**Programming Exercises**

1. Check the version of Python

Python –version

1. variant= 45

print (Float(varint))

1. a=23

b=123.67

c=”Hello Welcome”

d=[1,2,3]

e={“a”:23}

f=(4,5,6)

print(type(a),type(b),type(c),type(d),type(e),type(f)

1. Create a new Pycharm project called section1 and save it in the folder “pythonProjects” on the desktop.
2. Create a new Python file within the project section1 called variablesAndDataTypes.py
3. Copy the code below these instructions and paste it into the file "variablesAndDataTypes.py"
4. Change 9variableNamesCannotBeginWithANumber to a valid variable name by removing 1 character. Then, assign it the value True.
5. Create a variable called boolean and assign it a different Boolean value than the Boolean

value we assigned to the variable from step 1.

1. Create a variable called posInt and assign it a positive integer value

create a variable called zero and assign it the value 0 .

1. Create a variable called negFloat and assign it a negative decimal number value
2. Reassign a value to the variable called initial 9 variableNamesCannotBeginWithANumber

initial = 3

1. Write a program to calculate the square of a number
2. Write a program to calculate the area of a triangle by accepting the values of the sides a,b,c
3. Write a program to swap the values of two variables
4. In the Pycharm project called section1 create a new Python file called commentsAndMathOperators.py

copy the code on below this and paste it into

commentsAndMathOperators.py

"""

comments practice:

create a single line comment

create a multiple line comment

"""

# enter your code for "comments practice" between this line and the line below it--------- ------------------------------

# ----------------------------------------------------------------------------------------------------------------------

"""

basic mathematical operators practice:

17. Create a variable called add and assign it the sum of two numbers

18. Create a variable called sub and assign it the difference of two numbers

19. Create a variable called mult and assign it the product of two numbers

20. Create a variable called div and assign it the quotient of two numbers

21. Create a variable called power and assign it the value of a number raised to a power

22. Create a variable called mod and assign it the remainder of a quotient

"""

# enter your code for "basic mathematical operators practice" between this line the line below

it-----------------------

# ----------------------------------------------------------------------------------------------------------------------

"""

modulo practice:

22. Create a variable called mod1 and assign it the result of 7 % 5

23. Create a variable called mod2 and assign it the result of 16 % 6

24. Create a variable called mod3 and assign it the result of 4 % 3

"""

25. # enter your code for "modulo practice" between this line and the line below it------------

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# ----------------------------------------------------------------------------------------------------------------------

"""

order of operations practice:

26. Create and assign a variable called ordOp1 the result of 7 + 6 + 9 - 4 \* ((9 - 2) \*\* 2) / 7

27. Create and assign a variable called ordOp2 the result of (6 % 4 \* (7 + (7 + 2) \* 3)) \*\* 2

"""

28. # enter your code for "order of operations practice" between this line and the line

below it----------------------------

# ----------------------------------------------------------------------------------------------------------------------

29. Write a program to check if the number is zero , positive or negative .

30. Execute the above program by accepting a number using input function using nested if statements

31. Check if the number is odd or even

32. Write a program to display the table of a number 4

33. For this problem you are going to make a program that simulates the output of a vending machine that only takes in coins of American currency.

Your program should take an integer as an input from the user (either a 1, 2, or 3) that corresponds with an option for a drink from the vending machine outlined below and assign the corresponding price to a variable as a float. Use your knowledge of if, elif, and else statements to complete this part of the problem. Your code should have an else statement that prints a message and ends the program using sys.exit() if the user does not enter a valid input number.

Vending Machine:

1.water = $1.00

2.cola = $1.50

3.gatorade = $2.00

2.After placing an order, the user should be prompted to enter inputs 4 times:

1.The first time, the user should be prompted to enter the number of quarters they put in the machine. Assign this number to a variable as an integer.

2.The second time, the user should be prompted to enter the number of dimes they put in the machine. Assign this number to a variable as an integer.

3.The third time, the user should be prompted to enter the number of nickles they put in the machine. Assign this number to a variable as an integer.

4.The fourth time, the user should be prompted to enter the number of pennies they put in the machine. Assign this number to a variable as an integer.

3.Create a variable to hold the total value of all the coins the user has put into the machine.

4.Use flow control statements to print the user's change or output a message asking the user to try again depending on whether the total value of the coins the user has put into the machine is enough to pay for the item they ordered. New knowledge for this problem: 1.%f format specifier 2.import sys and sys.exit() 3.int() """