1 Comparing floating point numbers

Consider this program:

```
1                   section .data
2                           x DD 3.14
3                           y DD 2.1
4
5                   section .text
6                           global _start
7                           _start:
8                                   MOVSS xmm0, [x]
9                                   MOVSS xmm1, [y]
10
11                                  UCOMISS xmm0, xmm1
12                                  JA greater
13                                  JMP end
14
15                          greater:
16                                  MOV eax, 1
17                                  INT 80h
18
19                          end:
20                                  MOV eax, 1
21                                  INT 80h
```

Here, we are comparing two floating point numbers. For comparision between floating point numbers we donot use the **CMP** instruction, instead we use the **UCOMISS** instruction. This works the same way as the **CMP** instruction works, it also sets some eflags based on the comparisions.

The jumps that we perform with floating point comparisions are also different. Here we donot perform **JGE**, or **JGT**, etc... We instead use instructions **JB**(**J**ump **B**elow), **JA**(**J**ump **A**bove).

There are many jump instructions:

- **JE <label> → if op1 == op2**
- **JNE <label> → if op1 ! = op2**
- **JB <label> → if op1 < op2**
- **JBE <label> → if op1 ≤ op2**
- **JA <label> → if op1 > op2**
- **JAE <label> → if op1 ≥ op2**

Source: Click here.

But we can still use the **JMP** instruction which jumps to a label unconditionally.