

## **CS 3220-AM,BM,CM,DM: Operating Systems**

### **Assignment 2**

Date Assigned: Nov 23<sup>rd</sup>, 2021

Date Due: Nov 26<sup>th</sup>, 2021

(Total Score: 34 points)

(Questions: 2)

#### **Instructions:**

Labels of all figures and tables are mentioned below the figures and tables respectively. Show all your working where required. Provide all numerical results with two digits of precision only.

**Q 1.** In a real-world application of an online Airline Ticketing Reservation System that processes all customers' requests, provide names and quantities of all possible threads that might be needed in a process, where a process is associated with a single user using the system. **(18 points)**

**Q 2.** In this problem you are to compare reading a file using a single-threaded server and a multi-threaded server. It takes 30 msec to get a request for work, dispatch it, and do the rest of the necessary processing, assuming that the data needed are in the block cache. If a disk operation is needed, as is the case half of the time, an additional 50 msec is required, during which time the thread sleeps. How many requests/sec can the server handle:

- a) if it is single-threaded? **(8 points)**
- b) if it is multi-threaded? **(8 points)**