

ICS Homework Week 1

March 6, 2020

1 HCL

We have introduced HCL in class to design combinatorial logic circuit. Try to write HCL code for the following circuit: Take A, B, C, and D as input, output the max value of them.

E.g. $\text{Max}(1, 2, 3, 4) = 4$.

```
1  int Max = {  
2      A >= B && A >= C && A >= D: A;  
3      B >= A && B >= C && B >= D: B;  
4      C >= A && C >= B && C >= D: C;  
5      1 : D;  
6  }
```

2 Exception

Please specify which kind of exception (Faults, Aborts, Traps, Interrupts) will occur in the given scenario, point out whether it is asynchronous or synchronous, and specify where the exception handler will return to.

- A. Access content at address 0x0.
- B. The memory of your PC corrupted.
- C. You run a command “*kill - 9 < pid >*” in your shell.
- D. You click your mouse.

ANS:

A. Access content at address 0x0. Faults. Synchronous. Aborts the interrupted program.

B. The memory of your PC corrupted. Aborts. Synchronous. Aborts the interrupted program.

C. You run a command “*kill - 9 < pid >*” in your shell. Traps (System calls). Synchronous. Return control to the next instruction.

D. You click your mouse. Interrupts. Asynchronous. Return control to the next instruction.