Assignment 6:
Event Driven Simulation solution

- Soham Gaikwad, 2018CS10394

Implementation:
1. LinkedList.h & LinkedList.c – Linked list data structure. Used for Teller queues.
2. Queue.h & Queue.c – Derived from LinkedList with functions to enqueue & dequeue. Used for Teller queues.
3. PriorityQueue.h & PriorityQueue.c – Priority queue data structure. Used for Event queue.
4. Customer.h & Customer.c – Defines the customer entity & associated functions.
5. Teller.h & Teller.c – Defines the teller entity and associated functions.
6. Event.h & Event.h – Defines the event entity and associated functions.
7. qSim.c – The main file which runs two simulations for single teller queue and multiple teller queue by dequeuing events from the event_queue untill it is empty. Finally generates statistics and plots.

To run the program:
Use make to compile & generate the binaries.
Then execute using: ./bin/qSim #customers #tellers simulationTime averageServiceTime

Conclusions:
In general, single teller queue seems to be more efficient which may be a result of lesser idle times of teller as there is a larger chance of teller finding an empty queue in multiple teller queue. But in some cases, usually when number of customer/teller are less, then multiple teller queue resulted in lower avg. Time to serve customer.