**Task 1 Analysis and Design – Tom H**

**Introduction:**

The problem:

Large documents and text files can contain data in mass quantities that may be hard and tiresome to search through without the assistance of a program or multiple others. Large files such as this need to be compressed down to a usable scale but accessible enough that all the data is retained and usable.

How I intend to solve the problem:

I aim to create a program that will allow a user to enter in a word that will search through a sentence and pick out the position of said word for the user. I will solve it this way as it’s an easy way of going through the sentence without having the user manually making the user look through the sentence word by word; this method will take longer and may end up with some inaccuracy to the results produced.

Success Criteria:

My success criterion for my program is:

* My program must be made in Visual Basic as it is a reliable programming language and it must include a user friendly design.
* The program must allow the user to enter in a word of their choice which will be used for searching through a sentence also entered by the user.
* The program should recognise if the word is in the sentence or not and if so it should clearly show where about in the sentence it’s numerical position(s) in the sentence.
* My program will need to be able to recognise a word regardless of its case and accept the word.

Testing:

When I am testing my program I will need to test during the development process and after the development process. I will try to stick with my success criteria as much as possible.

**Design:**

Inputs and Outputs:

*Inputs:*

* Word guessed by the user
* Sentence entered by the user

*Outputs:*

* Position(s) of the word
* Is the word in the sentence or not
* If a sentence or word has been entered in or not

User Interface:

\*See sheet of paper!\*

Visual Basic: Visual Basic is my programming language of choice as it will provide me with the tools to great an efficient program and will allow me to make the user interface good looking yet usable to a sufficient degree.

Buttons: Buttons in Visual Basic can be customised so they stand out well and give a clear visual representation on where the user should enter things into the program.

Labels: I have got a few labels to show the results that the user wants to hear from the program and will be unable to accidently edit the results given if they had been in a text box.

Input Boxes: I have chosen to use input boxes as they won’t take up any space on my form as if I was to use textboxes and labels instead. They will also give direct messages to the user without confusion on what they are directed at.

List Box: As list box will allow the user to see the word in full and if a spelling mistake has been made resulting in faulty results.

Menu Strip: A menu strip gives the user access to simple commands to reset, clear and exit the program that are accessible but don’t take lots of space in the Form.

Flow Chart:

\*See sheet of paper!\*

Pseudocode:

*Form load:*

DECLARE *Sentence*

DECLARE *Word*

*Sentence button:*

INPUT *Sentence* = **Input Box**

Has a *Sentence* been entered?

YES = OUTPUT *Sentence* to **lstTask1**

NO = OUTPUT **Error Message**

*Word button:*

INPUT *Word* = **Input Box**

Has a *Word* been entered?

YES = OUTPUT *Word* & *Position* to **lstTask1**

NO = OUTPUT **Error Message**

Validation:

In order to make a program that works as fluently as possible and I simple to use I need to make sure of the validation that may be necessary in my program and goes as follows:

* Has a sentence been entered or not?
* Has a word been entered or not?
* Is the word in the sentence at all?
* Is the word in the sentence multiple times?

Variables:

*Sentence* = String

*UCSentence* = String

*Word* = String

*UCWord* = String

*Words* = Array

*Position* = Integer