Conditionals

CS 101 - Spring 2018
Calculate the absolute value

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'

# Flowchart diagram
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.