

Assignment 1: Python Basics

Winter Code Camp

DUE: December 26, 2020, 11:59PM

At the beginning of each python program, please include comments indicating your name and your student number

Example:

```
# Animesh Sarker  
# 105184718
```

Please submit this assignment as a **single zip file** called FIRSTNAME_LASTNAME_assignment1.zip.

1. Write a python program that takes in a floating point temperature from the user in celsius and converts it to fahrenheit (Reminder: to convert from celsius to fahrenheit, multiply by $\frac{9}{5}$, and add 32) [10 marks]

Sample input: 20.4

Sample output: 20.4 C = 68.72 F

Save file as basicAssign1.py

2. Write a python program to get a grade from the user. The program should output what their respective letter grade is. [15 marks]

Letter	Range
A	80-100
B	70-79
C	60-69
D	50-59
F	0-49

Sample input: 90

Sample output: Your grade is A

Sample input: 49

Sample output: Your grade is F

Save file as basicAssign2.py

3. Write a python program that will ask the user to guess a number from 1-9. Then generate a random number and tell the user if they guessed correct. [20 marks]

Sample input: 7

Sample output: Incorrect. The correct number was 4

Save file as basicAssign3.py

4. Write a python program that takes in a 3 digit number from the user and adds all the digits. (Hint: use the % operator). *You must use integer operations, not strings.* [25 marks]

Sample input: 123

Sample output: 6

Explanation: $1 + 2 + 3 = 6$

Save file as basicAssign4.py

5. Write a program that will accept the x and y coordinates of two points on a line. Then take in another coordinate and test whether it's on the line or not. Remember, the equation of a line is $y = mx + b$ (or equivalently $b = y - mx$) and slope is $m = (y_2 - y_1)/(x_2 - x_1)$. [30 marks]

Sample input:

Enter two points on a line:

x1: 0

y1: 2

x2: 2

y2: 6

Enter a point:

j: 5

k: 8

Sample output: The point (5,8) is NOT on the line $y=2*x+2$

Save file as basicAssign5.py