ENGINEERING FLOWCHART

DOES IT MOVE?

NO

SHOULD IT?

NO

NO

NO PROBLEM

YES

NO PROBLEM

YES

SHOULD IT?

YES

SHOULD IT?

NO
Calculate the absolute value

1. **is x < 0?**
   - **yes**: multiply x by -1
   - **no**: return x
def absolute(x):
    if x < 0:
        x = x * -1
    return x
A condition is any Boolean expression. i.e., it evaluates to either **True** or **False**.

Like functions, conditional statements form **blocks** using colons and indentation. All statements within the block are executed if the condition is true.
def absolute(x):
    if x < 0:
        return -x
    else:
        return x
is score $\geq 90$?  
   yes: return 'A'  
   no:   
          is score $\geq 80$?  
             yes: return 'B'  
             no:   
                    is score $\geq 70$?  
                       yes: return 'C'  
                       no:   
                              is score $\geq 60$?  
                                 yes: return 'D'  
                                 no:   
                                         return 'F'
def assignGrade(score):
    if score >= 90:
        return 'A'
    else:
        if score >= 80:
            return 'B'
        else:
            if score >= 70:
                return 'C'
            else:
                if score >= 60:
                    return 'D'
                else:
                    return 'F'
def assignGrade(score):
    if score >= 90:
        return 'A'
    elif score >= 80:
        return 'B'
    elif score >= 70:
        return 'C'
    elif score >= 60:
        return 'D'
    else:
        return 'F'

*elif* is just short of *else if*. It is a way to eliminate excessive indentation of nested conditions