김현수 (hscornelia) 수정

팔로우 중인 프로필 전체 프로필 보기

돌소리
알립니다
구인구직란
18학번 모임
버그 제보 및 기능 제안
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개인정보 처리방침

[2016-2] 컴퓨터모델링 (이창건 교수님) 중간고사 족보

5년 전

신동진

1.
1) 3가지 Level of Abstraction을 설명하라
2) 각 level에 대해 event가 어떤 것인지 설명하라
3) fine-granulity simulation의 pros & cons
4) M/M/1을 Kendal's Notation과 연관지어서 설명하라

a) Sample space
b) Sample point
c) Event
d) Random Variable

3. Poisson distribution과 exponential distribution의 동등성 증명

4. 평범한 M/M/1 Queueing System 분석

5. SMPL 코드에 빈칸

```
Ta = 0.5, Ts = 0.1;

smpl(0, "M/M/1 Queue");

// Initialize server facility (single server)
```

```
server=facility("server", 1);

// Schedule arrival event at time 0 to kick-off simulation
schedule(1, 0.0, customer);

// Loop while simulation time is less than te
while (time() < te)
{
 // "Cause" the next event on the event list
 cause(&event,&customer);

 // Process the event
 switch(event)
 {
  case 1:  // *** Arrival
   schedule(2, __, customer);
   schedule(1, expntl(__), customer);
   break;

  case 2:  // *** Request Server
   if (request(server, customer, 0) == 0)
   {
    schedule(__, expntl(__), customer);
   }
   break;

  case 3:  // *** Release server
   if (uniform(0, 1) < 0.5)
     schedule(2, __, customer);
   release(server, customer);
   break;
 }
}
```

a) 빈칸 채우기
b) 이 코드에 해당하는 Queueing Network 그리기
c) server의 utilization
d) L = ?

6) Consider a computer system with TWO processors and NO waiting queue. Out of the two processors, one is faster than the other. That is, the average execution time of a job on the fast processor is 0.5 sec while that on the slow processor is 1 sec. Computational jobs arrive at this system with the average rate of 4 jobs/sec following the Poisson distribution. If both processors are idle, a job is assigned to the fast processor. Only when the fast processor is busy, a job is assigned to a slow processor. Once a job is assigned to a processor, it must execute on that processor until completion.

(a) What is the average number of jobs in the system at any time instant?
(b) What is the probability that the fast processor is busy?
(c) What is the probability that the slow processor is busy?
(d) What is the average time for completing a job?
(Hint: Draw system's state transition diagram. In a statistically equilibrium, from the perspective of a state, the total outgoing rate is equal to the total incoming rate.)

7) Queueing Network : CPU + Display + Disk
λ = 1
CPU -> Display = 0.2, CPU -> Disk = 0.3, CPU -> out = 0.5
Service time : CPU = 0.1, Display = 0.2, Disk = 0.3

a) average number of jobs of each subsystem
b) Average number of jobs in the system
c) Average time for each job
d) 각 작업이 Disk를 방문하는 평균 횟수

복기 with 이은서
우왕

--
평화롭게 살고 싶다

추천(0)

▶ 컴퓨터모델링 × 태그추가

ㄴ 확인