In [1]:
```
#sol1
try:
    fp = open('abc.txt')    # Open the file in reading mode
    c=0
    vowels = ['a', 'e', 'i', 'o', 'u', 'A', 'E', 'I', 'O', 'U']

    for char in fp.read():
        if char in vowels:
            c = c + 1
    fp.close()

    print("\nTotal Vowels in the file are:")
    print(c)

except:
    print("Error!! No such file exist")
```

```
Total Vowels in the file are:
11
```

In [13]:
```
#sol2:
readFp = open('abc.txt')
writeFp = open('result.txt','w')

c = readFp.read()

for i in range(len(c)):
    if i % 2 == 0:
        writeFp.write(c[i])

print ("Writing done !! \nOpen result.txt to view the content")
writeFp.close()

writeFp = open('result.txt', 'r')
c1 = writeFp.read()
print(c1)

readFp.close()
writeFp.close()
```

```
Writing done !!
Open result.txt to view the content
Hlo ynm sAay gra.hehlohe
```

In [4]:
```
#sol 3:
readFp = open('abc.txt', 'r')
writeFp = open('result.txt', 'w')

c = readFp.readlines()

for i in range(0,len(c)):
    if(i % 2 == 0):
        writeFp.write(c[i])
    else:
        pass

print ("Writing done !! \nOpen result.txt to view the content")
writeFp.close()

#not necessary..can print the copied data here as well.
writeFp = open('result.txt', 'r')
c1 = writeFp.read()
print(c1)

readFp.close()
writeFp.close()
```

```
Writing done !!
Open result.txt to view the content
Hello! My name is Ananya Agarwal.
hello
```

In [17]:
```
#Sol 4:

readFp = open('abc.txt')
writeFp = open('result.txt','w')

c = readFp.readlines()

for i in range(len(c)):
    if (len(c[i]) > 50):
        writeFp.write(c[i])

print ("Writing done !! \nOpen result.txt to view the content")
writeFp.close()

#not necessary..can print the copied data here as well.
writeFp = open('result.txt', 'r')
c1 = writeFp.read()
print(c1)

readFp.close()
writeFp.close()
```

```
Writing done !!
Open result.txt to view the content
Hello! My name is Ananya Agarwaliiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii.
```

In [29]:
```
#Sol 5:

#import matplotlib.pyplot as plt

readFp = open('abc.txt')
c = readFp.read()

d={}
for i in c:
    if i in d.keys():
        d[i]+=1
    else:
        d[i]=1

print(d)

#plt.hist(d.values())
#plt.bar(d.keys(), d.values(), 1, color='r')
```

```
{'a': 5, 'b': 2, 'c': 2}
```

In [51]:
```
#Sol 6:

import pandas as pd
import math
df = pd.read_csv("E:/5th sem/Elective 1/lab/iris_copy.csv")

# Mean
n = len(df.iloc[:,1]) #1 means 2nd column since indexed by 0
get_sum = sum(df.iloc[:,1])
mean = get_sum / n
print('Mean: ',mean)

# Standard Deviation
var  = sum(pow(x-mean,2) for x in df.iloc[:,1]) / n  # variance
std_var  = math.sqrt(var)  # standard deviation
print('Standard deviation: ',std_var)

#Median
df.iloc[:,1].sort_values()

if n % 2 == 0:
    median1 = df.iloc[:,1][(n-1)//2]
    median2 = df.iloc[:,1][(n+1)//2]
    median = (median1 + median2)/2
else:
    median = df.iloc[:,1][n//2]

print('Median: ',median)
```

```
Mean:  3.0540000000000007
Standard deviation:  0.4321465800705435
Median:  2.95
```

In [3]:
```
#Sol 7:
import math
import pandas as pd
import numpy as np
df = pd.read_csv("E:/5th sem/Elective 1/lab/iris_copy.csv")


# Mean X
x = len(df.iloc[:,0])
get_sum_x = sum(df.iloc[:,0])
get_sum_x_sq1 = get_sum_x * get_sum_x;

# Mean Y
y = len(df.iloc[:,1])
get_sum_y = sum(df.iloc[:,1])
get_sum_y_sq1 = get_sum_y * get_sum_y;

df1 = pd.DataFrame({"a": df.iloc[:,0], "b": df.iloc[:,1]})

x_y = df1["a"] * df1["b"]
x_y_sum = sum(x_y)

x_sq = df1["a"]*df1["a"]

y_sq = df1["b"]*df1["b"]

get_sum_x_sq = sum(x_sq)

get_sum_y_sq = sum(y_sq)

r = ((x*x_y_sum) - (get_sum_x*get_sum_y))/(math.sqrt( ((x * get_sum_x_sq)-get_sum_x_sq1)*((x *get_sum_y_sq)-get_sum_y_sq

print(r)
import scipy.stats
u = scipy.stats.pearsonr(df.iloc[:,0], df.iloc[:,1])[0]
print(u)
```

```
-0.10936924995067286
-0.10936924995064935
```