

### HW4 Chapter 11 Questions

11.4)

a. Internet Server- For an internet server, security and availability will be the most important attributes. Security to protect customer information such as IP addresses and potential login information, and availability to ensure that the server is running whenever clients need access to it.

b. Computer Scalpel – The most important attribute for the scalpel will be safety; to ensure that commands are carried out accurately and efficiently. Availability is not as important, since if it isn't working, then it can cause no more danger. Reliability is important as well, but not as important as safety. Security is not an issue unless patient information is stored within the same program or system.

c. Directional Control System- Reliability is by far the most important, since a failure could mean a huge loss of investment and data. Availability would also be very important, but usually over that distance, a delay is expected, and there is not a pressing need to access the data immediately. Security may be an issue if the satellite contains valuable information, and safety isn't really an issue unless it is manned.

d. Personal Finance System – Security is by far the most important feature, since peoples money is at stake. Reliability would be next, as a lost transaction could result in a loss of funds. Availability is also important. Safety isn't much of an issue.

11.7) The most obvious hazard would be an incorrect amount of radiation administered to the patient. Besides including safeguards within the actual program, there could also be confirmation screen, in order to prevent human error. If the operator has to enter in the data twice, and they match, it is less likely that an error will occur.

11.9) Possible threats to the server include :

a) A perpetrator gaining access via hacking methods such as SQL injections, and decoding passwords using electronic methods. Controls to prevent this could be data type confirmation, as well as using stronger encryption methods.

b) Misuse is another threat to this system, or user error. This is best prevented by streamlining interfaces, and also by using confirmations to ensure the accurate input of information.

c) The final threat to this system is water damage. This can be prevented by not placing your server room in a fish tank. Sorry Dr. Bowring, but I can't think of another threat to the system without getting into environmental problems. These could be prevented by properly insulating the machines, or having a well ventilated, dry room.