AMS 553 Final Project Proposal

**Topic:**

Simulation of a Restaurant’s Seating Policy

**Description:**

Stony Brook Buffet restaurant will open soon. The manager needs to decide the seating policy so that the daily revenue will be maximized. There are only two types of tables allowed, two-seat table and four-seat table. K tables are four-seat and the rest are two-seat. There are total 40-seat space in the restaurant.

Customers come to the restaurant in groups randomly. The group can include 1, 2, 3 or 4 customers all with probability 1/4 . Two groups of customers never share a table. Groups containing 1 or 2 customers will take a two-seat table with priority. If there is no empty two-seat table for them, a four-seat table will be given then if there is any. Otherwise they have to wait. Groups containing 3 or 4 customers can only take a four-seat table. If there is no empty table, customers have to wait. After 15 minutes waiting in a line, customers will always decide to leave the restaurant. The eating time of customers is random.

Stony Brook Buffet opens from 11AM to 9PM, and the cost is $20 each person.

With such policy and conditions we will have our simulation modeling program to simulate such process and give the value of K which could maximize the revenue.

**Team Members:**

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**Effort Distribution:**

Data Collection -- Junao Wang

Program Coding -- Linkun Chen, Saiyang Qi, and Yunke Tian

Presentation & Final Report -- Chenjun Feng, and Zhixiu Liang