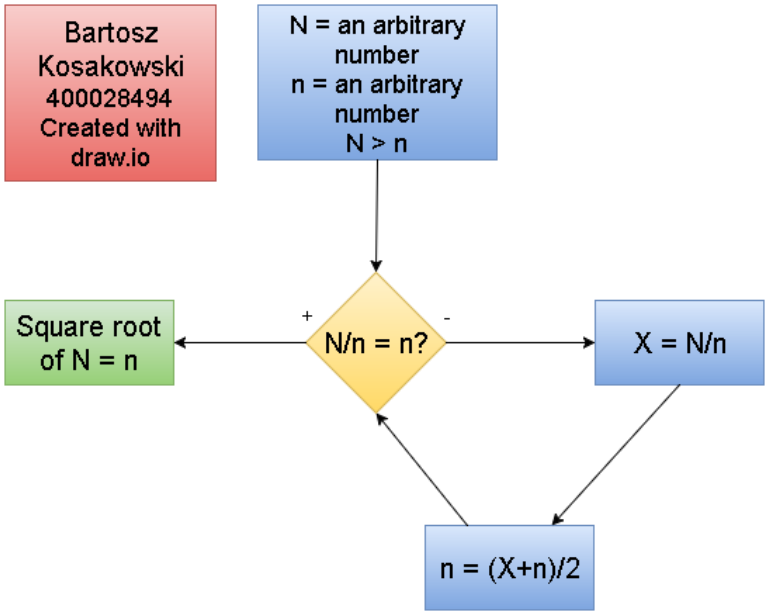
Comp Sci 1MD3 – Lab 1

1. 3**2 = 9
   2**2**3 = 256
   2**3**2**2 = 241785163922925834941235 2
   Given these results, exponentiation in Python is right associative because 2**(3**(2**2)) produces the same answer as 2**3**2**2, whereas ((2**3)**2)**2 produces 4096.
2. Exponentiation binds tighter than multiplication; 2*3**4 = 2*(3**4) = 162, but (2*3)**4 results in 1296.
3. a = 4, b = 8, c = 7
   s = (a+b+c)/2
   A = (s*(s-a)*(s-b)*(s-c))**(0.5)
4. Euclid's algorithm produces the lowest common denominator of two positive integers, which is also a positive integer.
5. If the square root of a number N is n, and one divides N by n to produce a quotient X, then the average of X and n is an estimate of the real square root of N, which can be repeated to produce more a more accurate result.



6.

INSTRUCTION	U VALUE	V VALUE
1	117	63
2.1	54	63
2.2	54	9
2.1	45	9
2.1	36	9
2.1	27	9
2.1	18	9
2.1	9	9

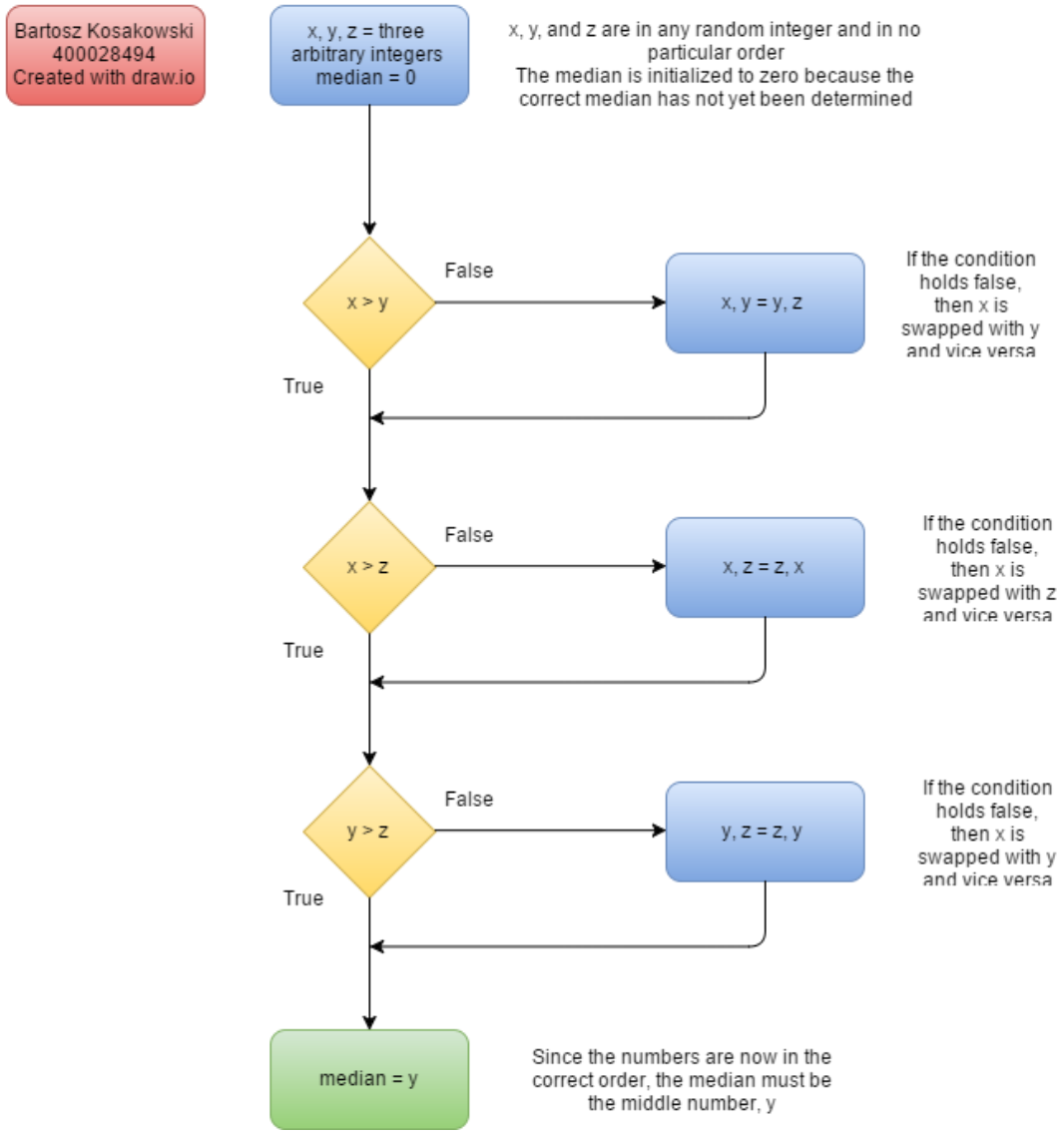
7. a)

ASSIGNMENT	ITERATION	Min VALUE	Max VALUE	i VALUE
A	0	1	1	1
C, D	1	1	9	2
D	2	1	9	3
D	3	1	9	4
----------	4	1	9	4

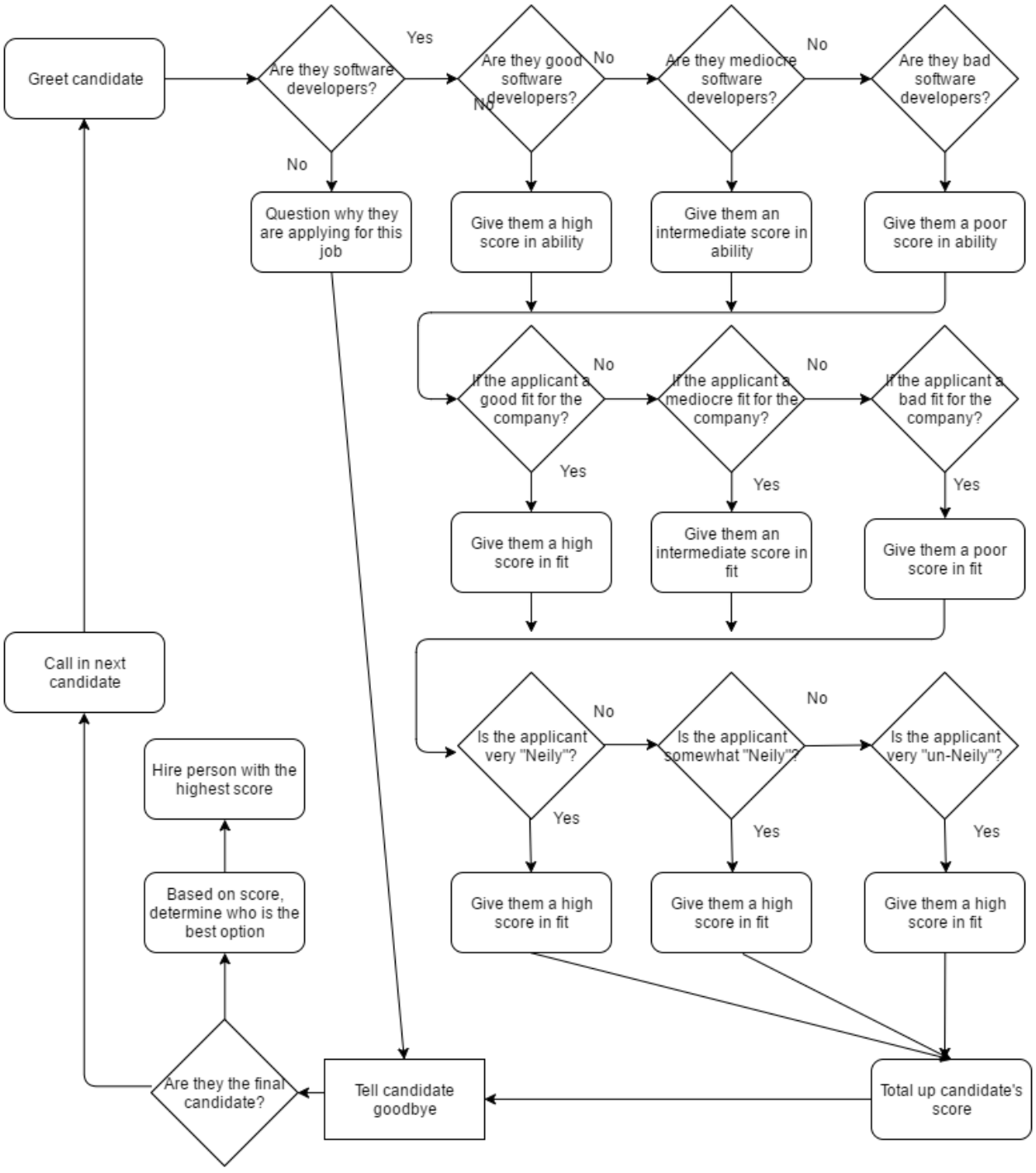
b) There are a total of two assignments to the max and min: when the variables are all initialized in A, and then when max is assigned to 9 in C.

c) In the best case scenario, there would be only one assignments to max and min; this would be when all temperatures are 1 since it would not be necessary to reassign max and min

8.



9.


Greet candidate
Are they software developers?
Yes
No
Are they good software developers?
No
No
Are they mediocre software developers?
No
Are they bad software developers?
Question why they are applying for this job
Give them a high score in ability
Give them an intermediate score in ability
Give them a poor score in ability
If the applicant a good fit for the company?
No
If the applicant a mediocre fit for the company?
No
If the applicant a bad fit for the company?
Yes
Yes
Yes
Give them a high score in fit
Give them an intermediate score in fit
Give them a poor score in fit
Is the applicant very "Neily"?
No
Is the applicant somewhat "Neily"?
No
Is the applicant very "un-Neily"?
Yes
Yes
Yes
Give them a high score in fit
Give them a high score in fit
Give them a high score in fit
Call in next candidate
Hire person with the highest score
Based on score, determine who is the best option
Are they the final candidate?
Tell candidate goodbye
Total up candidate's score