

ENGR141 Grade Report: Python 2 PA			
Name	Kathryn Atherton	Total Points Earned	5.0
Team	59	Total Points Possible	20
Grader	Casey Schilling	Percentage Earned	25%

Grading System Message(s)		Individual Assignment Grade		
Does flow diagram:		Pass	Part	Fail
Follow correct formatting shapes?		0	NA	-0.5
Follow flow diagram language independence?		0	NA	-0.5
Logically solve the given problem?		1	1	0
Subtotal		1	of	2

Does the program:		Pass	Part	Fail
Have correct filename?		0	NA	-0.5
Run without error?		0	NA	-2
No code standard issues?		0	0.5	-1
Conditionally check $N1 > N2$ ?		1	0.5	0
Calculate critical angle if $N1 > N2$ ?		1	0.5	0
Conditionally check if the angle of incidence ( $A1$ ) $\geq$ critical angle ( $Ac$ )?		1	0.5	0
Calculate refraction angle if $A1 \geq Ac$ ?		1	0.5	0
Calculate ending distance if $A1 \geq Ac$ ?		1	0.5	0
Correctly output errors if $N1 < N2$ or $A1 < Ac$ ?		1	0.5	0
Subtotal		0.5	of	6

Test Case 1: In PDF				
Input	Output	Pass	Part	Fail
$\theta_1=48^\circ$  Hardcoded Values: $n_1=1.26$ , $n_2=1.33$ , $d_1=1.0$ cm, $d_2=1.0$ cm.	There is refraction with a leaving angle of 44.8 degrees The ending distance for the light ray is 2.1 cm For these two media, the critical angle is impossible to compute	0.5	NA	0

Test Case 2: In PDF				
Input	Output	Pass	Part	Fail
$\theta_1=40^\circ$  Hardcoded Values: $n_1=1.90$ , $n_2=1.05$ , $d_1=1.25$ cm, $d_2=2.3$ cm.	Error: there is no refraction in the second media. The ending distance cannot be computed. (For these two media, the critical angle is ' 33.5, ' degrees)	0.5	NA	0

Test Case 3				
Input	Output	Pass	Part	Fail
20	There is refraction with a leaving angle of 26.6 degrees The ending distance for the light ray is 5.7 cm For these two media, the critical angle is 49.9 degrees	1	0.5	0
Subtotal		0	of	2

Task 2					
Does flow diagram:			Pass	Part	Fail
Follow correct formatting shapes?			0	NA	-0.5
Follow flow diagram language independence?			0	NA	-0.5
Logically solve the given problem?			2	1	0
Subtotal			###	of 2	

Does the program:		Pass	Part	Fail
Have correct filename?		0	NA	-0.5
Have no code standard issues?		0	NA	-1
Check if denominators of fractions will be zero, and if so, outputs an error?		0.5	NA	0
Conditionally check if the initial pressure is less than 1.1?		1	0.5	0
Conditionally check if the initial pressure is greater than 1.2?		1	0.5	0
Calculate a desired temperature change based on a pressure within the desired range?		2	1.0	0
Use the smallest temperature change value possible?		0.5	NA	0
Use functions to calculate the desired temperature and change in temperature?		1	0.5	0
Subtotal		2.5	of	6

Test Case 1				
Input	Output	Pass	Part	Fail
$T=300$ K  Hardcoded Values: $V=18$ L / mol $a=6.49$ $L^2\text{-atm} /$ $[\text{mol}]^2$ $b=0.0562$ L / mol.	Initial conditions: Volume = 18.0 L/mol Initial temperature = 300.0 K Parameter a = 6.49 L <sup>2</sup> /mol <sup>2</sup> Parameter b = 0.0562 L / mol Resulting pressure = 1.35 atm Required temperature increment for in-range pressure = -33.2 K New temperature = 266.8 K New pressure = 1.2 atm	2	1	0
Subtotal		-	of	2
Total		5 of 20		

Grader Comments	
<p>Flowcharts: Your logic was alright for both Task 1 and Task 2 flowchart. However, the level of detail wasn't detailed enough. For instance, Task 1 you have process blocks that just say things like find <math>\theta_c</math>. A proper flowchart should include the equation to find <math>\theta_c</math>. In addition, you should include the error checking processes and all decisions like how, in Task 2, you intend to decide the smallest magnitude adjustment for T.</p>	◀
<p>Task 1: Always ensure that you are correctly checking for all expected errors as well ensuring your program runs with basic inputs through the Python3 environment. An error occurred when our scripts ran it due to incompatible variable types (floats vs. other). This may not happen when you run it, in which case you could redress for potential points back. Also watch line length and commenting your code.</p>	
<p>Task 2: One of the biggest issues of our Task 2 code is that you programmed your functions really well, but in your main code you run the programs without saving the returned values from the function. For example, for your pressure all you have is <code>pressure("inputs")</code> but for it to return the pressure you need a line more like <code>p = pressure("inputs")</code>. Also comment your code here.</p>	