Lecture 7: Performance

Wednesday, January 23, 2019 9:29 AM

Outline

- Lab 1 feedback and announcements
- What makes a system good?
- Iron law
- Single cycle CPU performance

WHAT WERE THINGS LIKE IN THE OLD DAYS? I HEAR YOU HAD TO ... COMPILE THINGS FOR DIFFERENT PROCESSORS?









EARLY COMPILERS COULD HANDLE CODE FINE, BUT COMMENTS HAD TO BE WRITTEN IN ASSEMBLY.



ON PUNCH CARDS. YOU HAD TO PICK A COMPACT FONT, OR YOU'D ONLY FIT A FEW CHARACTERS PER CARD.







What debugging support -error nessages bul

What documentation is missing.

- better does on errors
- better does on (are I) 4 do it
- how to use non CSIF madines Grove up to close
- better does on switch lis or wen lotherwise and defaults

- we're ahead! > I violated schedule Scholik

- Today: performe (hoter 1
- -Tororrow: Lab 7 mare single eyel
- Friday More perf + Pizelining intro practice test
- Morday: Firish Put
- -wed ; rewiew
- -Thurs ! mider m I

Justin has problems

How to measure "goodness" of a system?

Throughput >> #of insts pur time lateray -> delay for single instruction

Area/# transistors

Power consumption

Average memory access time (AMIT ALCUTARY

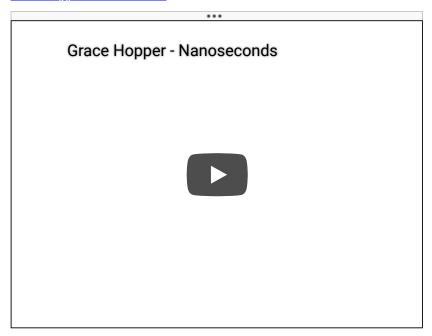
Secwity

grerality >> specificity

Rechmels un be used to measure Systems

by key work architecture

Grace Hopper - Nanoseconds



https://youtu.be/JEpsKnWZrJ8

How to measure performance? frequently used software
Blackmer My popular applications
run this or our system + make measurements time > latercy surprise to load worktime > throughout > website to load so acce.
workting > throughout Is noto; in to land
to men's mer's men's melialy
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hur "minimum latercy" > request pur second on overvisors Quality of swice (regood & search
Quality of swice Google search
Good berchner 67.
A relevent of transvist SPEC benchmark suite
A relevent of transvist SPEC benchmark suite by machine learning workload by hard to generalize
"prediction" Lineally hard
flow do we great-by performance of DINO PU?

performance x (yeles pur X) # of instruction — time to run
for application

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for application

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Single Cycle CPU performance