SCHOOL OF COMPUTER SCIENCE
COURSEWORK ASSESSMENT PROFORMA

MODULE & LECTURER: Michael Daley

DATE SET: 26th February 2017

SUBMISSION DATE: Friday 17th March 2017 by 11.30pm

SUBMISSION ARRANGEMENTS: Via Learning Central

TITLE: Assembly Language Programming Exercise

This coursework is worth 20% of the total marks available for this module. The penalty for late or non-submission is an award of zero marks. You are reminded of the need to comply with Cardiff University's Student Guide to Academic Integrity. Your work should be submitted using the official Coursework Submission Cover sheet.

INSTRUCTIONS

You have two options both have equal marking of **20%**. SELECT **ONE** of the following:

OPTION 1:
You are required to write an assembler program using loops and procedures to get a temperature value from the user and convert it to either Centigrade or Fahrenheit, depending on the user's selection. (i.e. your program should prompt a user for a value and then for a conversion factor C/F). Your program should have the conversion routines written as a procedure that can be called when you have a value to convert.
In addition you need an output function to print the answers to the screen. You can use either MessageBox or Console output.

Formulas required:

Centigrade to Fahrenheit

$$\left[\frac{9*\text{Centigrade}}{5} \right] + 32$$

Fahrenheit to Centigrade

$$\frac{(\text{Fahrenheit} - 32) \times 5}{9}$$

Hints: Keep it simple, keep your values as 8 bit integer values. Your program will need to use the compare instruction, and call instructions.

OPTION 2:
You will be provided with a piece of text on Learning Central: called Asmtext.asm
Open this file and copy its contents into the **.data** area of your program. You are then required to write the rest of the program to perform the following :

1) Prompt the user to type in a string of characters and then search the text for the string entered. Return the position of the string and print the message "**found"** and its **position** in the text onto the screen either in a MessageBox or to the Console. If not found print **"not found"**. In this context, the string searched can be part of a word.

2) Find the longest word and print the word onto the screen.

3) Count the number of words in the paragraph and print the number to the screen.

You can assume that there is only one space between each word.

SUBMISSION INSTRUCTIONS

All submission should be via Learning Central unless agreed in advance with the Director of Teaching. The current electronic coursework submission policy can be found at:
http://www.cs.cf.ac.uk/currentstudents/ElectronicCourseworkSubmissionPolicy.pdf

You are required to write an 80x86 assembler program, submit a listing of your program and screenshots showing your program output, under various input values.

Description		Type	Name
Cover sheet	**Compulsory**	One PDF (.pdf) file	[student number].pdf
Q1	**Compulsory**	One PDF (.pdf) or Word file (.doc or .docx) Listing of Code and Screen shots	Q1_[student number].pdf/doc/docx

CRITERIA FOR ASSESSMENT

Credit will be awarded against the following criteria.

MARKING:

Program runs and performs correctly and shows understanding of use of procedures and loops. [18-20%]

Program runs and performs but does not use subroutines and loops. [15-18%]

Program runs but not fully working. [10-15%]

Program assembles but does not run. [5-10%]

Program does not assemble. [0-5%]

Feedback on your performance will address each of these criteria.

FURTHER DETAILS

Feedback on your coursework will address the above criteria and will be returned in approximately:

2-3 weeks after submission date

This will be supplemented with oral feedback via….

lectures