Assignment 1

Total: 35pts

Part A - Write Code! (5pts)

For each item below, determine the appropriate Python code to generate the desired output.

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1) Display your name and student ID to the console.

In [1]:

```
print("Yong Seung Rho W0447442")
```

```
Yong Seung Rho W0447442
```

Jane Doe W0123456

---

2) Create a variable, called **num**, to hold the integer value, **10**. Then, display the contents of the variable.

In [2]:

```
num = 10
print(num)
```

```
10
```

10

---

3) Create a variable to hold the name of your favourite TV character. Then, use string concatenation to display the message "My favourite TV star is: " with the variable contents appended. (e.g. "My favourite TV star is: Homer Simpson")

In [16]:

```
name = "Paul Sun-Hyung Lee"
print("My favourite TV star is:", name)
```

```
My favourite TV star is: Paul Sun-Hyung Lee
```

My favourite TV star is: Homer Simpson

4) Display Santa Clause's catch phrase (Ho Ho Ho) using the string replication operator.

In [4]:

```
print("Ho " * 3)
```

```
Ho Ho Ho
```

Ho Ho Ho

5) Create the Python statement to calculate the following mathematical expression: $2 + 3 \times 4 - 6 \div 3$

In [3]:

```
# print(2 + 3 * 4 - 6 / 3)
print("%d" % (2 + 3 * 4 - 6 / 3))
```

```
12
```

12

Part B - Fix the Error! (15pts)

Listed below are several snippets of code that contain small errors. For each of the questions, **correct the error** so the code will generate the desired output.

6) Display a string of text on the screen.

In [12]:

```
# print "This is a story about a man named Jed."
print ("This is a story about a man named Jed.")
```

```
This is a story about a man named Jed.
```

This is a story about a man named Jed.

7) Concatenate a string and a decimal number.

In [19]:

```
# print("PI =" + 3.14159)
print("PI = {0}".format(3.14159))
```

```
PI = 3.14159
```

PI = 3.14159

---

8) Print a calculation.

In [17]:

```
#print("1 + 2")
print(1 + 2)
```

```
3
```

3

---

9) Print a string and a calculation.

In [22]:

```
# print("3 cubed =", 3 * 3)
print("3 cubed =", 3 ** 3)
```

```
3 cubed = 27
```

3 cubed = 27

---

10) Display a name in the format *<last name>, <first name>*

In [24]:

```
# print("{0}, {1}".format("John", "Smith"))
print("{1}, {0}".format("John", "Smith"))
```

```
Smith, John
```

Smith, John

11) Display the answer of an integer division and the remainder. There should not be any decimal points displayed.

In [6]:

```
# print("13 / 5 =", 13/5, "remainder", 13/5)
print("13 / 5 =", int(13 / 5), "remainder", 13 % 5)
```

```
13 / 5 = 2 remainder 3
```

13 / 5 = 2 remainder 3

12) Use two print statements that display on the same line.

In [37]:

```
# print("This is on ")
# print("the same line.")
print("This is on", "the same line.")
```

```
This is on the same line.
```

This is on the same line.

13) Concatentate the string with the addition.

In [10]:

```
#print("1 + 2 =" + 1 + 2)
print("1 + 2 = " + str(1 + 2))
```

```
1 + 2 =3
```

1 + 2 = 3

14) Concatentate the string with the integer.

In [15]:

```
#print("Number = " + int(99))
print("Number = " +  str(99))
```

```
Number = 99
```

Number = 99

---

15) Use a single print statement to print on multiple lines.

In [50]:

```
# print("This is on multiple lines.")
print("This₩nis₩non₩nmultiple₩nlines.")
```

```
This
is
on
multiple
lines.
```

This is on multiple lines.

---

16) Comment out the first line.

In [49]:

```
# print("This is just a comment.")
print("You should only see this line.")
```

```
You should only see this line.
```

You should only see this line.

---

17) Make some ASCII art!

In [52]:

```
#print(".     . W O /  - -   |   ^  / W -   -")
print(".     .Wn W O / Wn  - -  Wn   |   Wn   ^   Wn  / W   Wn -   -")
```

```
.     .
 W O /
  - -
   |
   ^
  / W
 -   -



    .     .
     W O /
      - -
       |
       ^
      / W
     -   -
```

---

18) A couple of problems here....

In [56]:

```
# print("Something's [] right ".format("not") - "here.")
print("Something's {0} right".format("not"),"here.")
```

```
Something's not right here.
```

Something's not right here.

---

19) Add the contents of variables to a string using the old '%' method.

In [80]:

```
name = "John Smith"
age = 50
# print('%s is %s years old.')
print("%s is %s years old." % (name, age))
```

```
John Smith is 50 years old.
```

John Smith is 50 years old.

20) Add the contents of variables to a string using the cool new 'f-strings'.

In [83]:

```
name = "John Smith"
age = 50
# print('{name} is {age} years old.')
print(f'{name} is {age} years old.')
```

```
John Smith is 50 years old.
```

John Smith is 50 years old.

Part C - Math (15pts)

Create a Python program that calculates the roots of a quadratic equation using the equation,
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$.

You can assume that the equations used will always have two defined roots. (i.e. $a \neq 0$)

The program should allow the user to input the three variables of the formula, a, b, and c, and then output the resulting roots.

Example:

```
~ » python src/python/PROG1700/Assignment1/quadratic_roots.py
Enter the values of a, b, and c for the equation 'ax² + bx + c = 0'
a: 2
b: -8
c: 4
The two roots of the quadratic formula are: 3.41421356237 and 0.585
```