Due Date: 19.11.2019,23:55

CENG 313 – Operating Systems
Homework #3

In this homework you are expected to cover two concepts of OS given below;

- Processes
- Inter Process Communications (IPC) – (one way pipe)

Implement a C program that is explained below. Your main program should find how many different products in the file **market.txt** and it should give random price for each product. Then it should save these products and their prices to **price.txt.**

After that, your program should create **seven child processes** that can perform several tasks listed below.

- Find how many different products in the file **price.txt** and show products and prices.
- Find how many times a given product is sold. (**Note**: Product should be taken from user in parent process.)
- Show the transaction(s) of specific customer and calculate total price that is paid by the customer. (**Note**: Customer id should be taken from user in parent process.)
- Find the customer who purchase most items.
- Show most profitable day and its price.

Parent process should send the tasks randomly to the child processes via pipes.

BONUS: If you implement two-way pipes and instead of printing the result of task in the child process, if you can return them to the parent and print them there, you will get extra points (20 pts).

ASSIGNMENT RULES!

- Cheating will **NOT** be tolerated!
- For any detected cheating will be **graded as 0**.
- Late Submissions will not be allowed.

GRADE REDUCTIONS

Since you are Junior students you are expected that you are aware of; error handlings, controls, software design etc. This lecture should be taken seriously and will take a crucial part in your work lives. Please code your programs wisely. Possible grade reductions,

- Lack of comment usage!
- Missing controls!
- No error handling!
- Unused/dead codes!
- Naming conventions!

Please do not discuss with us why your grades decreased just because you have done the programming sins listed above!

NOTE: Do not ask from us about the possible errors that could occur. From this lecture and labs, you are expected to be aware of the possible errors.