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Module Module1
    '   Programming Assignment Two: Grade Report
    '                                     By: David Rees
    '                                     11/04/18

    ' Classroom View
    '
    ' The If Statement:
    ' If A = B Then
    '     (Function or Process)
    ' End If

    ' Business View
    ' This program is designed to take a grade sheet from KVCC then print
    ' out the
    ' Student's Name, First Course ID, Credit Hours, Grade, and Grade
    ' Points then their Second
    ' Course ID, Credit Hours, Grade and Grade Points then the GPA for the
    ' two courses. After
    ' that it will print out the Total Number of Students, Credit Hours,
    ' and Grade Points. Finally
    ' it will print the Overall GPA for all of the students. This will all
    ' be formatted according
    ' to the Printer Spacing Chart provided to the programmer. It will be
    ' rounded To three Decimal
    ' points

    '   Input Variables
    '       From Data File

    '   Student Personal Info
    Private StudentNameString As String

    '   Student Course IDs
    Private CourseIDOneString As String
    Private CourseIDTwoString As String

    '   Student Credit Hours Info
    Private CreditHoursInteger As Integer           ' .ToString()
    Private CreditHours2Integer As Integer          ' .ToString()

    '   Student Grade Info
    Private GradeOneDecimal As Decimal              ' .ToString("N1")
    Private GradeTwoDecimal As Decimal              ' .ToString("N1")

    '   End Of Input Variables
    '       From Data File

    '   Processing Variables
    Private CurrentRecordString() As String
    Private AccumPageCounterInteger As Integer = 1
    Private AccumLineCounterInteger As Integer = 99
    Private Const MAX_LINE_COUNT_INTEGER As Integer = 20

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' End Of Proccessing Variables

' Output Variables
Private GradePointsOneDecimal As Decimal ' .ToString("N1")
Private GradePointsTwoDecimal As Decimal ' .ToString("N1")
Private GradePointAverageDecimal As Decimal ' .ToString("N")

Private AccumTotalStudentCountInteger As Integer ' .ToString()
Private AccumTotalCreditHoursInteger As Integer ' .ToString()
Private AccumTotalGradePointsDecimal As Decimal ' .ToString("N1")
Private AccumOverallGPADecimal As Decimal ' .ToString("N3")
' End Of Output Variables

' Defines GradeFile as the File Location and the Type of File
Private GradeFile As New
Microsoft.VisualBasic.FileIO.TextFieldParser("GRADPNTF18.TXT")

Sub Main()
    Call HouseKeeping()
    Do While Not (GradeFile).EndOfData
        Call ProcessRecords()
    Loop
    Call EndOfJob()
End Sub

Sub HouseKeeping()
    Call SetFileDelimiters()
End Sub

Sub ProcessRecords()
    Call ReadFile()
    Call DetailCalculation()
    Call AccumulateTotals()
    Call WriteDetailLine()
End Sub

Sub EndOfJob()
    Call SummaryCalculation()
    Call SummaryOutput()
    Call CloseFile()
End Sub

Sub SetFileDelimiters()

    ' Sets File Field Type to Delimited
    GradeFile.TextFieldType = FileIO.FieldType.Delimited

    ' Delimiter is set to character within quotes. In this case
character is a comma.
    GradeFile.SetDelimiters(",")

End Sub

Sub ReadFile()

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' ReadLine
CurrentRecordString = GradeFile.ReadFields()

' Name
StudentNameString = CurrentRecordString(0)

' Course One ID
CourseIDOneString = CurrentRecordString(1)

' Credit Hours One
CreditHoursInteger = CurrentRecordString(2)

' Grade One
GradeOneDecimal = CurrentRecordString(3)

' Course Two ID
CourseIDTwoString = CurrentRecordString(4)

' Credit Hours Two
CreditHours2Integer = CurrentRecordString(5)

' Grade Two
GradeTwoDecimal = CurrentRecordString(6)

End Sub

Sub DetailCalculation()

' Course One Grade Points Calculation
GradePointsOneDecimal = CreditHoursInteger * GradeOneDecimal

' Course Two Grade Points Calculation
GradePointsTwoDecimal = CreditHours2Integer * GradeTwoDecimal

' Student GPA Calculation
GradePointAverageDecimal = (GradePointsOneDecimal +
GradePointsTwoDecimal) / (CreditHoursInteger + CreditHours2Integer)

' If statement to decide if new page is needed.
If AccumLineCounterInteger >= 20 Then

    ' Calls Write Headings for a new page
    Call WriteHeadings()

    ' Adds One to the Page Counter so the proper number is printed.
    AccumPageCounterInteger += 1

    ' Resets the line counter so Write Headings isn't repeated more
    than necessary.
    AccumLineCounterInteger = 0

End If

' (End If) Ends the If Statement

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End Sub

Sub AccumulateTotals()

' Counts lines until equals 20 or more
AccumLineCounterInteger += 1

' Counts the total number of records or students
AccumTotalStudentCountInteger += 1

' Adds the CreditHours from both courses of the current record to
the Total Accum Credit Hours Variable.

AccumTotalCreditHoursInteger += (CreditHoursInteger +
CreditHours2Integer)

' Adds the Grade Points from both courses of the current record to
the Total Accum Grade Points Variable.

AccumTotalGradePointsDecimal += (GradePointsOneDecimal +
GradePointsTwoDecimal)

End Sub

Sub WriteHeadings()

' Blank Line for Spacing
Console.WriteLine()

' Printer Spacing Chart Line Number 01
Console.WriteLine(Space(25) & "STUDENT GRADE POINT REPORT" &
Space(18) & "Page: " & AccumPageCounterInteger.ToString().PadLeft(3))

' Printer Spacing Chart Line Number 02
Console.WriteLine(Space(31) & "BY: David Rees")

' Printer Spacing Chart Line Number 03
Console.WriteLine()

' Printer Spacing Chart Line Number 04
Console.WriteLine(Space(14) & "----- Course #1 -----" &
Space(4) & "----- Course #2 -----")

' Printer Spacing Chart Line Number 05
Console.WriteLine("Student" & Space(7) &
"Course" & Space(2) &
"Credit" & Space(7) &
"Grade" & Space(4) &
"Course" & Space(2) &
"Credit" & Space(7) &
"Grade" & Space(4) &
"Grade")

' Printer Spacing Chart Line Number 06
Console.WriteLine("Name" & Space(10) &
"ID #1" & Space(6) &

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        "Hrs Grade" & Space(3) &
        "Pts" & Space(4) &
        "ID #2" & Space(6) &
        "Hrs Grade" & Space(3) &
        "Pts" & Space(3) &
        "Pt Avg")

    ' Printer Spacing Chart Line Number 07
    Console.WriteLine()

End Sub

Sub WriteDetailLine()

    ' Printer Spacing Chart Detail Line
    Console.WriteLine(StudentNameString.PadRight(12) &
' Name Field
        Space(2) &
' Spacing
        CourseIDOneString.PadLeft(6) &
' Course One ID Field
        Space(7) &
' Spacing
        CreditHoursInteger.ToString.PadLeft(1) &
' Credit Hours Course One Field
        Space(3) &
' Spacing
        GradeOneDecimal.ToString("N1").PadLeft(3) &
' Grade Course One Field
        Space(2) &
' Spacing
        GradePointsOneDecimal.ToString("N1").PadLeft(4) &
' Grade Points Course One Field
        Space(4) &
' Spacing & End Of Course One Info
        CourseIDTwoString.PadLeft(6) &
' Course Two ID
        Space(7) &
' Spacing
        CreditHours2Integer.ToString.PadLeft(1) &
' Credit Hours Course Two Field
        Space(3) &
' Spacing
        GradeTwoDecimal.ToString("N1").PadLeft(3) &
' Grade Course Two Field
        Space(2) &
' Spacing
        GradePointsTwoDecimal.ToString("N1").PadLeft(4) &
' Grade Points Course Two Field
        Space(4) &
' Spacing & End Of Course Two Info

GradePointAverageDecimal.ToString("N2").PadLeft(5))    ' GPA Field =
(GradePointsOne + GradePointsTwo) / (CreditHoursOne + CreditHoursTwo)

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End Sub

Sub SummaryCalculation()

    ' When run, it divides the total grade points by the total credit
hours.
    AccumOverallGPADecimal = AccumTotalGradePointsDecimal /
AccumTotalCreditHoursInteger

End Sub

Sub SummaryOutput()

    ' Printer Spacing Chart Line(11)
    Console.WriteLine()

    ' Printer Spacing Chart Line(12)
    Console.WriteLine("FINAL TOTALS:")

    ' Printer Spacing Chart Line(13)
    Console.WriteLine(Space(5) & "Number of Students" & Space(13) &
AccumTotalStudentCountInteger.ToString().PadLeft(2))

    ' Printer Spacing Chart Line(14)
    Console.WriteLine()

    ' Printer Spacing Chart Line(15)
    Console.WriteLine(Space(5) & "All Credit Hours" & Space(14) &
AccumTotalCreditHoursInteger.ToString().PadLeft(3))

    ' Printer Spacing Chart Line(16)
    Console.WriteLine(Space(5) & "All Grade Points" & Space(14) &
AccumTotalGradePointsDecimal.ToString("N1").PadLeft(5))

    ' Printer Spacing Chart Line(17)
    Console.WriteLine()

    ' Printer Spacing Chart Line(18)
    Console.WriteLine(Space(5) & "Overall Grade Point Average" &
Space(3) & AccumOverallGPADecimal.ToString("N3").PadLeft(7))

End Sub

Sub CloseFile()

    ' Writes two extra blank lines
    Console.WriteLine()
    Console.WriteLine()

    ' Writes line to prompt user to close program.
    Console.WriteLine(
        Space(10) &
        "Press -ENTER- TO EXIT")

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        Console.ReadLine()  
    End Sub  
End Module
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