, 8) = "Exam"

anExcelDoc.Cells(1, 9) = "Final Grade"

'Fill excel file with data

For Each student As clsStudent In myStudents

anExcelDoc.Cells(intLoop, 1) = student.GetInitials

anExcelDoc.Cells(intLoop, 2) = student.GetLastName

anExcelDoc.Cells(intLoop, 3) = student.GetArrAssignment(0)

anExcelDoc.Cells(intLoop, 4) = student.GetArrAssignment(1)

anExcelDoc.Cells(intLoop, 5) = student.GetArrAssignment(2)

anExcelDoc.Cells(intLoop, 6) = student.GetArrAssignment(3)

anExcelDoc.Cells(intLoop, 7) = "=SUM(C" & intLoop & ":F" & intLoop & ")"

anExcelDoc.Cells(intLoop, 8) = student.GetIntExam

anExcelDoc.Cells(intLoop, 9) = "=((G" & intLoop & " \* .40) + (H" & intLoop & " \* .60))"

intLoop = intLoop + 1

Next

End Sub

Private Sub Formula(ByRef anExcelDoc, ByVal strHeader, ByVal strformula, ByVal intEnd, ByVal intRow)

'------------------------------------------------------------

'- Subprogram Name: PutStudentsIntoExcel -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is puts the data into Excel -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*anExcelDoc - reference to the excel document -

'-\*strHeader - Truncated description of formula -

'-\*strFormula - The excel formual -

'-\*intEnd - The last row of data -

'-\*intRow - How many rows after intEnd + 2 to put formulas -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

'Puts formulas into excel file

anExcelDoc.Cells(intEnd + 2 + intRow, 2) = strHeader

anExcelDoc.Cells(intEnd + 2 + intRow, 3) = "=" & strformula & "(C2:C" & intEnd & ")"

anExcelDoc.Cells(intEnd + 2 + intRow, 4) = "=" & strformula & "(D2:D" & intEnd & ")"

anExcelDoc.Cells(intEnd + 2 + intRow, 5) = "=" & strformula & "(E2:E" & intEnd & ")"

anExcelDoc.Cells(intEnd + 2 + intRow, 6) = "=" & strformula & "(F2:F" & intEnd & ")"

anExcelDoc.Cells(intEnd + 2 + intRow, 7) = "=" & strformula & "(G2:G" & intEnd & ")"

anExcelDoc.Cells(intEnd + 2 + intRow, 8) = "=" & strformula & "(H2:H" & intEnd & ")"

anExcelDoc.Cells(intEnd + 2 + intRow, 9) = "=" & strformula & "(I2:I" & intEnd & ")"

End Sub

Private Sub InsertMyStudents()

'------------------------------------------------------------

'- Subprogram Name: InsertMyStudents -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is puts students into Student Array -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- (None) -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

myStudents.Add(New clsStudent("V.A.", "Borstellis", {25, 25, 25, 25}, 100.0))

myStudents.Add(New clsStudent("A.S.", "Reid", {20, 21, 20, 18}, 75.0))

myStudents.Add(New clsStudent("C.U.", "Tyler", {19, 20, 21, 24}, 75.5))

myStudents.Add(New clsStudent("H.A.", "Renee", {20, 23, 23, 25}, 80.5))

myStudents.Add(New clsStudent("I.A.", "Douglas", {24, 23, 25, 25}, 95.0))

myStudents.Add(New clsStudent("M.A.", "Elenaips", {23, 24, 23, 21}, 94.5))

myStudents.Add(New clsStudent("A.L.", "Emmet", {21, 19, 18, 15}, 73.0))

myStudents.Add(New clsStudent("S.U.", "James", {21, 24, 23, 22}, 87.5))

myStudents.Add(New clsStudent("S.H.", "Issacs", {23, 24, 21, 21}, 93.0))

myStudents.Add(New clsStudent("B.I.", "Opus", {23, 24, 25, 23}, 97.5))

myStudents.Add(New clsStudent("T.R.", "Alski", {24, 25, 25, 23}, 95.5))

myStudents.Add(New clsStudent("H.E.", "Zeus", {23, 24, 23, 23}, 77.0))

myStudents.Add(New clsStudent("S.C.", "Ustaf", {24, 23, 24, 25}, 91.0))

myStudents.Add(New clsStudent("K.I.", "Chrint", {23, 23, 24, 21}, 89.0))

myStudents.Add(New clsStudent("J.E.", "Yaz", {25, 24, 23, 24}, 92.5))

myStudents.Add(New clsStudent("F.R.", "Franks", {23, 19, 18, 23}, 88.5))

myStudents.Add(New clsStudent("W.I.", "Walton", {24, 23, 23, 19}, 90.0))

myStudents.Add(New clsStudent("K.A.", "Gilch", {24, 23, 25, 24}, 92.0))

myStudents.Add(New clsStudent("R.O.", "Little", {23, 24, 23, 24}, 94.0))

myStudents.Add(New clsStudent("S.A.", "Xerxes", {24, 23, 25, 23}, 94.0))

myStudents.Add(New clsStudent("W.I.", "Harris", {23, 24, 25, 23}, 92.0))

myStudents.Add(New clsStudent("T.I.", "Vargo", {24, 23, 25, 25}, 99.0))

myStudents.Add(New clsStudent("I.E.", "Interas", {24, 23, 25, 25}, 97.5))

myStudents.Add(New clsStudent("T.O.", "Kiliens", {23, 19, 18, 18}, 73.0))

myStudents.Add(New clsStudent("E.R.", "Manrose", {23, 24, 25, 23}, 84.0))

myStudents.Add(New clsStudent("W.A.", "Nelson", {23, 24, 25, 23}, 87.0))

myStudents.Add(New clsStudent("K.U.", "Quaras", {23, 24, 25, 23}, 96.5))

End Sub

End Module

Public Class clsStudent

'------------------------------------------------------------

'- File Name : clsStudent.vb -

'- Part of Project: Assignment9 -

'------------------------------------------------------------

' Written By: Nathan VanSnepson -

' Written On: April 4, 2022 -

'------------------------------------------------------------

'- File Purpose: -

'- -

'- This file contains the logic for a Student Object -

'------------------------------------------------------------

'- Global Variable Dictionary (alphabetically): -

'-\*arrAssignment - Array of assignment grades -

'-\*dblExam - Exam score -

'-\*strInitials - Students first and middle initials -

'-\*strLastName - Students last name -

'------------------------------------------------------------

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'---------------------------------------------------------------------------------------

Private strInitials As String

Private strLastName As String

Private arrAssignment(4) As Integer

Private dblExam As Double

'-----------------------------------------------------------------------------------

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'-----------------------------------------------------------------------------------

#Region "Constructors"

Public Sub New(strInitials As String, strLastName As String, arrAssignment() As Integer, dblExam As Double)

'------------------------------------------------------------

'- Subprogram Name: New -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the constuctor for the Student Object -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*strInitials - first and middle initials of student -

'-\*strLastName - Last name of student -

'-\*arrAssignment - Array of assignment grades -

'-\*dblExam - Exam grade -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Me.strInitials = strInitials

Me.strLastName = strLastName

Me.arrAssignment = arrAssignment

Me.dblExam = dblExam

End Sub

#End Region

#Region "Getters/Setters"

Public Sub SetInitials(ByVal strInitials)

'------------------------------------------------------------

'- Subprogram Name: SetInitials -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the setter for strInitials -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*strInitials - Students first and middle initial -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Me.strInitials = strInitials

End Sub

Public Function GetInitials() As String

'------------------------------------------------------------

'- Subprogram Name: GetInitials -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the getter for strInitials -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- (None) -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Return strInitials

End Function

Public Sub SetLastName(ByVal strLastName)

'------------------------------------------------------------

'- Subprogram Name: SetLastName -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the setter for strLastName -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*strLastName - Students Last Name -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Me.strLastName = strLastName

End Sub

Public Function GetLastName() As String

'------------------------------------------------------------

'- Subprogram Name: GetLastName -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the getter for strLastName -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- (None) -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Return strLastName

End Function

Public Sub SetArrAssignment(ByVal arrAssignment)

'------------------------------------------------------------

'- Subprogram Name: SetArrAssignment -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the setter for arrAssignment -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*arrAssignment - array of assignment grades -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Me.arrAssignment = arrAssignment

End Sub

Public Function GetArrAssignment() As Integer()

'------------------------------------------------------------

'- Subprogram Name: GetArrAssignment -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the getter for arrAssignment -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- (None) -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Return arrAssignment

End Function

Public Sub SetIntExam(ByVal intExam)

'------------------------------------------------------------

'- Subprogram Name: SetIntExam -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the setter for SetIntExam -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'-\*SetIntExam - Exam grade -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Me.dblExam = intExam

End Sub

Public Function GetIntExam() As Double

'------------------------------------------------------------

'- Subprogram Name: GetIntExam -

'------------------------------------------------------------

'- Written By: Nathan VanSnepson -

'- Written On: April 4, 2022 -

'------------------------------------------------------------

'- Subprogram Purpose: -

'- This subprogram is the getter for dblExam -

'------------------------------------------------------------

'- Parameter Dictionary (in parameter order): -

'- (None) -

'------------------------------------------------------------

'- Local Variable Dictionary (alphabetically): -

'- (None) -

'------------------------------------------------------------

Return dblExam

End Function

#End Region

End Class