

Complete Exercise 1.2 (p. 54)

Moore's Law: g. Adding electromagnetic catapults allowed by new reactor technology

Abstraction: h. Building cars that partially rely on existing sensor systems

Common Case Fast: e. library reserve desk

Parallelism: c. Aircraft and marine navigation systems that incorporate wind information

Pipelining: d. express elevators in buildings

Prediction: a. assembly lines in automobile manufacturing

Hierarchy: f. increasing the gate area on a CMOS transistor to decrease its switching time

Dependability: b. suspension bridge cables

Short Paragraphs about 3 of 8 great ideas

Moore's Law

The most obvious of these to me is Moore's Law, nearly everyone has seen their computer that was brand new only a few years ago be obsolete, and not have the necessary memory capabilities for the latest and greatest software. I generally try to buy a computer or video game console before it is completely obsolete, but after something better is close to being released to save myself some money. Although computers continue to double their memory very rapidly it seems that slightly older computers still have the necessary memory and processing capabilities for the average user, and extreme gaming is generally about the only thing that pushes the limits of the latest and greatest machines.

Make the common case fast

This seems to not only be an intelligent design for computers, but for life in general as well. Often times when planning out how to do something I try to plan for every possibility, even the rare cases. Making the common case fast will always be the best idea as this will allow you to finish the tasks that occur more often than not fairly quickly. Uncommon tasks will take longer, but that is ok as they are uncommon. I used this idea in a Huffman Coding assignment last semester, the most common letters in a word document were translated to shorter binary numbers, while the uncommon letters were translated to very long binary numbers

Performance via Prediction

This is an interesting idea that I try to employ at work, and when I have extra time to do homework. At work some people sit around until they know for sure that they need to do something, when they know what they will probably need to do, so if they just did it we would be ahead more often than not. I try to employ this method with my homework, because I always assume I will have more time to do homework at the beginning of the semester than I will at the end of the semester, so if I see a future assignment posted I will try to complete it when I have free time. Sometimes it changes later, but often times it doesn't