Class review. What have we done?
Overview of advanced computer architecture
Teaching Effectiveness surveys
Final exam overview and sample questions
Project06 deliverables and interactive grading

CS 315

16 weeks ⇒ lab / project due every week
6 projects

Raspberry Pi → ARMv7 → .

C / ARM Assembly / Digital Logic
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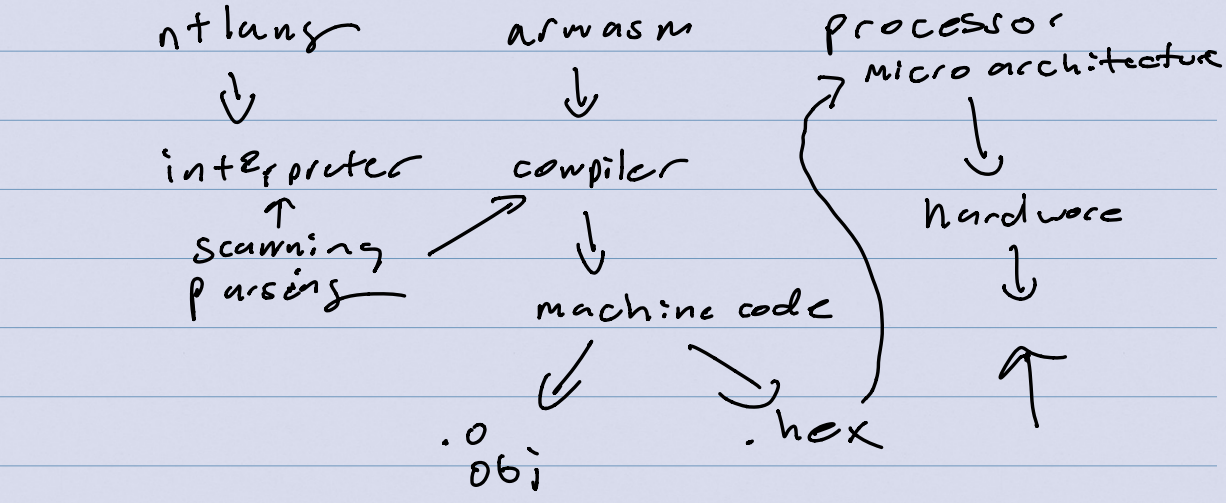
Makefiles

Meta

Program execution



Meta

Problem solving

Debugging gdb

Meta

data representation

bin hex dec

signed

Meta

console-based programming

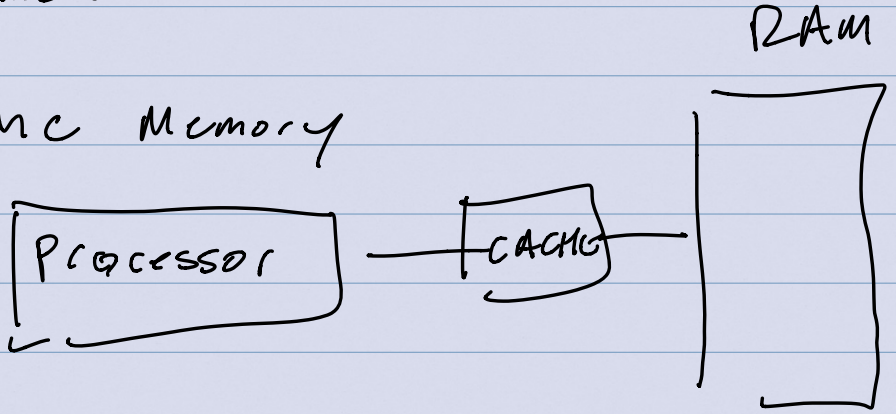
Advance & computer architecture

performance

Energy usage

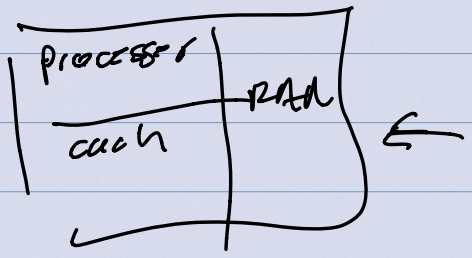
Thermal

Cache Memory



Apple

M1 SoC



Micro architecture

single cycle

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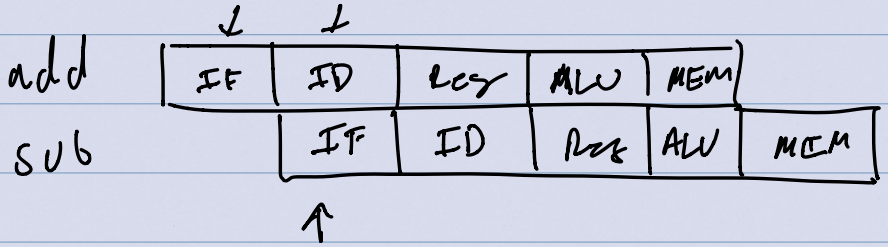
pipelined processor



↙ ↘

super scalar

out of order

OOO execution

```
add r0, r1, r2 ←
sub r3, r4, r5 ←   } simultaneously
```

```
→ ldr r0, [r1] ←
  add r1, r1, #2
```

Project06

processor_main.dig

add supporting .dig

test .s files

test .hex files

Instruction Memory

PN → ROMs