

Lab6 Report

一.实验内容

1.实现了简单的五级流水线

2.

```
Emu compiled at May  5 2024, 11:02:32
The image is ./ready-to-run/labnorm/labnorm-test.bin
Using simulated 256MB RAM
Using /home/wy/Document/cpu-design/ready-to-run/riscv64-nemu-interpreter-so for difftest
[src/device/io/mmio.c:19,add_mmio_map] Add mmio map 'clint' at [0x38000000, 0x3800ffff]
[src/device/io/mmio.c:19,add_mmio_map] Add mmio map 'uartlite' at [0x40600000, 0x4060000c]
[src/device/io/mmio.c:19,add_mmio_map] Add mmio map 'uartlite1' at [0x23333000, 0x2333300f]
dump wave 0-999999 to /home/wy/Document/cpu-design/build/1714878153.fst...
The first instruction of core 0 has committed. Difftest enabled.
[WARNING] difftest store queue overflow
Pass!
[src/cpu/cpu-exec.c:393,cpu_exec] nemu: HIT GOOD TRAP at pc = 0x000000008000f618
[src/cpu/cpu-exec.c:394,cpu_exec] trap code:0
[src/cpu/cpu-exec.c:74,monitor_statistic] host time spent = 4514 us
[src/cpu/cpu-exec.c:76,monitor_statistic] total guest instructions = 16242
[src/cpu/cpu-exec.c:77,monitor_statistic] simulation frequency = 3598139 instr/s
Program execution has ended. To restart the program, exit NEMU and run again.
sh: 1: spike-dasm: not found
```

3. 实现时的问题

1.因为访存有延时，执行也可能有延时，好像和理论上的五级流水有区别。一般下一条指令还在取指阶段，这一条指令已经执行完了。不过执行乘法指令时可能遇到数据冒险。