Industrial Engineering @ Kumoh National Institute of Technology

Kendall's notation (1)

- A/B/C/D
  - A : Arrival Processes

Symbol	Name	Description
M	Markovian	Poisson process (or random) arrival process.
M^X	batch Markov	Poisson process with a random variable *X* for the number of arrivals at one time.
MAP	Markovian arrival process	Generalisation of the Poisson process.
BMAP	Batch Markovian arrival process	Generalisation of the *MAP* with multiple arrivals
MMPP	Markov modulated poisson process	Poisson process where arrivals are in "clusters".
D	Degenerate distribution	A deterministic or fixed inter-arrival time.
Ek	Erlang distribution	An Erlang distribution with *k* as the shape parameter.
G	General distribution	Although *G* usually refers to independent arrivals, some authors prefer to use *GI* to be explicit.
PH	Phase-type distribution	Some of the above distributions are special cases of the phase-type, often used in place of a general distribution.

Kendall's notation (2)

- A/B/C/D
  - B : Service time distribution

Symbol	Name	Description
M	Markovian	Exponential service time.
D	Degenerate distribution	A deterministic or fixed service time.
Ek	Erlang distribution	An Erlang distribution with *k* as the shape parameter.
G	General distribution	Although *G* usually refers to independent service time, some authors prefer to use *GI* to be explicit.
PH	Phase-type distribution	Some of the above distributions are special cases of the phase-type, often used in place of a general distribution.

  - C : Number of machine
  - D : Number in system

Kendall's notation (3)

- Using Erlang distribution
  - E_2

M/M/3

- Transition diagram

- P_n

In 17 Machines case

- Transition diagram

- P_n

M/M/1/7

- Transition diagram

- P_n

M/M/3/7

- Transition diagram

- P_n

In non-identical machines

- Fast server (μ) , slow server (δ)

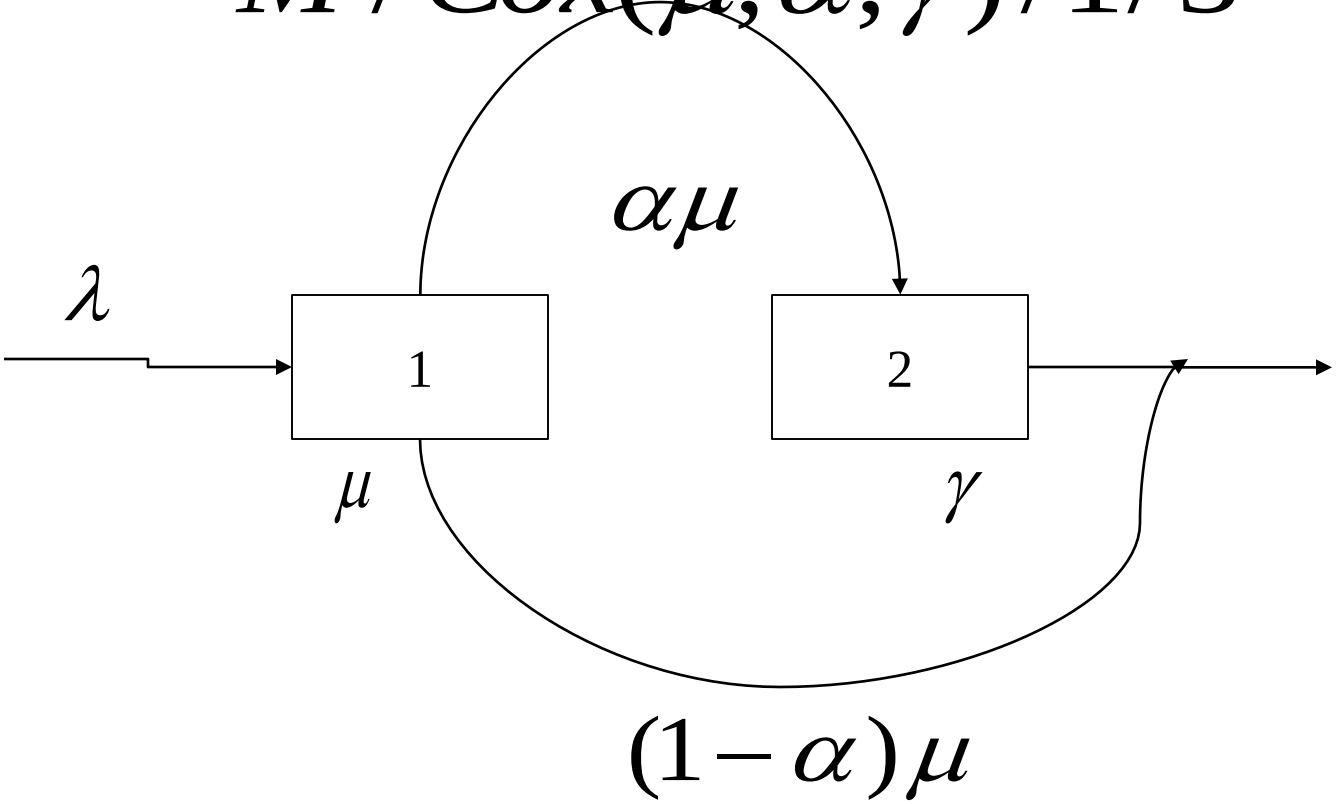
In break-down case

- Rate
  - Arrival rate : λ
  - Service rate : μ
  - Rate of break down : γ
  - Time to repair : υ

Industrial Engineering @ Kumoh National Institute of Technology

Coxian case (1)

- Case of $M/Cox(\mu,\alpha,\gamma)/1/3$



Coxian case (2)

- Transition diagram

Industrial Engineering @ Kumoh National Institute of Technology

Coxian case (3)

- Case of
  - $\lambda = 4$
  - $\mu = 6$
  - $\alpha = 0.1$
  - $\gamma = 5$

Coxian case (4)

- P_n

Industrial Engineering @ Kumoh National Institute of Technology

Coxian case (5)

- WIP
- Cycle Time