

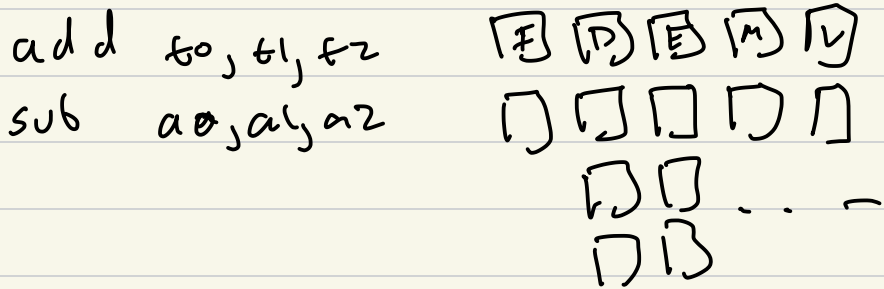
CS 631-02 Advanced Arch and Intro to OS

Review of Hazard Unit

Advanced Arch

Branch Prediction

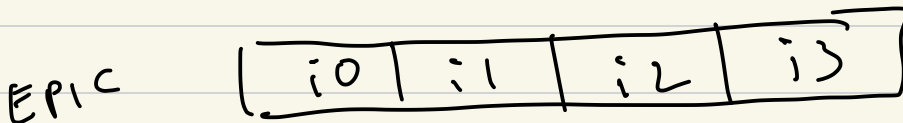
super-scalar n-way multiple issue



Intel Itanium

VLIW very large instruction word

128 bits



SIMD single instruction multiple data

Out of order execution

```
[ ld t0, (t1)
  addi t2, t2, 8
  mul a0, a0, a1
```

Speculative execution

Intro to OS

xv6 MIT RISC-V

less than
10,000 LOC

UNIX abstractions

System calls

Kernel

protective & isolation
Resource Management
Abstraction of HW

Kernel Mechanisms

Timer interrupts

Context switching

Virtual Memory

