Introduction

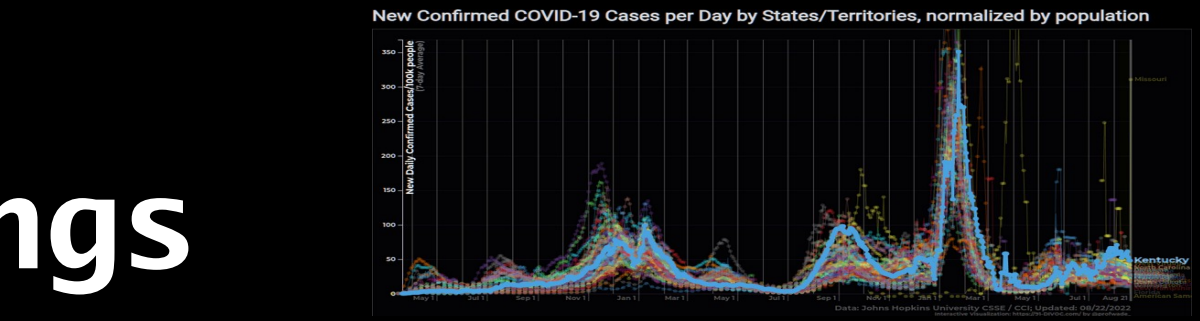
EE685, Fall 2022

Hank Dietz

http://aggregate.org/hankd/

University of Kentucky

Class Meetings



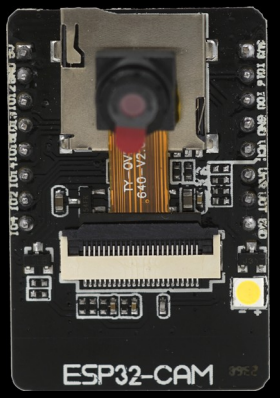
- We are scheduled to meet in person, and that is the plan for the semester… *as I write this*
- With treatments and >90% of UK vaccinated, COVID is less deadly, but *still very contagious*
  - Follow UK/CDC guidance
  - Use class online resources to keep up
- I ***encourage masks*** **for in-person meetings unless socially distanced**

Course Overview

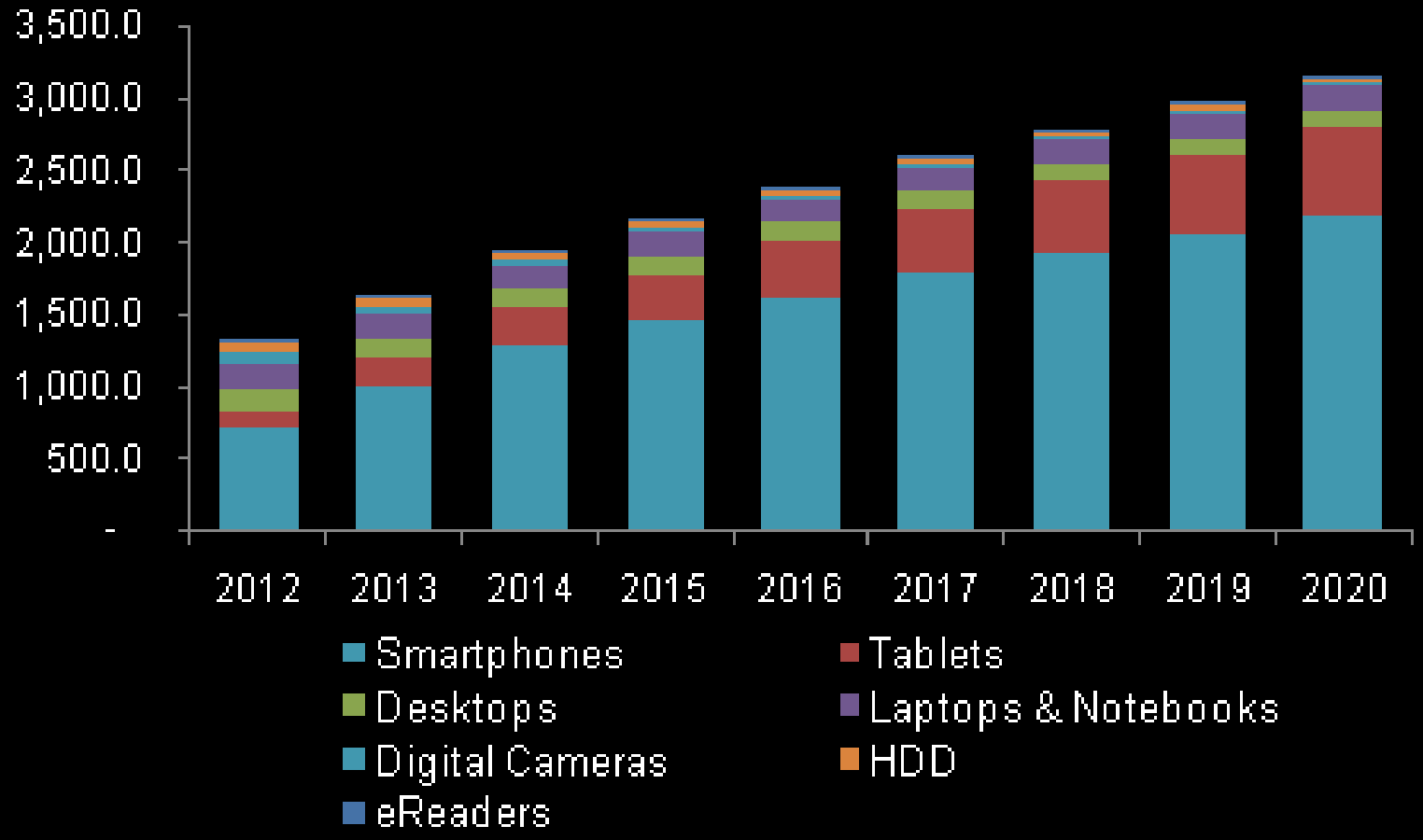
- There will be Verilog, and you'll design stuff
- A lot more of the advanced stuff
  - Fancy things inside processors
  - Lots of parallel architecture
- There may be some higher-level simulation

Advanced Stuff?

Frontier Supercomputer:
8,730,112 cores, 1.102 Exaflop/s

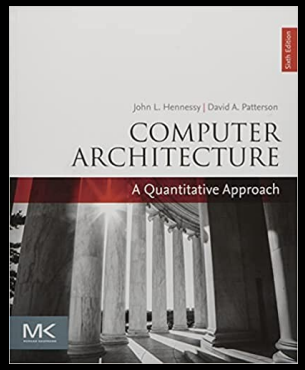


M-Unit Sales, Global Personal Electronics



https://www.grandviewresearch.com/industry-analysis/personal-consumer-electronics-market

Textbook



- The text is:
  Computer Architecture, 6th Edition: A Quantitative Approach,
  by Patterson & Hennessy
- Same text as was used in CPE480…
  and only loosely followed here too
- Lots of additional materials…
  text is for reference only

Grading & Such

- Midterm exam, ~20%
- Final exam, ~30%
- Material cited from the text, from lectures, from canvas, or from the course URL: **http://aggregate.org/EE685/**
- Homeworks and projects, ~50%
- Can't get more than 1 letter grade above min(exam average, project average)
- I try not to curve much; always in your favor

Course Content

- Precise content depends on you:
  - How many of you took CPE380? When?
  - How many of you took CPE480? When?

This course is sort-of **++CPE480**...

- The syllabus is posted, but it's pretty vague because things will vary significantly based on the backgroudns of students in the course

Me (and why I'm biased)

- Hank Dietz, ECE Professor and
  James F. Hardymon Chair in Networking
- Office: 203 Marksbury
- Research in parallel compilers & architectures:
  - Built 1st Linux PC cluster supercomputer
  - Antlr, AFNs, SWAR, FNNs, MOG, ...
  - Various awards & world records for best price/performance in supercomputing
- Lab: 108/108A Marksbury – I have **TOYS**!


KREQC
Kentucky's Rotationally Emulated Quantum Computer
SEE WHAT'S
Wildly Possible
Power Supply
Control Logic
KREQC
Wave Function Generator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