汇编语言例题

寄存器

1. 判断：
    1. In order to use the saved registers (s0-s11) in a function, we must store their values before using them and restore their values before returning.
    2. `jalr` is a shorthand expression for a `jal` that jumps to the specified label and does not store a return address anywhere.
    3. Assuming no compiler or operating system protections, it is possible to have the code jump to data stored at 0(a0) (offset 0 from the value in register a0) and execute instructions from there.
    4. In the multiplication and division extension of RISC-V, the division instruction ensures that an exception will not be thrown even if the divisor is zero.
    5. Each instruction in the RISC-V instruction set has two operating modes, 32-bit and 64-bit, corresponding to the processor's bit width.

机器码汇编语言转换

1. 0xE2952023对应的指令是什么
2.

Address(Hex)	inst	machine code
200010	Loop: add x18,x19,x20	
200014	jal x0,L1	
…		
20001c	bne x20,x29,Loop	
.....		
200070	L1	

汇编功能

1. 如何使用最少的指令判断 `x20>x11 | x20 < 0`，已知 `x11>=0`，这里请务必向监考老师确认取值范围。
2. beq能跳转的范围比较小，请使用一对指令实现 Beq x0, x1, L
3. 如何获取 `0x12345800` 存储的内容?
4. 对寄存器每一位取反
5. 不等于0

C语言转汇编

1. 大家应当询问监考老师栈单元大小

```
long long  fib(long long n){
 if (n==0)
     return 0;
 else if (n == 1)
     return 1;
 else
     return fib(n-1) + fib(n-2);
 }
```