Queueing Theory

Optimising your weekly shop

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What is a Queue?
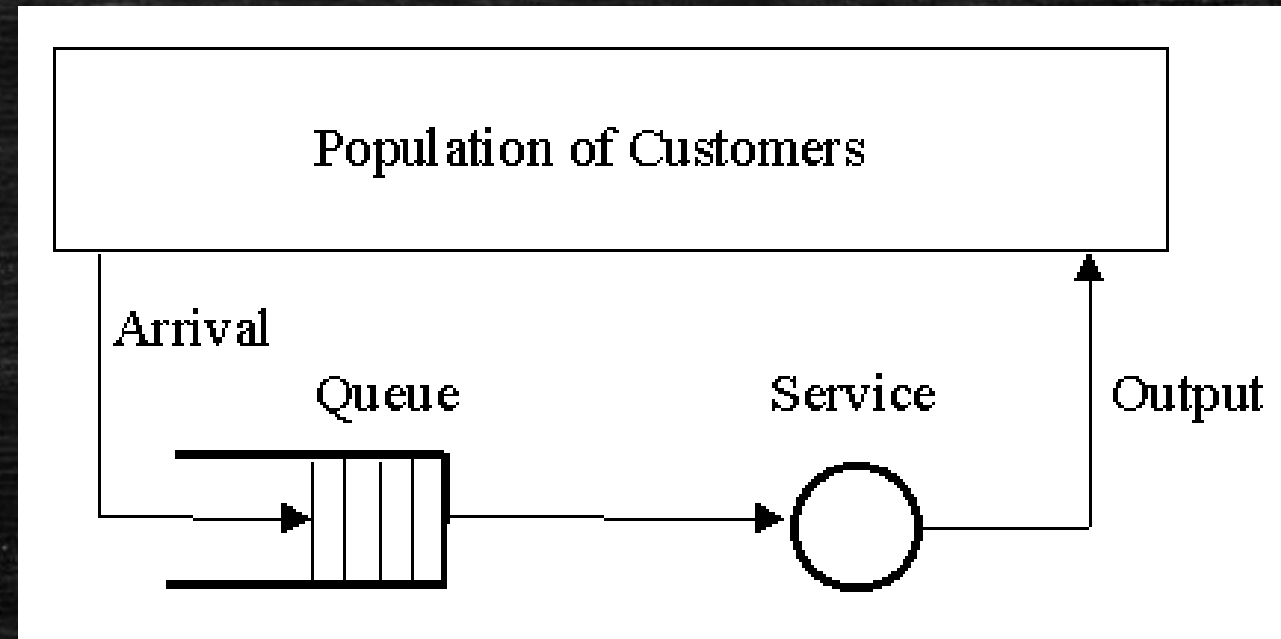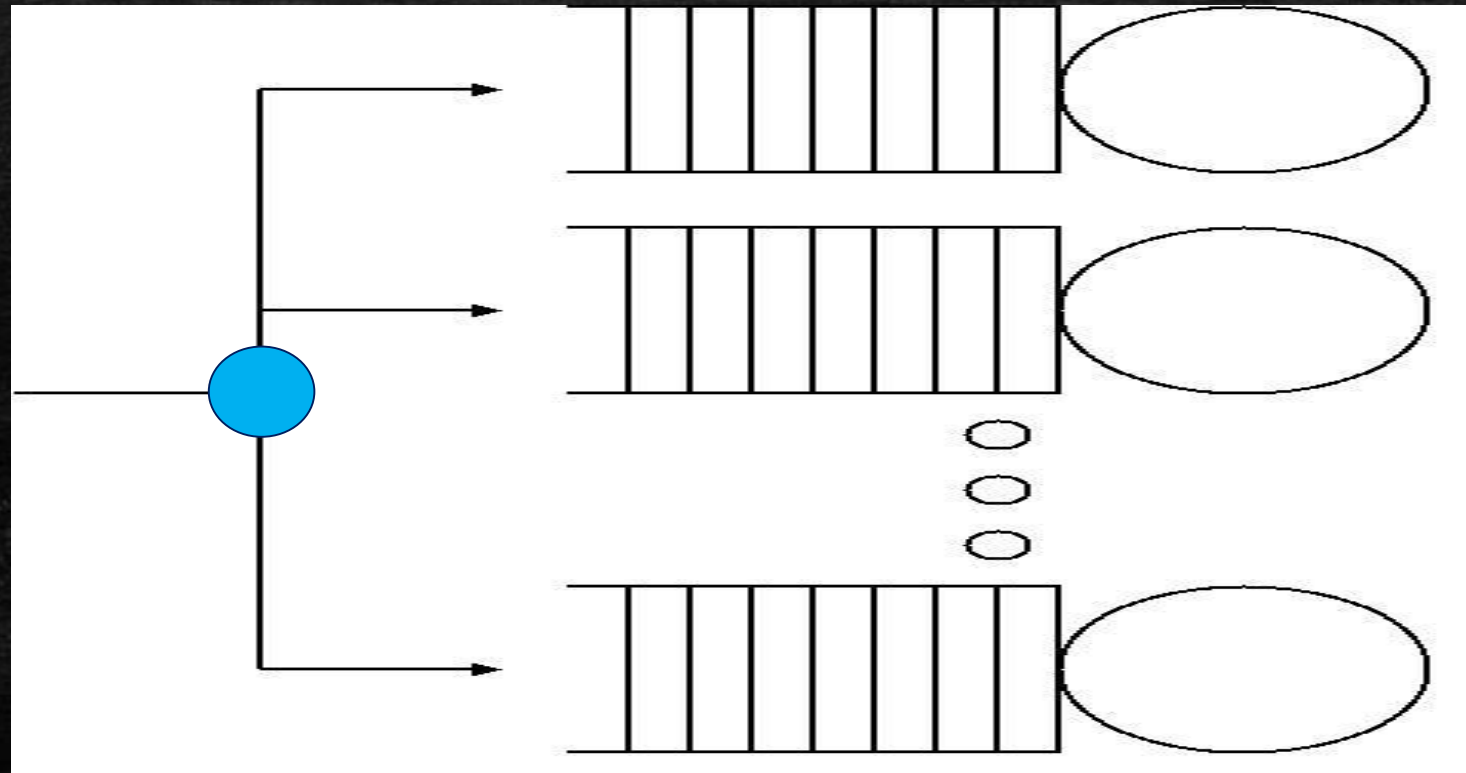
Queue Model

- Inter-Arrival Time Distribution (A)

- Service Time Distribution (B)

- Number of Servers (c)

- Scheduling Policy (FCFS)

- Capacity (∞)

A/B/c

Modelling Assumptions – the M/M/c Queue

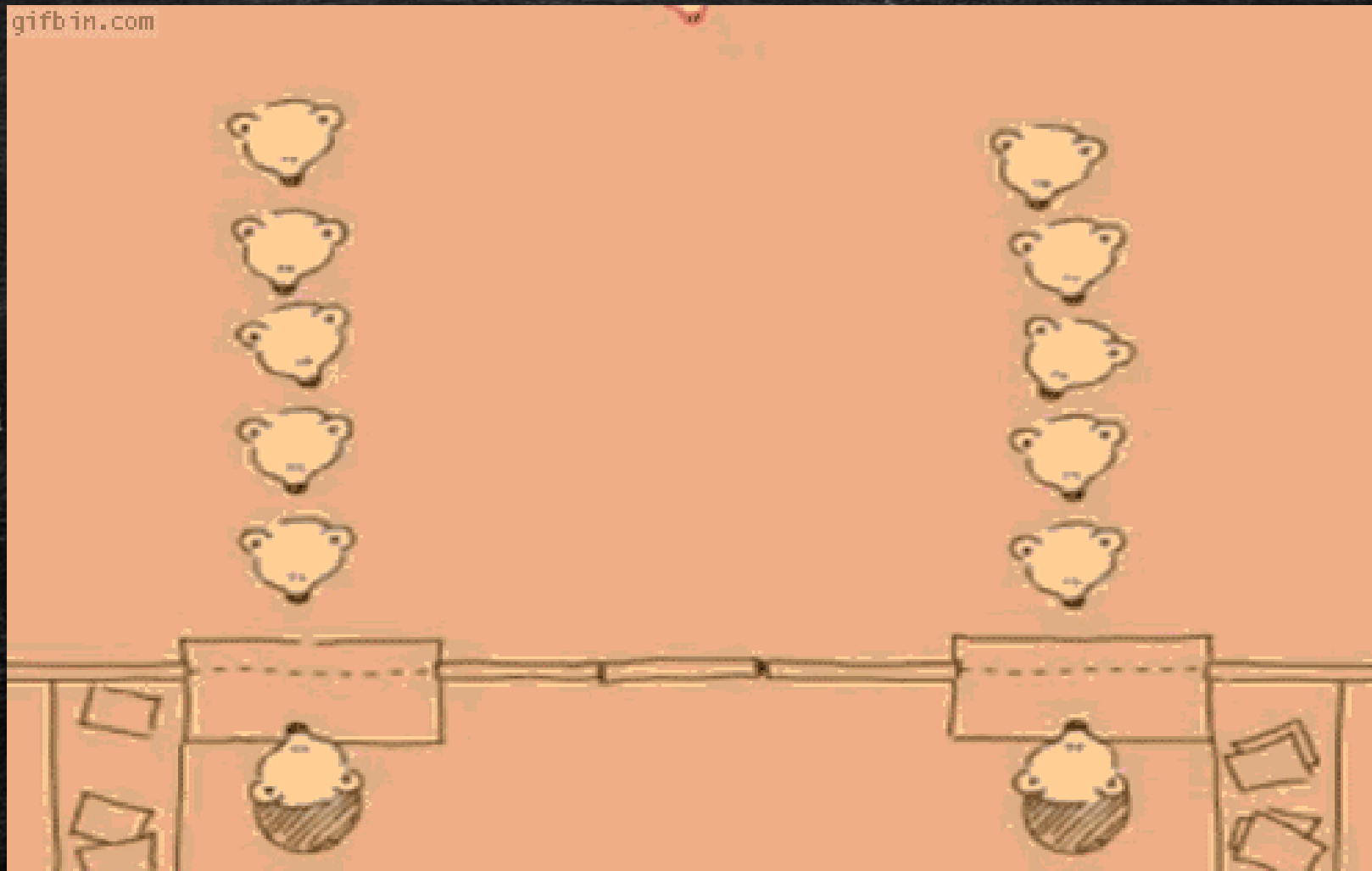- M - Markov Property

- c - Number of Cashiers (known)

Load Balancing Policies

- Supermarket v/s You

- Trade-Offs

- Random

- Round Robin

- Join the Shortest Queue (JSQ)
  - "Power of 2"

- Least Work Left (LWL)

- Size-Aware

What not to do

http://www.gifbin.com/bin/012013/1362076263_queueing_fail.gif