Spring 2018

CMPE 312 - Operating Systems

Final Project

Communication of Processes and Synchronization Problems

Deadline: 10 May 2018 22:00

Project

There are several algorithms which are able to solve the synchronization problem between operating system's processes, in order to establish a stable communication procedure. The most common and widely discussed and used are The Dining Philosophers Problem, The Cigarette Smoker's Problem and The Sleeping Barber Problem.

In this project, you are required to select one of the above mentioned algorithms and prepare a technical report and create a programming application using C.

Tasks

I. Explain the algorithm that you have chosen in detail with your own words, give information about its history, discuss about its main advantages comparing with other algorithms and the problem that the algorithm deals with, elaborate the algorithm's solution to the problem, etc.

II. Create a C programming application which attempts to solve the issue that you have discussed previously. The program must be able to simulate the solution to the user and the user should be able to track of the solution step-by-step.

III. Explain your coding work with comments within your program and discuss about your techniques and methods during implementation in your report, how you approached the problem, how you made an efficient solution to the problem or in what ways it misses the solution, in case of being an incomplete solution to the problem, etc.

Important Notes:

Your report must be 2-3 pages long at least with clear and understandable English. You must submit your report as PDF file and your code as C program. You can work as group of two people. You have to demonstrate your work as group before the deadline. ***Plagiarism is strictly prohibited. (Your submitted work will be checked with your peers and internet resources with a plagiarism tool.)***

Grading:

Answering questions : 40 points

Proper documentation for your code, compactness of the program, clarity of the program and commenting of the program : 20 points

Development of an appropriate program as you explain in your report: 40 points