Problem Statement:

Nowadays, the rent and cost of the operating a deli is high, especially family-owned deli. The efficiency of the operation process. The more customers come to eat, there will be more net income and higher profit.

Therefore we should prevent the occurrence of an empty table so as to increase the number of the deal. To maximize the profit and make good use of the tables of the deli, a systematic way should be introduced to manage the tables. More and more restaurants are using small table management systems to achieve the highest efficiency. Usually, these systems are able to handle occupancy, reservation and billing of tables.

Problem Setting:

The system will have a few main functions to tackle the above problems and increase the efficiency of the operation of the restaurant.

First, the ability to check the the availability of tables. The system should be able to check which tables are occupied and which are able to be occupied.

Second, the system should be able to occupy a table. When the table is available, the system can inform the customers automatically to go in the deli and eat to maximise the use of each table when the table is free.

Third, The system can release a table when the customers finish their meal and leave. This function can return the data of tables available to function one to check table availability. So that function two can be executed to a table.

Fourth, the system should be able to suggest the best size of the table, given the number of a group of customers. The suggestion should help the deli to achieve the highest efficiency in terms of the use of tables by fitting the number of customers to a suitable size of the table, which is the minimal enough seats. To avoid the problems of resource mismatch, for example, a big table is occupied by just a few customers.

Fifth, Waiters should be notified by the system for the tables occupied for too long.

Lastly, The system should also allow the changes in the number and the sizes of tables due to the seasonal changes of the customer base.

Assumption

- 1Default number of tables:15

-Default distribution of size of tables: 6 seat table:3

4 seat table:6

2 seat table:4

1 seat table:2

-no table are reserved

-normal occupied time: 1.5 hours

-“too long” occupied time: 2 hours