UNIVERSITY OF KELANIYA
SOFTWARE ENGINEERING TEACHING UNIT
ACADEMIC YEAR 2016/2017

SENG 21213: Computer Architecture and Operating Systems

Semester I **Assignment (100 Marks)** **Due Date:02-07-2018**

This programming assignment is to design and implement a solution in Assembly language with the MIPS instruction set. You may use references including books, articles, web sources and the like. Unless the usage of these sources is explained and referenced where appropriate, it is considered as plagiarism. If found to be plagiarized, marks will not be given to the assessment.

Task

The "XYZ GOODS" Pvt. Ltd. manufactures spices for the export market. A sample production of machine A for Week 1 and Week 2 are shown in the following table 1 and 2 respectively. The production ranges between 50 and 300 per day.

Table 1-Machine A Production Week 1

Day	1 (MON)	2 (TUE)	3 (WED)	4 (THU)	5 (FRI)	6 (SAT)	7 (SUN)
Array *index*	0	1	2	3	4	5	6
Production	50	60	150	100	190	240	155

Table 2-Machine A Production Week 2

Day	1 (MON)	2 (TUE)	3 (WED)	4 (THU)	5 (FRI)	6 (SAT)	7 (SUN)
Array *index*	0	1	2	3	4	5	6
Production	80	65	115	170	145	95	103

(a) Write a function using assembly statements called InputProduction(). The method should ask the user to insert production of each day (Monday to Sunday) and fill the array. The values are entered through the keyboard.

(b) Write a function using assembly statements called CompareProduction(). The method should find and print the highest and lowest production of each day by comparing week 1 and week 2 production for 7 days.

(c) Write a function using assembly statements called DisplayProduction() to print the production of a particular day.

(d) Implement the main section of the program to do the followings:

(1) Insert machine A week 1 production details to the week1_production array using the function InputProduction().

(2) Insert machine A week 2 production details to the week2_production array using the function InputProduction().

(3) Compare week 1 and week 2 production using the function CompareProduction().

(4) Display production of week 1 using the function DisplayProduction().

Submission Guidelines:

You are required to hand in a printed report on or before the submission date. It should include solution design and implementation. You also should use coding standards with sufficient comments. To score marks for the assignment you are required to face a VIVA session during the practical session.