

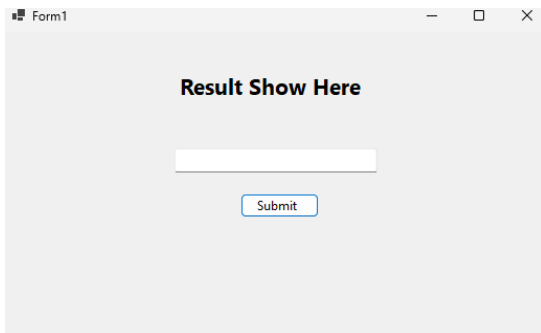
Name:

Software Development Assignment 1 Notes

P1 Explain the purpose of two simple programs and their characteristics including tools and techniques used.

Program 1:

Interface



Commented [AG1]: Good evidence of describing the purpose of the program along with the program tasks

Code

```
Public Class Form1
    Private Sub Button1_Click(sender As Object, e As EventArgs) Handles Button1.Click
        Dim myMark As Integer

        myMark = Val(textInput.Text)

        If myMark >= 80 Then
            resultLabel.Text = "A"
        ElseIf myMark >= 60 And myMark < 80 Then
            resultLabel.Text = "B"
        ElseIf myMark >= 40 And myMark < 60 Then
            resultLabel.Text = "C"
        Else
            resultLabel.Text = "D"
        End If
    End Sub
End Class
```

Purpose of Program 1

Generate the grade based on the mark the students got.

: Describe the interface.

The program contains...buttons, inputs, and labels.

What does the user have to do?

ENTER RESULTS IN THE INPUT BOX AND CLICK SUBMIT.

The user needs to... enter a number to get a result.

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Are there any limits?

PUTTING LETTERS IN GENERATES A RESULT.

What does the program then do?

THE PROGRAM GENERATE A RESULT BASED ON THE MARK AND DISPLAYS THE RESULT ON THE SCREEN

Who might use this program?

TEACHERS AND STUDENTS WOULD FIND THIS HELPFUL

Why might it be a useful program for the user?

THIS IS HELPFUL FOR TEACHERS AS IT RELIEVES STRESS OF MANUALLY LOOKING FOR A MARK TO GIVE

Characteristics of Program 1

Commented [AG2]: Excellent identification of the program characteristics. You described the constructs and techniques

Characteristic	What this means	Does program one has this? Where?
Command Words	A command word is an instruction which usually forms part of a statement that tells the computer system to perform a specific task.	Yes
Sub routines	A subroutine, function or procedure is a portion of code within a program that performs specific tasks either separately or in connection with the main program.	Yes
Basic string handling	String handling is a set of predefined functions that allow programmers to write software programs to manipulate strings.	No
Basic file handling	File handling is a set of predefined functions that allow programmers to write software programs that open, read, write, and close files.	No
Data structures	Data structure is the way in which data is stored, organised, and accessed within a software program.	no
Event Handling	When a user clicks a mouse button (event), the event	Yes

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	handler routine recognises this and performs the defined set of actions associated with the event.	
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M1 Comment on the quality of the program suggesting any improvements and provide a flowchart to show the processing.

Quality of Program 1

Quality	What this means	Score out of 5 (5 being the highest)	Reason for score
Efficiency	When software programs are designed a key measure of the quality will be how well the software performance is in terms of Speed time Memory space Interaction with storage media	5	The calculation of the result is instant
Maintainability	Making a program that can be easily modified in the future by adding: Comments Useful variable names	3	Can be fixable but depends on the issues
Portability	This means that the software can be run on any computer system	3	Would need to be downloaded before use
Reliability	The software is trustworthy. Can the data be trusted? Can calculations be done and display a correct result	2	Can crash if a value is not defined for example 150 as a mark
Robustness	The program should be able to manage errors a controlled way and display warning messages instead of crashing for no reason	2	Is known to crash if a number cannot be processed
Usability	Can the software be used easily and for its intended purpose. Things that do not	5	Is easy to use and users do not need training

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	make this happen could be. Random crashes Lack of instructions Random errors not explaining enough			
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Overall problems

1. NUMBERS OVER 100 NOT DEFINED AND CRASHES.
2. Letters are accepted as results.

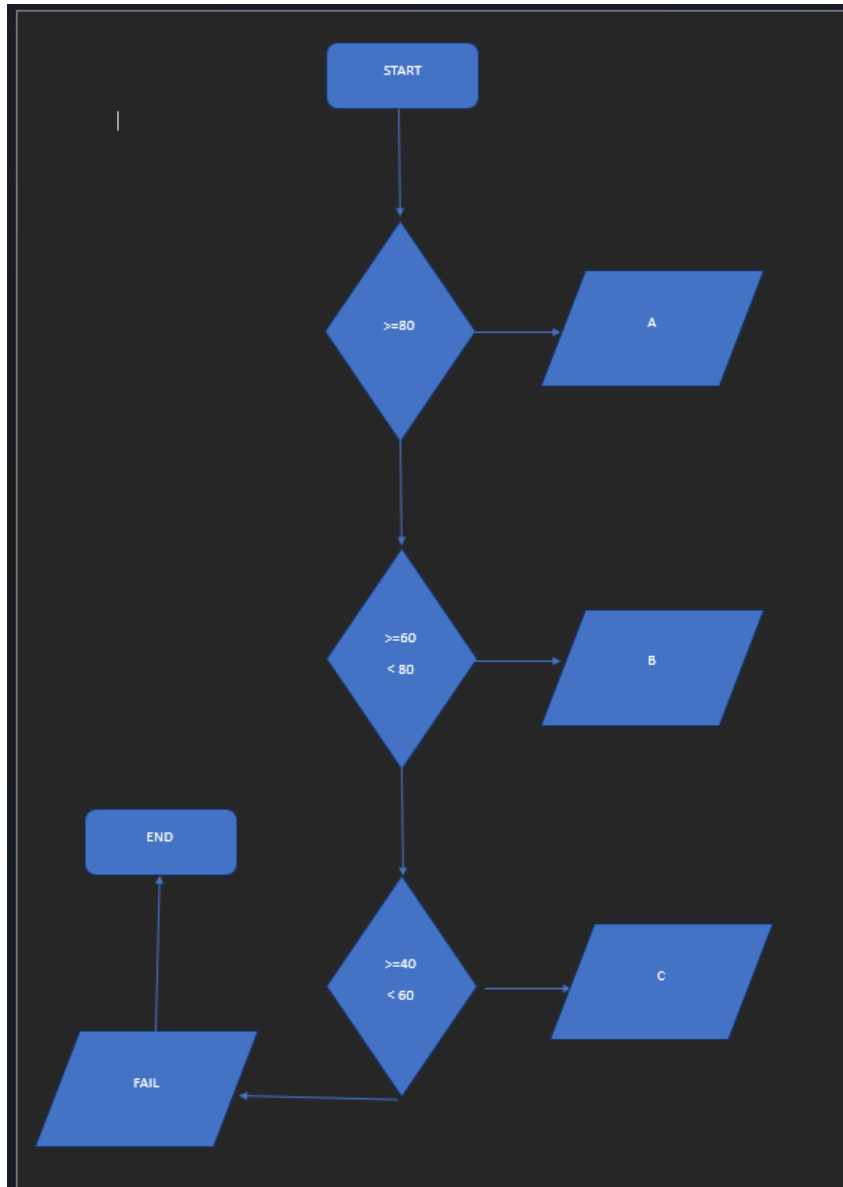
Overall improvements

IF THE NUMBERS OVER 100 GIVE A RESULT OF AN A

Flowchart of improved program one

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D1 Discuss the strengths and weaknesses of the program.

Strengths of the program one

Program 1 has if statements so the user depending on the mark they got. teachers and students benefit from this as the grade is automatically generated. The code can be maintained by anyone as it is very small and easy to read. This program demonstrates efficiency as the teacher does not have to use a grading criterion over and over, this program is also easy to use and requires little to no training to be used and can be used to anyone

Commented [AG3]: Acted on feedback and discussed the strengths and weaknesses in technical details and supporting your answers with specific examples .D1 has been achieved

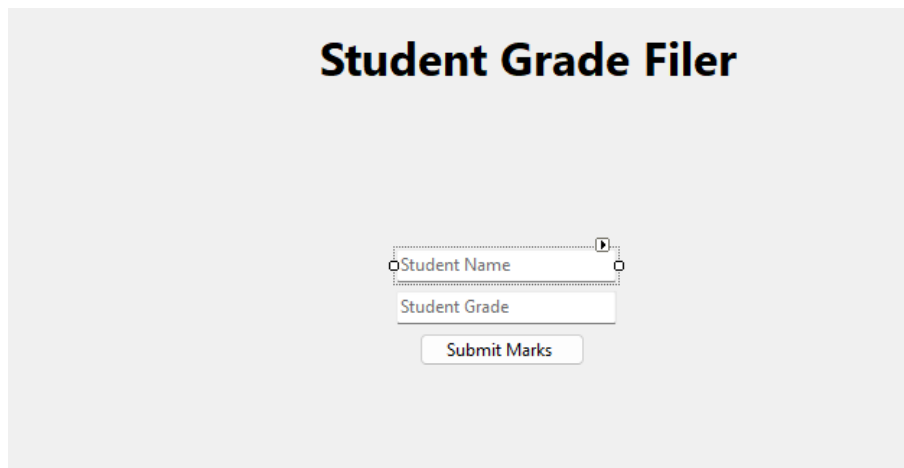
Weaknesses of the program one

Program 1 can't deal with strings. This means that the program will accept the string as a number and output 0. Error handling could be used here to prevent this. This therefore will decrease the users experience and without the validation, this will not work. This also means that the program isn't reliable. This therefore means hard work for it to be maintained.

P1 Explain the purpose of two simple programs and their characteristics including tools and techniques used.

Program 2:

Interface



The screenshot displays a web interface titled "Student Grade Filer" in a large, bold, black font. Below the title, there are two input fields: the first is labeled "Student Name" and the second is labeled "Student Grade". Both fields have a light gray border and a small square icon on the right side. Below these fields is a button labeled "Submit Marks" with a light gray background and a thin black border. The entire interface is set against a light gray background.

Code

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```
Public Class Form1
    Dim grade As String
    Dim studentName As String
    Dim studentGrade As String

    Private Sub Button1_Click(sender As Object, e As EventArgs) Handles Button1.Click
        studentName = TextBox1.Text
        studentGrade = TextBox2.Text
        grade = studentName + " " + studentGrade
        Dim file As System.IO.StreamWriter
        file = My.Computer.FileSystem.OpenTextFileWriter("H:\Grade.txt", True)
        file.WriteLine(grade)
        file.Close()
        TextBox1.Clear()
        TextBox2.Clear()
    End Sub
End Class
```

Purpose of Program 2

The program contains... buttons, labels, and text boxes.

What does the user have to do?

The user needs to... enter their name and grade which is saved into a file.

Are there any limits?

The Grade is a string and needs to be an Integer.

What does the program then do?

The program calculates the results and stores the results inside a file called **Grade.txt**.

Who might use this program?

Students and teachers would possibly use this program, teachers mainly.

Why might it be a useful program for the user?

So, they can copy and paste the result into a spreadsheet.

Commented [AG4]: Good evidence of describing the purpose of the program along with the program tasks

Characteristics of Program 2

Characteristic	What this means	Does program two have this?
Command Words	A command word is an instruction which usually forms part of a statement that tells the computer system to perform a specific task.	Yes
Sub routines	A subroutine, function or procedure is a portion of	Yes

Commented [AG5]: Excellent identification of the program characteristics. You described the constructs and techniques.

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	code within a program that performs specific tasks either separately or in connection with the main program.	
Basic string handling	String handling is a set of predefined functions that allow programmers to write software programs to manipulate strings.	Yes
Basic file handling	File handling is a set of predefined functions that allow programmers to write software programs that open, read, write, and close files.	Yes
Data structures	Data structure is the way in which data is stored, organised, and accessed within a software program.	Yes
Event Handling	When a user clicks a mouse button (event), the event handler routine recognises this and performs the defined set of actions associated with the event.	Yes

M1 Comment on the quality of the program suggesting any improvements and provide a flowchart to show the processing.

Quality of Program 2

Quality	What this means	Score out of 5 (5 being the highest)	Reason for score
Efficiency	When software programs are designed a key measure of the quality will be how well the software performance is in terms of Speed time Memory space Interaction with storage media	5	Puts the scores somewhere convenient

Commented [AG6]: M1 Has been achieved by commenting on the quality of both programs, highlighting what needs to be improved .

Commented [AG7]: Be mindful of punctuation errors.

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Maintainability	Making a program that can be easily modified in the future by adding: Comments Useful variable names	5	There can be new features that can be added
Portability	This means that the software can be run on any computer system	4	Yes, If the correct files are sent correctly
Reliability	The software is trustworthy. Can the data be trusted? Can calculations be done and display a correct result	3	It can break
Robustness	The program should be able to manage errors a controlled way and display warning messages instead of crashing for no reason	3	It can fail at some point
Usability	Can the software be used easily and for its intended purpose. Things that do not make this happen could be. Random crashes Lack of instructions Random errors not explaining enough	5	People can use it as its user interface is easy to use

Overall problems

when a student enters letter, the program accepts the value.

Overall improvements

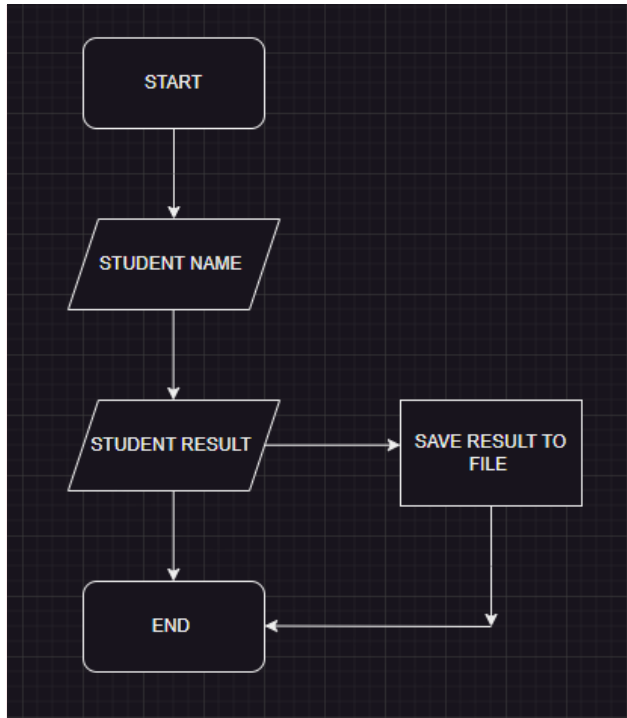
Program does not accept a letter as an integral part of the form.

Flowchart of improved Program 2

Commented [AG8]: Flowchart represents the program tasks but might not be accurate.

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D1 Discuss the strengths and weaknesses of the program.

Strengths of the Program 2

Program 2 stores the result of the calculation in a textfile. This means that the teacher/student can retrieve the file from the textfile. The program is well written and is maintainable. The program is accessible as the result can be retrieved from the file at any time saving time for teachers than students, this also means that the text file can be shared and distributed. When the program re runs, the results are retained in the file and not deleted

Weaknesses of Program 2

In program 2, when entering the grade as a number, the program errors which decreases reliability in using the program. This also means that the user has a bad experience as there is no error handling to tell the user what they have done. This means that fixing and maintaining the program is harder.

Commented [AG9]: Acted on feedback and made a direct link with software quality terms