

520.216 Design a Chip that Sees

Mini-Project #1 (5% of final grade)

Moore's "Law" in your family

1. Read Gordon Moore's original paper on scaling of semiconductor devices and write a one page critical review. (PDF file link is on our website)

If you do not know what a critical review is, please see the link below for one good description.

<http://www.tc.umn.edu/~jewel001/CollegeWriting/WRITEREAD/CritReview/default.htm>

2. In your family, call your grandparents and ask them if and what was the first computer they have used at work or at home. If your grandparents did not have a computer, ask them if they knew anyone that had a computer in their time and get the information for that. Note the details and in particular how much memory it had and what processor it used. Do the same for the first computer that you had at home by getting the information from your parents. Repeat for your computer now. Noting that one memory bit is more or less one transistor make plot of the year that the computer was/is used in your family and the number of transistors it used and see if Moore's "Law" holds true for your family.

In addition to the plot please, write a brief description of your research explaining how you collected your data and summarize your findings.

3. Use the resources from the course website (link below) on how to do a literature search of IEEE journals.

<http://www.ece.jhu.edu/~andreou/216/Resources/ieeexplore.html>

For ONE of the computer/processor in your family find the technical/journal article that gives the technical specifications and report on:

- (i) Processor name
- (ii) Processor manufacturer
- (iii) Year that the processor was introduced in the market
- (iv) How many transistors did the processor have
- (v) How fast was the processor (clock speed)
- (vi) How large (silicon area) was the chip
- (vii) Anything notable about the processor (did it have a floating point unit, did it have a memory management unit –enabling it to run an operating system- e.t.c.)