Alexandria University **Faculty of Engineering** **Comp. & Comm. Engineering** **CC273: Data Structures I** **Spring 2019**		جامعة الاسكندرية كلية الهندسة برنامج هندسة الحاسب والاتصالات مادة هياكل البيانات **2019 ربيع**

Lab 5
Priority Queues

1   Problem Statement

In this assignment, you are required to implement a banking system based on priority queue.
You will be given a file containing balance and name for each customer.
You are required to implement priority queue using max heap so that the customer with max balance has higher priority than others.You are also required to handle the case when multiple customers have the same **priority** (balance) **so max heap should retrieve customers as FIFO**.

2   Definitions

Suppose there are N customers in a queue to be served, and customer has its own priority. The customer with maximum priority will get served first than others.
We can think of many ways to implement the priority queue but the most effiecient way is to use max heaps to get the element with higher priority in O(log n) time
So you are required to implement Priority Queue based on the structure of max heap.

3   Application

- You will be given passed the path of the file containing balance and name for each customer.
- You should output the customer names in decreasing order according to their balance,

4   Deliverables

- Make sure you follow the course academic integrity policy.
- Your source code (in one C file), which should be well commented.