$$\frac{dI(t)}{dt} = \frac{\eta}{\Omega} I(t) \cdot [N - I(t)]$$

Note Title 11/5/2013

Computer [100000] 1, 2, 3, ... 100,000

```
Computer = (-1) * ones(100000, 1) ;
Computer(1:10) = zeros(10, 1) ;  % denote a computer as vulnerable with 0
```

```
ip = fix(rand * 100,000 + 1) ;
if( Computer(ip) == 0 ? )
```

manual simulate a $M/D/1$ queue

↳ $\lambda = \frac{1}{2}$ Service time = 1

	t	N_A	N_D	n	$EL(t_A, t_D)$	
	0	0	0	0	$(1.4, \infty)$	exp. $t = 1.4$
$A(1) = 1.4$	1.4	1	0	1	$(3.5, 2.4)$	exp. $t = 2.1$
$D(1) = 2.4$	2.4	1	1	0	$(3.5, \infty)$	
$A(2) = 3.5$	3.5	2	1	1	$(4.7, 4.5)$	exp. $t = 1.2$

$$\pi Q = 0$$
$$\pi 1 = 1$$

$$(\pi_1, \pi_2 \cdots \pi_6) Q = (0\ 0\ 0\ 0\ 0\ 0)$$

$$(\pi_1, \pi_2 \cdots \pi_6) \begin{bmatrix} \\ \\ \\ \\ \\ \\ \end{bmatrix} = 1$$

$$(\pi_1, \pi_2, \pi_3, \pi_4, \pi_5, \pi_6) \begin{bmatrix} Q_{(1:5)} & \vdots & 1 \\ & \vdots & 1 \\ & \vdots & 1 \\ & \vdots & 1 \\ & \vdots & 1 \\ & \vdots & 1 \end{bmatrix} = (0\ 0\ 0\ 0\ 0 \vdots 1)$$

Q_{-m} → B

$$\pi = B \cdot Q_{-m}^{-1}$$