PES University
Department of Computer Science and Engineering
Data Structures and its Applications Lab
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Lab 7 - Queue using linked lists

Write a program to implement a Queue using Linked list and perform the following operations:
1. Enqueue element at the rear of the queue
2. Dequeue element from the front of the queue
3. Peek the element at the front of the queue

Along with the above operations, write a function to solve the below mentioned problem -

There is a queue forming at a bank. Each person in the queue has a predefined amount of time that he/she requires for the service. Each person also has a unique ID. Assuming that at t = 0, the first person in the queue starts getting serviced, find out the person who is getting serviced at a given arbitrary time ‘t’.

Input Format:
Every new line has one of the following operation codes and any data needed for the operation (For ex: The element that needs to be inserted):

0 x y - Enqueue element 'x', ‘y’ at the back of the queue. ‘x’ represents ID and ‘y’ the time taken for that person.
1 - Dequeue element at the front of the queue. No operation if queue is empty.
2 - Peek the element at the front. Print "Empty Queue" in case of an empty queue.
3 x - Solve the ‘customer-queue bank’ problem described above. ‘x’ is the arbitrary time t.

Output Format:
If the operation code is 2, print the ID and the service time of the person in the front. If the queue is empty, just print “Empty Queue”.
If the operation code is 3, print the ID of the person getting serviced. If everyone has been serviced and the queue is empty, print “Empty Queue”.