



University of the
West of England

MODULAR PROGRAMME

COURSEWORK ASSESSMENT SPECIFICATION

Module Details

Module Code UFCF93-30-1	Run 18SEP/1 AY	Module Title COMPUTER AND NETWORK SYSTEMS
Module Leader Martin Serpell	Module Coordinator	Module Tutors Martin Serpell, Shancang Li, Emmanuel Ogunshile, David Wyatt
Component and Element Number A Test 1		Weighting: (% of the Module's assessment) 22.5%
Element Description		Total Assignment time 24 hours

Dates

Date Issued to Students 21/01/2019	Date to be Returned to Students 14/03/2019
Submission Place Blackboard	Submission Date 28/02/2019
	Submission Time 14:00hrs (GMT)

Deliverables

As listed on the Assignment specification sheet

Module Leader Signature

--

UFCF93-30-1 CNS: Course Work Specification, January 2019

There are two parts to this assignment

- 1) a written report
- 2) complete a program that emulates the Chimera-2016-I microprocessor; students are required to complete this program by implementing the Chimera-2016-I instruction set in C.

Report

Write a report that compares and contrasts white-box and black-box testing that is done during software development. When would you use each of them? Correct referencing of sources is expected. The report should be no longer than two sides of A4 (800 words).

Complete writing a Chimera-2016-I microprocessor emulator

There is a Chimera-2016-I emulator on Blackboard that needs to be completed. The incomplete emulator project has been zipped up and placed in the Assignment 1 subdirectory in the Assignments section of the UFCF93-30-1 module on Blackboard. The basic program is there but code must be added for each of the Chimera-2016-I instructions, some instructions may have already been implemented. The Chimera-2016-I emulator is written in C using Visual Studio. The entire project subdirectory has been zipped up and placed on Blackboard; the directory should be unzipped and the code completed. There are files on Blackboard that explain the Chimera-2016-I instructions (Assignment1/ Chimera-2016-I Instruction Set subdirectory). A server program that can be used to provide a feedback mark on your program prior to submission is provided (Assignment 1 subdirectory).

Deliverables

The report and entire project is to be placed into a .zip file and uploaded to Blackboard.

Marking Scheme

a) Report

This report should explain how code is shown to be correct. Correct research and citations are to be used. Write a report that compares and contrasts white-box and black-box testing that is done during software development. Marks will be given for:

- Understanding the subject
- References (must be peer reviewed journals)
- Citations
- Grammar and spelling
- Structure (sensible headings and sub-headings)
- Correct terminology
- 3rd Person
- Flows nicely

Allocation of marks: **0 to 25 marks**

b) Source Code in C

- Comments focused on the problem not the instructions
- Comments not over long making them un-maintainable
- Program banner : author name & date, revision date, functional description, user advice
- Function banner comments, functional description, parameter list, warnings

- Clear code structure expressing three tasks with operational sequences (possibly using finite state implementation through SWITCH/CASE or table)
- Functions use parameters effectively

Allocation of marks: **0 to 15 marks**

c) Program Testing

The assignment program will be tested against a number of acceptance tests and marks allocated according to how they perform. Each of these tests checks to see if the instructions in the test have been implemented correctly. Each test is equally weighted, however as instructions are implemented the student may not see their score rise immediately as each instruction is worth approximately one quarter of a mark. The emulator will be required to have set the registers and flags to the correct values.

The acceptance tests consist of short Chimera-2016-I assembler programs. These assembler programs have already been turned into machine code and exist as .hex files. These .hex files can be loaded into the Chimera-2016-I assembler and executed. The .asm and .hex files can be found in the Assignment 1/Testing subdirectory. Although the emulator can run these .hex files the student will find it easier to simply run the server program provided to monitor their progress.

Allocation of marks: **0 to 60 marks**