Vavuniya Campus of the University of Jaffna

First Examination in Information and Communication Technology - 2018

Second Semester - April / May 2020

ICT1262 Practical for Operating Systems

Answer all Questions

Time : Three hours

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1. A Fibonacci sequence is composed of elements generated by adding the two previous elements. The simplest Fibonacci sequence starts with 0,1 and precedes as follows:

$$0, 1, 2, 3, 5, 8, 13, ...$$

Write a shell script to find the n^{th} (n is always greater than 2) Fibonacci number where n is a positive integer. The Fibonacci number is generated using the following equation.

$$X_n = X_{n-1} + X_{n-2}$$

where, $X_0 = 0$ and $X_1 = 1$. [100%]

2. Write a C programme to create the process tree as shown in Figure 1. The initial value of the variable *counter* in the parent process(A) is 0. The child processes (B and C) update the value of the variable *counter* by 5.

[*Continued on the next page*]

The grandchild processes (G,D and E) update the value of the variable *counter* by 10 and the process F update the value of variable *counter* by 20. Programme must display the value of the variable *counter*, process id and its parent process id whenever the value of the variable *counter* is changed.

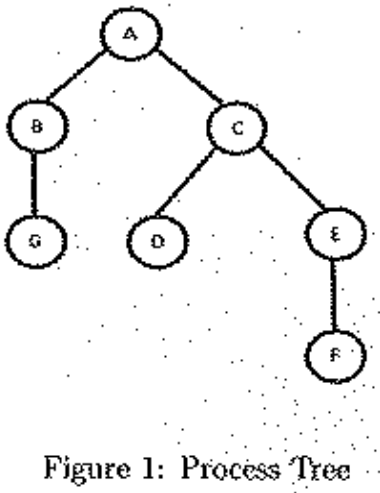

Figure 1: Process Tree

[100%]