CMPE 312 - Operating Systems

Project
Deadline: 28.05.2021 23.59

RULES

- Codes without documentation (comments) will not be evaluated.
- Report and code are both required. In case of missing one, the project will not be evaluated.
- The reports which have similarity score **above than 30%** will not be evaluated.
- Plagiarism is strictly prohibited. If it is detected either in codes or reports, involved students will get zero.

SUBMISSION

- Submit your reports to related slot (Report Submission).
  Submit your codes to related slot (Code Submission).
- Late submissions will not be accepted. Submission system will be closed after deadline. Submissions via e-mail will not be accepted.

QUESTION

For the questions, students are responsible with a synchronization problem depending on last digit of their Student ID as given table below.

Last Digit of Student ID	**Problem**
0,1,2,3	The Sleeping Barber
4,5,6	The Santa Claus
7,8,9	The Cigarette Smokers

For example, the one whose student ID is 114200066 will answer the following questions with respect to *The Santa Claus*[*] problem.

1. (60 Point) Prepare a report about the synchronization problem you are responsible with.
2. (40 Point) Write an C implementation of the problem and solution of the synchronization problem you are responsible with.

Bonus (20 point) Find and summarize the paper (or book chapter) that the problem is introduced for the first time.

Note: Ensure that your codes are fully documented, using comments.

[*] John Trono's Santa Claus Problem

REPORT

There is no page restriction for reports. However, you are asked to convince that you fully understand the subject. Therefore, less pages without detailed descriptions can be penalized. Recommended page length is 5.

Write your reports by using the below sections at least. You can add more sections if you need.

- **Introduction**

  Describe the problem. After, provide detailed background knowledge about it, e.g. history of the problem and solutions, example use cases etc.

- **Methodology**

  Explain one of the possible solutions to the problem with pseudo-codes in details.

- **Implementation**

  Demonstrate your code with a simulation. Explain step-by-step which functions are invoked. Do not write the whole code, but use only function names.

- **Conclusion**

  Summarize the report. Discuss the efficiency of the solution and your implementation.