**1. Compute X0 for this system (10 marks)**

X0: system throughput: X0 = C0/T .

C0 = Completions - 57 according to log.dat Timestamps

T = Observation Window- looking at th $usr and $sys data columns in mpstat.dat it would appear the Observation Window begins at 20:49:21 and ends at 20:52:25

**2. Compute Ucpu (10 marks)**

Ui : The utilisation of resource i , given as: Ui = Bi/T

**3. Compute Dcpu (10 marks)**

Dcpu=Ucpu/Xo

Example

A Web server is monitored for 10 minutes and its CPU is observed to be busy 90% of the monitoring period. The Web server log reveals that 30,000 requests are processed in that interval. What is the CPU service demand of requests to the Web server?

The observation period T = 600(= 10 \_ 60) seconds.

The Web server throughput, X0, is equal to the number of completed requests

C0 divided by the observation interval;

X0 = 30; 000=600 = 50 requests/sec.

The CPU utilization is UCPU = 0:9.

Thus, the service demand at the CPU is DCPU = UCPU/X0 = 0:9/50 = 0:018

seconds/request.

**4. Compute the maximum throughput Xmax0 (10 marks)**

Since X0 = Ui/Di, XoMax ≤ 1/Di.

Therefore, the maximum throughput, Xmax0 = 1/Dcpu

Using the notation above, we can re-state the problem as follows:

T = ?? seconds

K = 1 resource – the cpu

B1 = ?? seconds – busy time

A1 = A0 = 1800 transactions

C1 = C0 = 1800 transactions