



Cashier vs. Machine

Simulation of Cashier and Self-Checkout Machine
Queues in a Supermarket



Cashier



SelfCheckout 1



SelfCheckout 2

1) Adjust Animation Speed

Average Time Spent in Supermarket: 0.000
Average Time in Cashier Queue: 0.000
Average Time in SelfCheckout Queue: 0.000
Average Service Time for Cashier: 0.000
Average Service time for SelfCheckout 1: 0.000
Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW



FAST

ProbArrival: 0.000



1.000

ProbDepartureCashier: 0.000



0.400

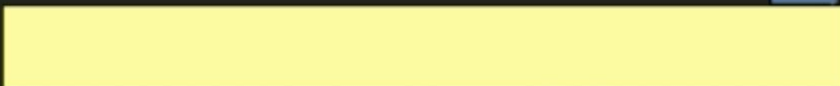
ProbDepartureSelfCheckout: 0.400



1.000



Cashier



SelfCheckout 1



SelfCheckout 2

2) Set ProbArrival of Customers

Average Time Spent in Supermarket: 0.000

Average Time in Cashier Queue: 0.000

Average Time in SelfCheckout Queue: 0.000

Average Service Time for Cashier: 0.000

Average Service time for SelfCheckout 1: 0.000

Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW



FAST

ProbArrival: 0.000

0.376



1.000

ProbDepartureCashier: 0.000

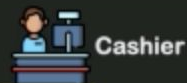


0.400

ProbDepartureSelfCheckout: 0.400



1.000



3) Set ProbDeparture of Cashier and SelfCheckout

Average Time Spent in Supermarket: 0.000
Average Time in Cashier Queue: 0.000
Average Time in SelfCheckout Queue: 0.000
Average Service Time for Cashier: 0.000
Average Service time for SelfCheckout 1: 0.000
Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW

FAST

ProbArrival: 0.000

0.376

1.000

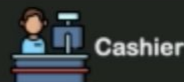
ProbDepartureCashier: 0.000

0.267

0.400

ProbDepartureSelfCheckout: 0.400

1.000



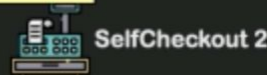
Cashier

probTypeA: 0.4
(prob of customers with basket)



SelfCheckout 1

probQueue2: 0.7
(prob that customers with basket goes to self checkout queue)



SelfCheckout 2

Press SCREEN to

START SIMULATION!!

Average Time Spent in Supermarket: 0.000
Average Time in Cashier Queue: 0.000
Average Time in SelfCheckout Queue: 0.000
Average Service Time for Cashier: 0.000
Average Service time for SelfCheckout 1: 0.000
Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW



FAST

ProbArrival: 0.000

0.376

1.000

ProbDepartureCashier: 0.000

0.271

0.400

0.874

ProbDepartureSelfCheckout: 0.400

1.000



Cashier



SelfCheckout 1



SelfCheckout 2

Observe Average Time
in both queues

Statistics

Average Time Spent in Supermarket: 24.800

Average Time in Cashier Queue: 17.250

Average Time in SelfCheckout Queue: 16.000

Average Service Time for Cashier: 3.750

Average Service time for SelfCheckout 1: 4.000

Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW



FAST

ProbArrival: 0.000

0.376

1.000

ProbDepartureCashier: 0.000

0.271

0.400

0.874

ProbDepartureSelfCheckout: 0.400

1.000



Observe Service Time for
the different servers

Statistics

Average Time Spent in Supermarket: 23.714
Average Time in Cashier Queue: 16.667
Average Time in SelfCheckout Queue: 16.000
Average Service Time for Cashier: 4.167
Average Service time for SelfCheckout 1: 4.000
Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW



FAST

ProbArrival: 0.000

0.376

1.000

ProbDepartureCashier: 0.000

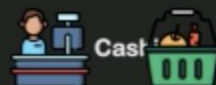
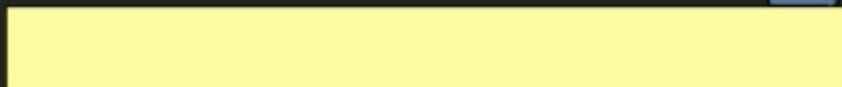
0.271

0.400

0.874

ProbDepartureSelfCheckout: 0.400

1.000



Cash



SelfCheckout 1



SelfCheckout 2



Download Statistics to CSV

Statistics

Average Time Spent in Supermarket: 20.833
Average Time in Cashier Queue: 15.667
Average Time in SelfCheckout Queue: 15.000
Average Service Time for Cashier: 4.333
Average Service time for SelfCheckout 1: 2.000
Average Service time for SelfCheckout 2: 2.000

Download CSV

Animation Speed: SLOW



FAST

ProbArrival: 0.000

0.262

1.000

ProbDepartureCashier: 0.000

0.106

0.400

ProbDepartureSelfCheckout: 0.400

0.932

1.000



Try the simulation with
different probability values!!

By using the interactive
slider bars

Average Time in SelfCheckout Queue: 0.000
Average Service Time for Cashier: 2.000
Average Service time for SelfCheckout 1: 0.000
Average Service time for SelfCheckout 2: 0.000

Download CSV

Animation Speed: SLOW

FAST

ProbArrival: 0.000

0.376

1.000

ProbDepartureCashier: 0.000

0.271

0.400

ProbDepartureSelfCheckout: 0.400

0.874

1.000