

The Froghead Grill Staffing Analysis

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CAVS Extension

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Overview

Description

The Froghead Grill in Clinton, MS is a restaurant that specializes in continental cuisine. This project will focus on the simulation and analysis of the restaurant. Three scenarios will be analyzed which evaluate deployment alternatives for dining staff.

Objectives

- Determine the most effective manner of deploying dining staff.
- Performance measures of dining staff including serving time, cleaning time and idle time.
- Performance measures of customers including time-in-system and time waiting for table.

General Data

- Period of Study: 11am – 2pm (3 hrs)
- Maximum number of customers during a lunch period is approximately 200
- Time to place order is between 2-3 min per party
- Maximum of 5 orders can be prepared in the kitchen at the same time
- Time for a single customer party to eat is 15-20 min
 - Add 3 minutes for each additional member of the party
- Cleaning table takes 2 min

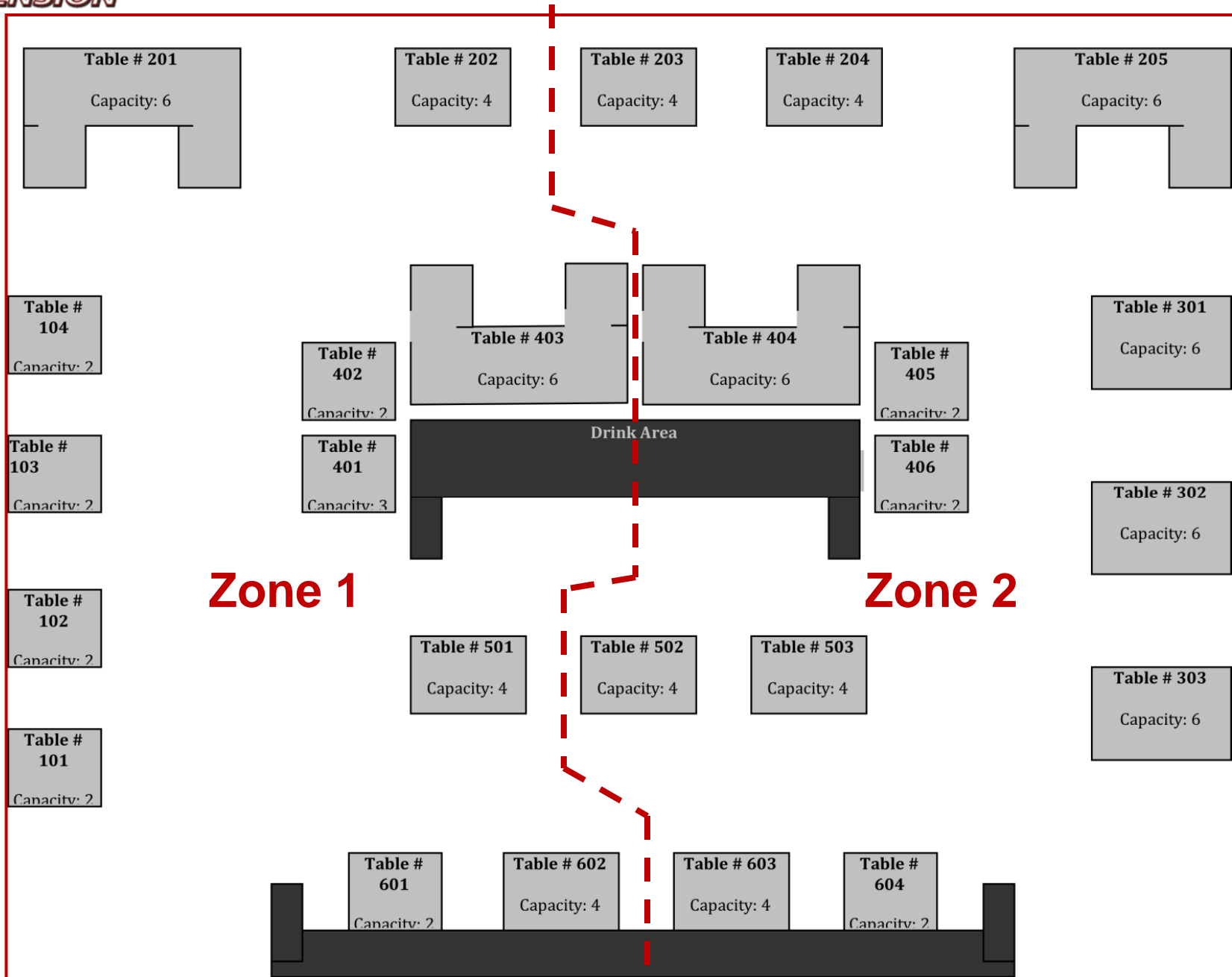
General Data

Order Process Time					
Party Size	1	2	3	4	5
Min	4	5	6	7	8
Max	6	7	8	9	10

Party Size Distribution					
Party Size	1	2	3	4	5
%	10%	25%	30%	25%	10%
Shirt Color	Red	Green	Blue	Brown	Black

Simulation Model

- The simulation will model 3 scenarios which evaluate deployment alternatives for dining staff:
 - Scenario 1
 - Server 1 and server 2 are interchangeable and when a task is issued, the first runner available performs the task.
 - Scenario 2
 - Server 1 assigned to serving
 - Server 2 assigned to cleaning
 - Scenario 3
 - Server 1 assigned to zone 1
 - Server 2 assigned to zone 2



Simulation Model



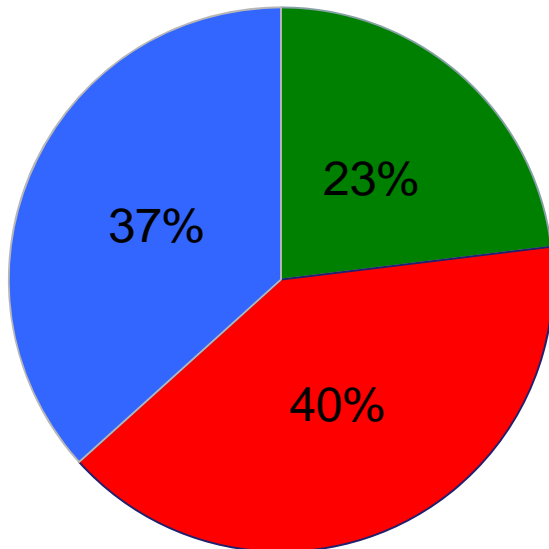
Results: Scenario 1

- Description
 - Server 1 and server 2 are interchangeable and when a task is issued, the first runner available performs the task.
- Results
 - Daily avg. # of parties: 66
 - Daily avg. # of customers: 197
 - Avg. time-in-system: 36.58 min
 - Avg. # of parties that waited for table: 3.05
 - Avg. Table Wait Time: 6 min

Results: Scenario 1

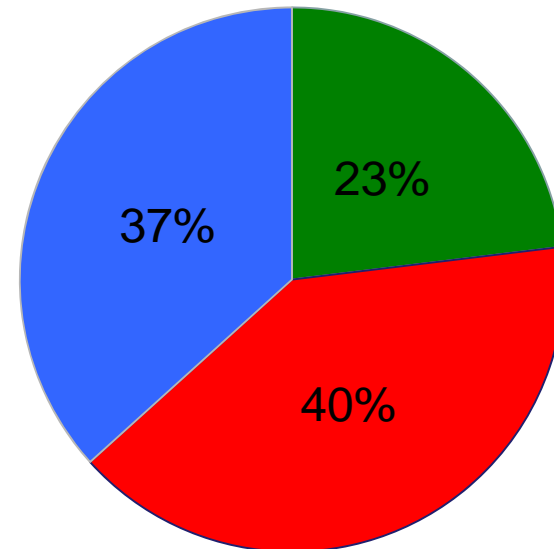
Server 1 States

■ Serving ■ Idle ■ Cleaning



Server 2 States

■ Serving ■ Idle ■ Cleaning



- Analysis
 - Each server spends 40% of their time idle

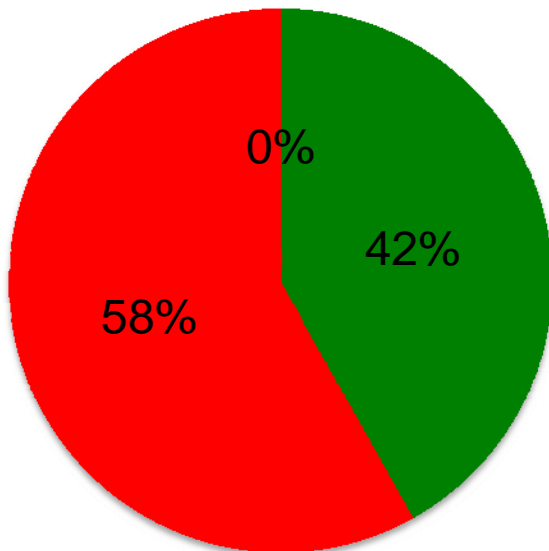
Results: Scenario 2

- Description
 - Server 1 cleans tables, while server 2 serves food
- Results
 - Daily avg. # of parties: 66
 - Daily avg. # of customers: 197
 - Avg. time in system: 36.52 min
 - Daily # of parties that waited for table: 4.68
 - Avg. Table Wait Time: 7.3 min
- Analysis
 - Compared to scenario 1, 1.5 more parties wait for a table
 - Compared to scenario 1, Average wait time increases by more than 1 min

Results: Scenario 2

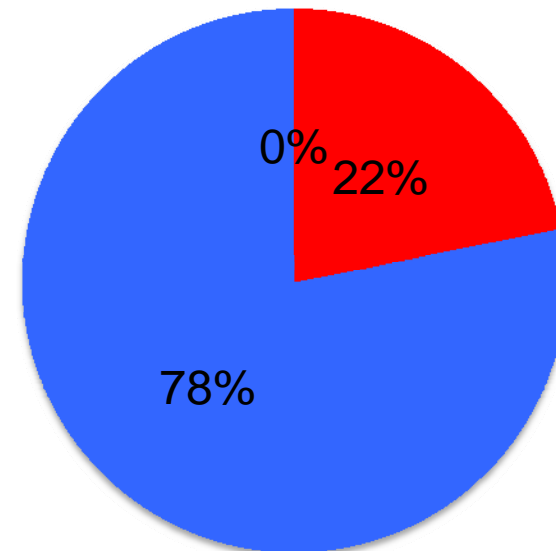
Server 1 States

■ Serving ■ Idle ■ Cleaning



Server 2 States

■ Serving ■ Idle ■ Cleaning



- Analysis
 - Server has opportunity to perform additional tasks such as refilling drinks or taking customers orders.

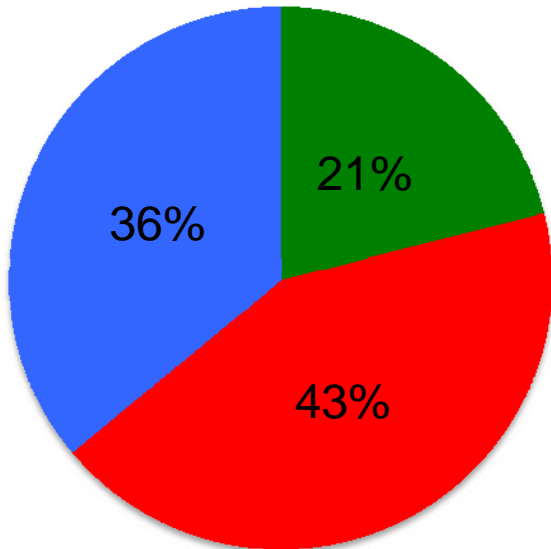
Results: Scenario 3

- Description
 - Server 1 is assigned to serve and clean tables in zone 1, server 2 is assigned to zone 2
- Results
 - Daily avg. # of parties: 66
 - Daily avg. # of customers: 197
 - Avg. time in system: 36.66 min
 - Daily # of parties that waited for table: 3.43
 - Avg. Table Wait Time: 6.6 min
- Analysis
 - 0.38 more parties wait for a table than in scenario 1 and 1.25 less parties wait for a table than in scenario 2.
 - 0.6 min more time spent waiting for a table than in scenario 1 and 0.7 min less time spent waiting for a table than in scenario 2.

Results: Scenario 3

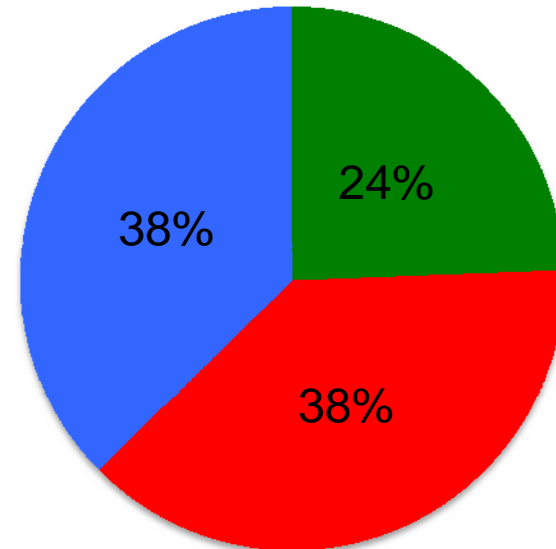
Server 1 States

■ Serving ■ Idle ■ Cleaning



Server 2 States

■ Serving ■ Idle ■ Cleaning



- Analysis

- Zone 2 has more large tables than zone 1, so server 2 has more customers to tend to.
- Zone imbalance is probable given customer freedom to seat themselves.

Key Analysis Points

- Scenario 1 performs the best under the given conditions.
- Zone imbalance issues could be analyzed and alternative zone configurations could make scenario 3 better.

Questions

Unregistered HyperCam 2

