HOME WORK 1

Complete this section and turn in before the next class

1. Create an empty Python list called 'a'

In [ ]:
```
a=[]
```

2. Store all values between 1-100 with increments of 03 (w/o Numpy) in 'a'

In [ ]:
```
i=1
while i <= 100:
    a.append(i)
    i+=3

print(a)
```

3. Create a list called 'a2' with numbers fro 2-46 with 0.5 increments

In [ ]:
```
a2=[]

j=2
while j <= 46:
    a2.append(j)
    j+=0.5

print(a2)
```

4. Double every even integer element of list 'a' from #2

Store the results back in 'a'.

In [ ]:
```
for k in range(len(a)):
    if a[k] % 2 == 0:
        a[k]=a[k]*2

print(a)
```

5. Add all numbers in 'a' (except for the 2nd and the 21st element).

In [ ]:
```
sum_of_a = a[0]+ sum(a[2:20]) + sum(a[21:])
print(sum_of_a)
```

6. Calculate the mean of a

In [ ]:
```
sum_a=sum(a)
len_a=len(a)
mean_a=sum_a/len_a
print(mean_a)
```

LISTS AND STRINGS:

7. Create an empty list called b

In [ ]:
```
b=[]
```

8. In b store every word in the sentence as an element of its own.

sentence:'I am so excited about Data-X. It is important to be able to work with data.'

In [ ]:
```
sentence='I am so excited about Data-X. It is important to be able to work wit
h data.'

b = sentence.split()
print(b)
```

9. Count the occurences of the lower-case letter ’e’ in the list b.

In [ ]:
```
count=0
for c in range(len(b)):
    count+=b[c].count('e')
print(count)
```

10. Replace every lower- or upper-case letter ’i’ in the list b with a ’1’

In [ ]:
```
for r in range(len(b)):
    if 'i' or 'I' in b[r]:
        b[r]=b[r].replace('i','1')
        b[r]=b[r].replace('I','1')

print(b)
```

11. Append the string ”This is the end of the first HW” to the list b,

with every new word as an element of its own

In [ ]:
```
eofhw='This is the end of the first HW'
bb=eofhw.split()

for bc in range(len(bb)):
    b.append(bb[bc])


for c13 in range(len(b)):
    b[c13]=b[c13][::-1]

print(b)
```

12. Print b, as ONE string backwards (starting with ”WH tsrif ...”)

In [ ]:
```
sentence=''
for c14 in reversed(range(len(b))):
    sentence+=(b[c14]+' ')

print(sentence)
```

13. Put the following in a dictionary called 'codes':

Keys: 1001, 1002, 1003, 1004, 1005

Values: 'Alpa', Beta, 'Gamma, 'Delta', 'Tau'

then traverse the dictionary by keys and change every value to be all lower case

In [ ]:
```
dictionary={1001:'Alpha',1002:'Beta',1003:'Gamma',1004:'Delta',1005:'Tau'}

for key, value in dictionary.items():
    dictionary[key] = dictionary[key].lower()

print(dictionary)
```

14. Set A=(1,3,5,7,8,9) Set B=(2,5,30,10).

Find Union of A and B.

In [2]:
```
SetA=[1,3,5,7,8,9]
SetB=[2,5,30,10]

SetC=[]

for st in range(len(SetA)):
    if SetA[st] in SetB:
        SetC.append(SetA[st])

print(SetC)
```