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Laboratory 2 - HW

Laboratory 2: First Steps ...

Medrano, Giovanni

R11521018

ENGR 1330 Laboratory 2 - Homework

Notice the code cell below! From this notebook forward please include and run the script in the cell, it will help in debugging a notebook. Its ok if the code makes no sense right now - mostly the cell executes system commands. As you change machines, and rerun the cell the output will change (its supposed to!)

In [37]:
```
# Preamble script block to identify host, user, and kernel
import sys
! hostname
! whoami
print(sys.executable)
print(sys.version)
print(sys.version_info)
```

```
DESKTOP-6HAS1BN
desktop-6has1bn\medra
C:\Users\medra\anaconda3\python.exe
3.8.5 (default, Sep  3 2020, 21:29:08) [MSC v.1916 64 bit (AMD64)]
sys.version_info(major=3, minor=8, micro=5, releaselevel='final', serial=0)
```

Exercise 1

The cell below is type RAW, change it into a code cell and activate (suppress the comments) and run the script.

What is the value of area?

In [38]:
```
# Demonstrate some assignment operations
#width = 4
#length := width
#length += 2
# area = length * width
```

Copy your working script below and add necessary code to output the value of area.

In [39]:
```
# copy here
# Demonstrate some assignment operations
width = 4
length = width
length += 2
```

```
area = length * width
print(area)
```

```
24
```

Exercise 2

Change the RAW cell below into a Code cell, and run the script (fix any syntax errors)

In [40]:
```
# data types
print ('integers and reals')
x1 = 1.0
y1 = 1.
z1 = 1
x2 = 5.0
y2 = 5.
z2 = 5
print ('x1 = ', x1, ' y1 = ', y1, ' z1 = ', z1)
print ('x2 = ', x2, ' y2 = ', y2, ' z2 = ', z2)
print ('x1/x2 = ',x1/x2,' y1/y2 = ',y1/y2,' z1/z2 = ',z1//z2)
print(type(x1))
print(type(y1))
```

```
integers and reals
x1 =  1.0  y1 =  1.0  z1 =  1
x2 =  5.0  y2 =  5.0  z2 =  5
x1/x2 =  0.2  y1/y2 =  0.2  z1/z2 =  0
<class 'float'>
<class 'float'>
```

a. Of the six variables, which are integers?

put your answer here

z1 and z2 are the only integers.

b. What is the difference (in effect) between x1=1.0 and y1=1.?

put your answer here

x1= 1.0 is a float and y1=1. is also a float. Python will annex a 0 to 1. to have the same result as 1.0. They are both floats so there is no real difference in how they work

c. Examine the division results; Why does z1//z2 return a value of 0?

put your answer here

It is doing integer division and since z2 doesn't got into z1 evenly at all then it will return zero since its 1//5 means how many times does 5 divide into 1? None, which means it is 0.

Exercise 3

Exploring arithmetic. First define three variables a,b, and c.

In [41]:
```
# change this cell to CODE to run
a = 21
b = 10
c = 0
```

Then change the cell below to code and run it.

In [42]:
```
# change this cell to CODE to run
c = a + b
print ("Value of c is ", c)
```

```
Value of c is  31
```

Now using the example in the cell above, exaluate the following expressions in the indicated cells below:

In [43]:
```
c = a - b
print ("Value of c is ", c)
```

```
Value of c is  11
```

In [44]:
```
c = a * b
print ("Value of c is ", c)
```

```
Value of c is  210
```

In [45]:
```
c = a / b
print ("Value of c is ", c)
```

```
Value of c is  2.1
```

In [46]:
```
c = a % b
print ("Value of c is ", c)
```

```
Value of c is  1
```

In [47]:
```
#a= 2, b = 3, c = a** b
a = 2
b = 3
c = a ** b
print ("Value of c is ", c)
```

```
Value of c is  8
```

In [48]:
```
#a = 10, b = 5, c = a//b
a = 10
b = 5
c = a//b
print ("Value of c is ", c)
```

```
Value of c is  2
```

In [ ]: