Midterm Examination Answers
Trinity College
December 4, 2002

Do your best to demonstrate the knowledge information systems that you have gained by answering any three of the following questions. You will have an hour for the examination.

1. **You are about to recommend that your company spend a very large sum of money on a new computer hardware and software system to manage sales transactions. Develop four arguments that you will us to justify project funding.**

I would perform a cost-benefit analysis and argue that the potential benefits from the new system, both hardware and software would be greater than the cost for development and fielding.

I would examine the improved efficiency that the new system would provide and quantify it in terms of man hours saved or salary dollars saved.

I would take a look at the repair and maintenance costs for the hardware and see if those costs had increased as the equipment got older. I would also estimate the future increase costs for maintenance and repair. This information would become a strong argument for the hardware replacement.

I would itemize the new features that the improve system would provide to the users and then quantify the values of those items in terms of increased sales, improved productivity except rep.

Finally I would try to quantify the costs that would the associated with not upgrading to the new system.

2. **Tracy Smith has no experience with databases and been assigned as a new department head and is now your supervisor. Describe the common features of a relational database to Tracy.**

A relational data base stores data which becomes the building blocks for information needed by the organization for efficient management.

The data base provides users with rapid access to data and information through the use of queries. These queries are much more efficient than manual searches through paper. The data base can also be sorted and indexed on any combination of data fields stored in the data base. The data base becomes the basis for production of reports, both paper and electronic. The data base makes it possible to store huge quantities of data in much smaller areas then paper files.

The data base is made up of a series of to dimensional tables which represent things in the real world. Each table has a set of attributes or data fields which describe the real world thing represented by the table. Each of the tables and relational data base is connected to other tables by the use of keys.

3. Briefly describe a software development life cycle.

A typical software development life cycle usually begins with a feasibility study to determine what needs to be done and to discover if this is technologically possible. When this is completed a set of requirements for the software is developed and documented. The requirements become the basis for the actual design of the software.

When this work is completed the code for the software is developed. In these usually tested during development by the programmer. It is also usually tested again when each software module is completed. Finally, an integration test is performed to make sure that each one of the software modules is able to work successfully with the others.

When testing is complete, the software is fielded to the users.

However, the development continues in a maintenance phase for the remaining lifetime of the software. This is where bugs are corrected and enhancements are added.

4. What are data standards and why are they important to the computer industry?

Standards in the software industry permit to computer hardware and software to operate on equipment manufactured by different companies. They provide deficiencies since once the standards are established cables, connections, memory, and media become interchangeable.

When Standard we're not as common as they are today computer products might or might not work together. A SCSI hard disk drive manufacturer by Seagate might not work in the same computer with an another hard drive manufactured by Western Digital. A cable connecting a printer to an Apple Computer could not be used to connect one to an IBM computer. A common example of standards would be the Sony beta video tape recording system and the VHS and video tape recording system. if you have a Sony player you had to have a videotape that was in the Sony format. It was not interchangeable with VHS recorders and players.