Algorithm 1 Discrete Event Simulation

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1: procedure DES(NumberofJobs, Load)
2:     λ ← Ratio · Load
3:     μ ← Ratio
4:     clock ← 0
5:     for i = 0 to NumberofJobs do
6:         ArrivalTime ← exponential(λ) + clock    ▷ Generate Random Num
7:         clock ← ArrivalTime
8:         job.PriorityTime ← ArrivalTime
9:         job.status ← Newjob
10:        Add job to queue
11:    end for
12:    while queue is not empty do
13:        Remove job from queue
14:        switch job.status do
15:            case Departure
16:                Decrement number of jobs in server
17:                Increment number of jobs served by server
18:                Increment number of jobs in current server state
19:            case Newjob
20:                Increment number of new jobs arrived
21:                if current jobs in server equals server capacity then
22:                    job.status ← Oldjob
23:                    Add job to queue
24:                    Increment number of jobs in current server state
25:                    Increment number of jobs denied by server
26:                    currentServer ← nextServer                ▷ Round Robin
27:                else
28:                    job.status ← Departure
29:                    job.id ← server.id
30:                    ServerTime ← exponential(μ) ▷ Generate Random Num
31:                    job.PriorityTime ← job.PriorityTime + ServerTime
32:                    Add job to queue
33:                    Increment number of jobs in server
34:                    Increment number of jobs in current server state
35:                    currentServer ← nextServer                ▷ Round Robin
36:                end if
37:            case Oldjob
38:                Increment number of servers visited by job
39:                Increment number of old jobs arrived at current server
40:                if number of servers visited by job > number of servers then
41:                    Increment number of dropped jobs
42:                else
43:                    if current jobs in server equals server capacity then
44:                        Add job to queue
45:                        Increment number of jobs in current server state
46:                        Increment number of jobs denied by server
47:                        currentServer1← nextServer            ▷ Round Robin
48:                    else
49:                        job.status ← Departure
50:                        job.id ← server.id
51:                        ServerTime ← exponential(μ)    ▷ Generate Random
   Num
52:                        job.PriorityTime ← job.PriorityTime+ServerTime
53:                        Add job to queue
54:                        Increment number of jobs in server
55:                        Increment number of jobs in current server state
56:                        currentServer ← nextServer            ▷ Round Robin
57:                    end if
58:                end if
```