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CSC 148  
HW3

1.

Del Taco

2200 Arden Way, Sacramento, CA 95825

Sample collected on 10/19/2019.

This establishment is a medium-sized Mexican fast food restaurant with a drive-thru.



The number of service centers  $n_{\text{Steps}} = 2$  because O is done at one step, and P & G at the same station next step.

3.

sis = 5 minutes

216 minutes / 5 minutes = 43.2 sis intervals

100 Cj arrivals / 43.2 sis intervals = 2.315 arrivals/interval (sample mean  $\hat{x}$ )

2.315 arrivals/interval / 300 seconds/interval = 0.0077 customers/sec

4.

Little's Law check

A stable system satisfies  $L = \lambda * w$

$L^{\wedge} = \text{avg}(\text{the value of } L \text{ as each } c \text{ arrives}) / (\text{total number of } c)$   
 $= (206/100) = \mathbf{2.06}$

$\lambda^{\wedge} = (\text{number of } c \text{ that arrived}) / (\text{observation duration})$   
 $= 100 \text{ customers} / 12983 \text{ seconds} = 0.0077 \text{ customers/sec}$

$w^{\wedge} = (\text{total time spent in } S \text{ by all } c) / (\text{total number of } c)$   
 $= 29575 \text{ seconds} / 100 = 295.75$

$\lambda^{\wedge} * w^{\wedge} = \mathbf{2.278}$

$L^{\wedge} / (\lambda^{\wedge} * w^{\wedge}) = \mathbf{0.904}$