**Riverside City College**

CIS21 - Introduction to Operating Systems

Lab Assignment Two

**Due date:** Tuesday, March 4, 2014

**Points:** 10

**Instructions:** For questions 1 and 2 below, search the internet to answer each of the two questions. Review a number of web sites and pick 3 that reflect accurate, succinct descriptions.

Write your answer in complete sentences, in as many sentences as it takes to answer the question. Your answers must be complete with complete sentences, good grammar, and proper spelling. You will probably end up writing a paragraph for each one.

At the end of each of the answers, provide the web address of each of the 3 web sites you chose to review for your answers. If you use fake or invalid web addresses you will receive no credit for the entire assignment.

1. **Describe the difference between asymmetric and symmetric multi-processors.**

A: In Asymmetric multiprocessing (ASMP), the operating system typically sets aside one or more processors for its exclusive use. The remainder of the processors run user applications. As a result, the single processor running the operating system can fall behind the processors running user applications. This forces the applications to wait while the operating system catches up, which reduces the overall throughput of the system.

In the ASMP model, if the processor that fails is an operating system processor, the whole computer can go down.

In Symmetric multiprocessing (SMP) technology is used to get higher levels of performance. For instance, any processor can run any type of thread. The processors communicate with each other through shared memory. SMP systems provide better load-balancing and fault tolerance. Because the operating system threads can run on any processor, the chance of hitting a CPU bottleneck is greatly reduced. A processor failure in the SMP model only reduces the computing capacity of the system.

SMP systems are inherently more complex than ASMP systems. A tremendous amount of coordination must take place within the operating system to keep everything synchronized. For this reason, SMP systems are usually designed and written from the ground up.

<http://electronicdesign.com/digital-ics/symmetric-multiprocessing-vs-asymmetric-processing>

1. **What 3 advantages and one disadvantage of multiprocessor systems.**

A: Multiprocessing is the use of two or more central processing units (CPUs) within a single computer system. The term also refers to the ability of a system to support more than one processor and/or the ability to allocate tasks between them.[1] There are many variations on this basic theme, and the definition of multiprocessing can vary with context, mostly as a function of how CPUs are defined.

Advantages:

1. Increase throughput
2. Economy of scale
3. Increased reliability

Disadvantages:

1. If one processor fails then it will affect in the speed
2. Multiprocessor systems are expensive

<http://wiki.answers.com/Q/What_are_three_advantages_and_one_disadvantage_of_multiprocessor_systems>

1. **List 5 of the 7 computing environments.**

A: Computing Environment is a collection of computers / machines, software, and networks that support the processing and exchange of electronic information meant to support various types of computing solutions.

They are:

1. Cloud Computing
2. Grid Computing
3. Utility Computing
4. Distributed Computing
5. Cluster Computing

<http://blogs.msdn.com/b/vasudevk/archive/2009/02/06/different-types-of-computing-grid-cloud-utility-distributed-and-cluster-computing.aspx>