Assignment 1

1. Versions

In [4]:
```
from platform import python_version
import pandas as pd
import numpy as np
```

In [5]:
```
print("Python Version: ",python_version())
```

```
Python Version:  3.9.7
```

In [7]:
```
print("Pandas Version: ",pd.__version__)
print("Numpy Version: ",np.__version__)
```

```
Pandas Version:  1.3.4
Numpy Version:  1.20.3
```

2. Ints and Floats

In [10]:
```
p = 1000
i = .08
T = 40
def comp_interest(principle,interest,period):
    A = principle * (1 + interest) ** period
    return round(A,2)
print("Final Amount: $",comp_interest(p,i,T))
```

```
Final Amount: $ 21724.52
```

3.

In [11]:
```
#Defer to week 2
```

4. Booleans

In [14]:
```
cat_count = 1
dog_count = 2
has_dogs = dog_count > 0
has_cats = cat_count > 0
Happy_home1 = has_cats == True & has_dogs == False
Happy_home2 = has_cats == True | has_dogs == True
print("Happy Home 1: ",Happy_home1)
print("Happy Home 2: ",Happy_home2)
```

```
Happy Home 1:  False
Happy Home 2:  True
```

5. Lists

In [32]:
```
list_1 = [i for i in range(1,11)]
list_2 = [j for j in range(10,21)]

non_prime = [1,4,6,8,9,10,12,14,15,16,18,20]

for i in non_prime:
    if i in list_1:
        list_1.remove(i)
for i in non_prime:
    if i in list_2:
        list_2.remove(i)


list_1.append(list_2)
print("Appended List: ", list_1)


del list_1[4]
list_1.extend(list_2)
print("Extended List: ", list_1)
```

```
Appended List:  [2, 3, 5, 7, [11, 13, 17, 19]]
Extended List:  [2, 3, 5, 7, 11, 13, 17, 19]
```

6. Dictionaries

In [41]:
```
d1 = {'USD':1,'BTC':51013.93,'EUR':1.131735}
d1['CHF'] = .99
print("Swiss Franc :",d1['CHF'])


def currency_exchange(c1,c2,lookup):
    rate = lookup[c2]/lookup[c1]
    print(f"Exchange rate between {c1} and {c2} is: {round(rate,5)}")
currency_exchange('EUR','CHF',d1)

currency_exchange('CAD','EUR',d1)
```

```
Swiss Franc : 0.99
Exchange rate between EUR and CHF is: 0.87476
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_24544/1724641225.py in <module>
      9 currency_exchange('EUR','CHF',d1)
     10
---> 11 currency_exchange('CAD','EUR',d1)

~\AppData\Local\Temp/ipykernel_24544/1724641225.py in currency_exchange(c1, c2, lookup)
      5
      6 def currency_exchange(c1,c2,lookup):
----> 7     rate = lookup[c2]/lookup[c1]
      8     print(f"Exchange rate between {c1} and {c2} is: {round(rate,5)}")
      9 currency_exchange('EUR','CHF',d1)

KeyError: 'CAD'
```

7. Tuples

In [42]:
```
from math import sqrt
p1 = (5,12)
p2 = (3,10)
def magnitude(point):
    return sqrt(point[0]**2 + point[1]**2)
print(f"p1 magnitude is: {magnitude(p1)}")
print(f"p1 magnitude is: {magnitude(p2)}")
```

```
p1 magnitude is: 13.0
p1 magnitude is: 10.44030650891055
```