**Mission 8.3: Inputs and Variables**

I. Situation:

1. Variables
2. In computer programs, there are several types of variables which can be defined with “=”, including:
   1. Integers (e.g. “2”)
   2. floats
   3. Strings

counter = 100 # An integer assignment

miles = 1000.0 # A floating point

name = "John" # A string

print counter

print miles

print name

Here, 100, 1000.0 and "John" are the values assigned to *counter*, *miles*, and *name* variables, respectively. This produces the following result −

100

1000.0

John

1. Python Function: input
   1. Syntax: variable = input (“input prompt text”)
      1. The input function will set the value of the variable “variable” to whatever the user enters. It will be recorded as a string.
      2. The “input prompt text” in the syntax above will be printed to the screen when the program runs.
2. Python Function: int() and float()
   1. Syntax: int(variable) or float()
      1. These functions will make sure you have the expected type of variable. If the variable value doesn’t match what the function requests, an error will occur.
3. Python Mathematical functions (incomplete list; where a and b are variables)

a+b addition a-b subtraction

a\*b multiplication a/b division

a//b floor division a%b modulo

-a invert sign abs (a) absolute value

a\*\*b ab

II. Mission:

1. Your team must write, run, save, and share a program in Python that uses the input function to assign values to a string variable, integer variables, and float variables. The program will perform a mathematical functions on the integer and float variables.
2. Open IDLE3 in the XFCE OS, and start writing some code.
3. First, use the input function to assign a value to the variable “name”.
4. Use the print function to print a greeting. Use commas “,” to separate print arguments.

Example code: print (“Hi, “, name, “. Do whatcha wanna do.”)

Output: Hi, “*name*”. Do whatcha wanna do.

1. Run your program and save it as XXXXXMission3 in the downloads folder. PUT A COPY OF YOUR CODE INTO YOUR WORK PRODUCTS FOLDER
2. Now, use the input function nested within the int function to get an integer input

Example code: integer1 = int(input(“Please enter the first integer”))

1. Repeat to get a second integer input
2. Now, perform some mathematical function with the variables and print the result

Example code: print (integer1, “x”, integer2, “=”, integer1\*integer2)

1. Run your program and save it as XXXXXMission3 in the downloads folder. PUT A COPY OF YOUR CODE INTO YOUR WORK PRODUCTS FOLDER
2. Now, add additional lines to your code that are just like steps 5-7, except use the float function instead of the int function
3. Run your program and save it as XXXXXMission3 in the downloads folder. PUT A COPY OF YOUR CODE INTO YOUR WORK PRODUCTS FOLDER
4. Run your program a few times and see what happens if you enter the wrong kind of input.

Command & Signal

1.  This mission will almost certainly require several class periods to complete. Therefore, be sure to save a copy of your code as a .py file to your team Work Products folder when called for by the mission procedure above.
2. Upon successful completion and demonstration, your team will be awarded the following badge: