Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Computer Science and Technology Degree Program
3rd Year 2nd Semester Examination - August / September 2014

Uva Wellassa University

CST 321-3 System Level Programming

Time allocation: Two (02) Hours

- Open book – Internet facility will not be provided.
- Add your examination number and name, as comments for each and every source files.
- Upload a single compressed file to the CMS. You must rename it as your examination number.

PART - B

1.

a. Write a program to calculate the length of a String variable using C programming language. You must use pointers and dynamic memory allocation concepts in your answer.

b. Compare the sizes of two Strings given by the user using your own function implemented in **part 1.a (mark will be deducted if existing function is used to find the length).** Select the sentence which is having the maximum length and identify the number of words included in it. Build necessary header files for this task.

c. Write a Makefile to compile all the source codes you created in **part 1.a** and **part 1.b** with the following features.

i. Debugging feature for all the executable files.
ii. Use macros to specify the compiler type, libraries, include files, object files, source files and header files.
iii. Create two executable files separately for **part 1.a** and **part 1.b**.
iv. Clean all the temporary files and object files.
v. Create a compressed file final.tar by including your Makefile, source files and header files and executable files.

(30 mark)

2.

a. Write a shell script to store employee details in ABC company. Firstly, the operator needs to enter employee ID for each employee (ex: 1,2 etc.) and then he enters the details based on the following menu.

1. Full Name
2. NIC number
3. Address
4. Continue
5. Exit

Option 1, 2 and 3 above are used to get Full name, NIC number and address respectively or one employee. If the operator selects option 4; the system should return back to the initial stage to request the next employee ID from the user. Option 5 allows the operator to exit from the system.

b. All employee details need to be stored in a file called "employeeinfo.log" with the following format.

##########################
 # This is YourName's log file
##########################

The script was run by _____ on the ____ at _____.
The operating system: _____
The working directory: _____
Shell name : _____

Details of the employee ID _____
……
……
……

Details of the employee ID _____
……
……
……

(30 mark)