Search

search.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/search.py (3.4.4)

File Edit Format Run Options Window Help

```
a=[]
n=int(input("Enter the length of array: "))
for _ in range(n):
    a.append(int(input("Enter the data: ")))

key=(int(input("Enter the data for searching: ")))
ind =a.index(key)
if ind !=-1:
    print("The index of key is: ", ind )
else:
    print("The key is not found")
```

Search

search.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/search.py (3.4.4)

File Edit Format Run Options Window Help

```
def linearSearch(x, k):
    for i in range(len(x)):
        if (x[i] == k):
            print("The key is found in position:", i)


a=[]
n=int(input("Enter the length of array: "))
for _ in range(n):
    a.append(int(input("Enter the data: ")))

key=(int(input("Enter the data for searching: ")))
linearSearch(a, key)
```

Search

search.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/search.py (3.4.4)

File Edit Format Run Options Window Help

```
def linearSearch(x, k):
    for i in range(len(x)):
        if (x[i] == k):
            print("The key is found in position:", i)
            break
    else:
        print("The key is not found")



a=[]
n=int(input("Enter the length of array: "))
for _ in range(n):
    a.append(int(input("Enter the data: ")))

key=(int(input("Enter the data for searching: ")))
linearSearch(a, key)
```

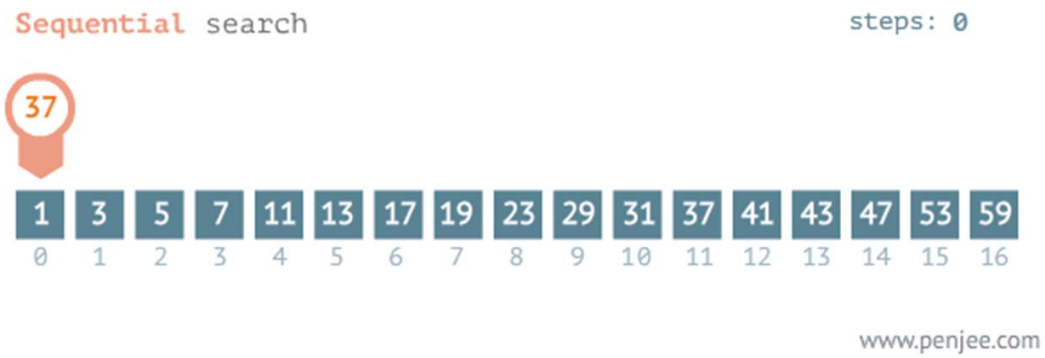
Search

search.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/search.py (3.4.4)

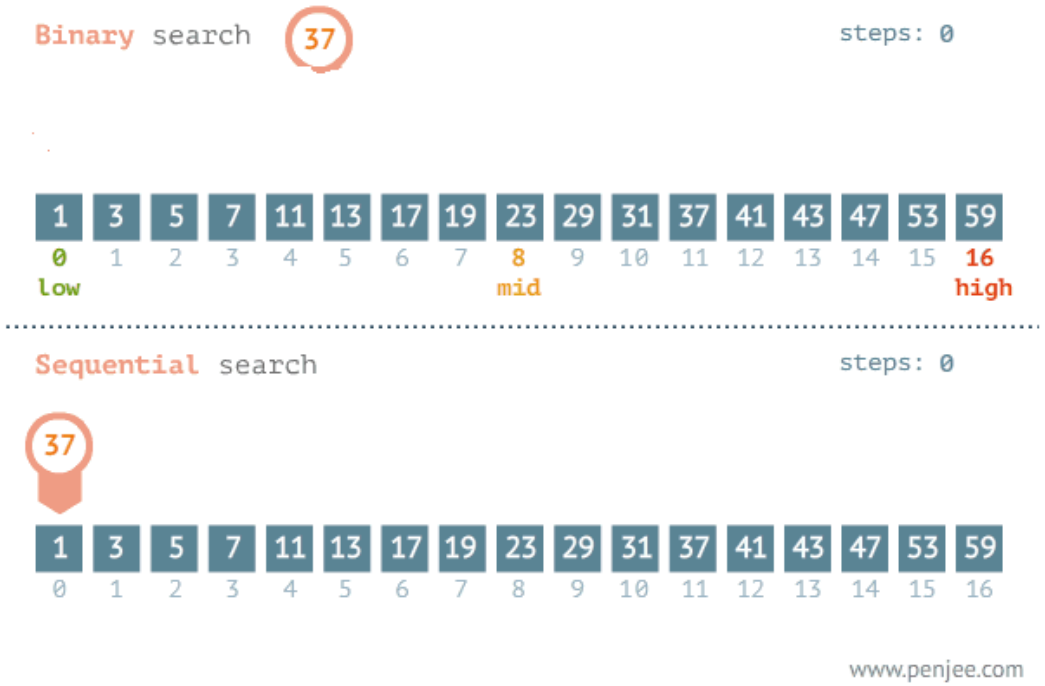
File Edit Format Run Options Window Help

```
def linearSearch(x, k):
    for i in range(len(x)):
        if (x[i] == k):
            return(i)
    return(-1)


a=[]
n=int(input("Enter the length of array: "))
for _ in range(n):
    a.append(int(input("Enter the data: ")))

key=(int(input("Enter the data for searching: ")))
index=linearSearch(a, key)
if index!=-1:
    print("The key is found in position:", index)
else:
    print("The key is not found")
```

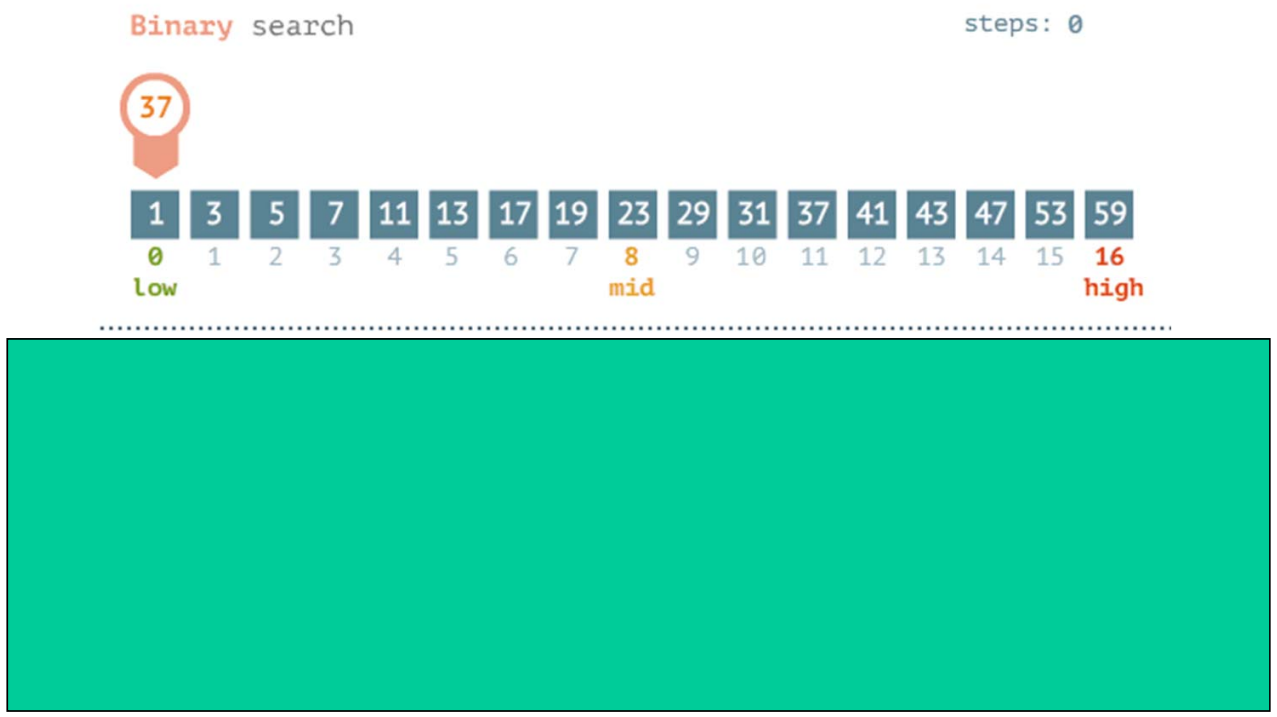
Sequential Search



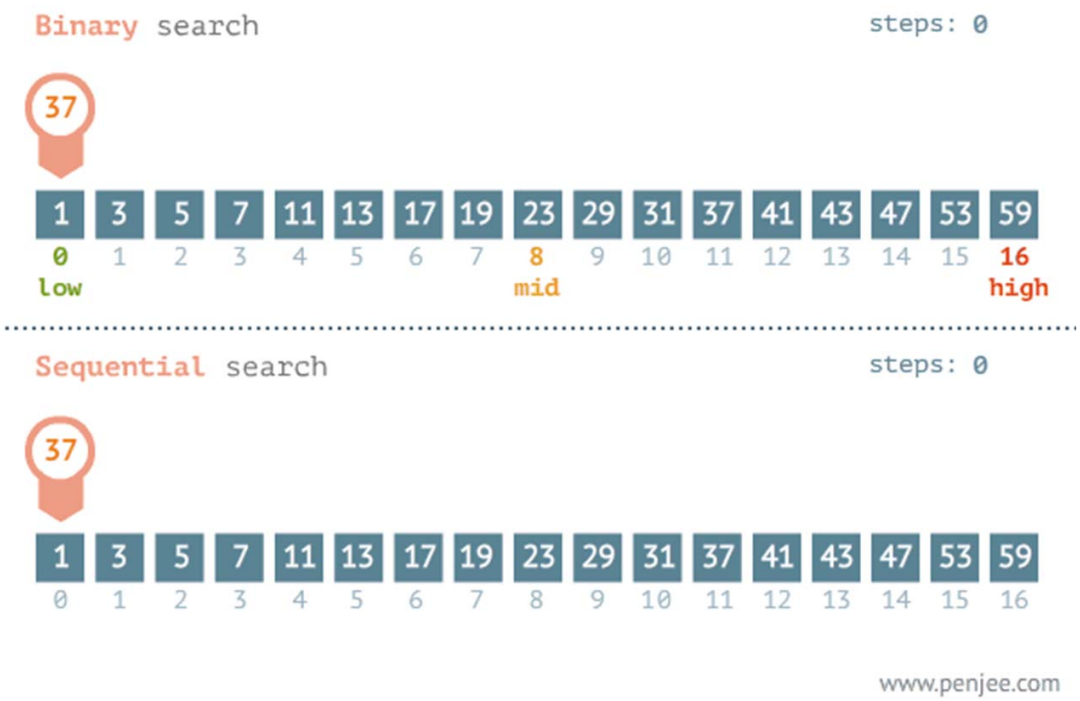
Binary Search



Binary Search



Binary Search



*binarysearch.py - /home/nowzari/Desktop/python/python-my/python/examples/15-for-ex1/binarysearch.

File Edit Format Run Options Window Help

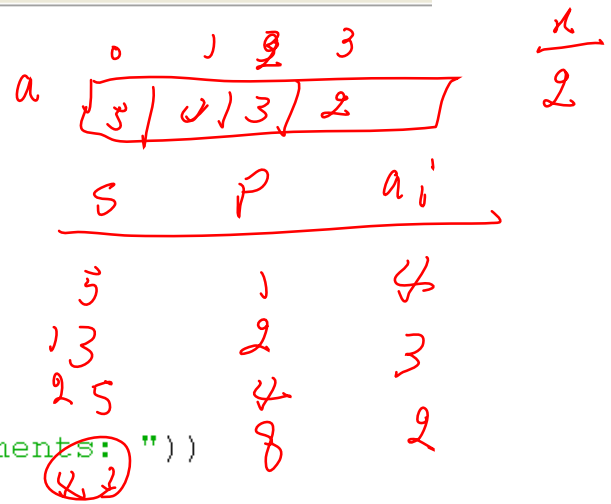
```
def binary search(a, k, lo=0, hi=None):
    if hi is None:
        hi = len(a)-1
    while lo <= hi:
        mid = (lo+hi)//2
        if (a[mid]==k):
            return mid
        elif a[mid] < k:
            lo = mid+1
        else:
            hi = mid -1

    return -1

a=[]
n=int(input("Enter the length of array: "))
for   in range(n):
    a.append(int(input("Enter the data: ")))

key=(int(input("Enter the data for searching: ")))
index=binary search(a, key, 0, len(a)-1)
if index!=-1:
    print("The key is found in position:", index)
else:
    print("The key is not found")
```

poly evaluation

eval1.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/eval1.py (3.4.4)

File Edit Format Run Options Window Help

```
#2x^3+3x^2+4x+5

def eval(a, x):
    p=1
    s=a[0]
    for ai in a[1:]:
        p=x*p
        s=s+(ai * p)
    return s

a=[]
n=int(input("Enter number of elements: "))
for _ in range(n):
    a.append(int(input("Enter the data: ")))

x=(int(input("Enter an integer: ")))
s=eval(a, x)
print("The result is: ", s)
```



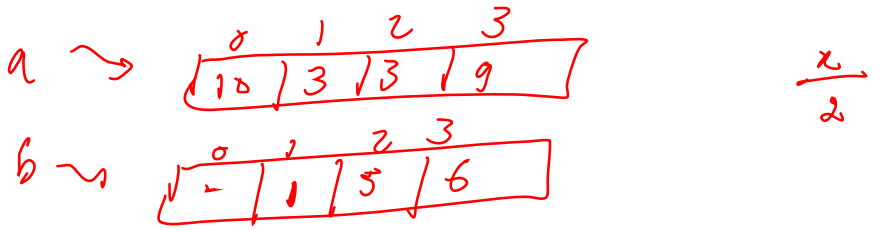
poly evaluation

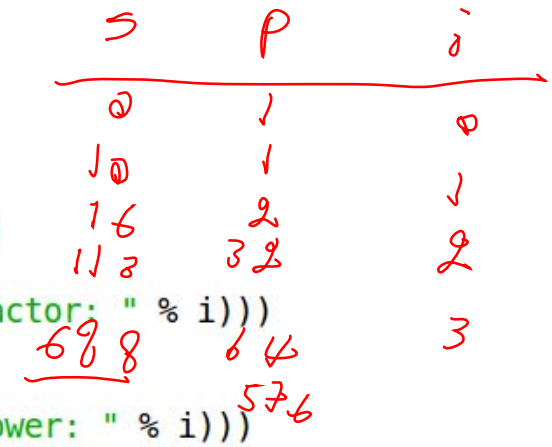
```
Enter number of elements: 4
Enter the data: 5
Enter the data: 4
Enter the data: 3
Enter the data: 2
Enter an integer: 3
The result is:  98
```

*eval2.py - /home/nowzari/Desktop/python/python-my/python/examples/15-for-ex1/eval2.py (3.5.2)

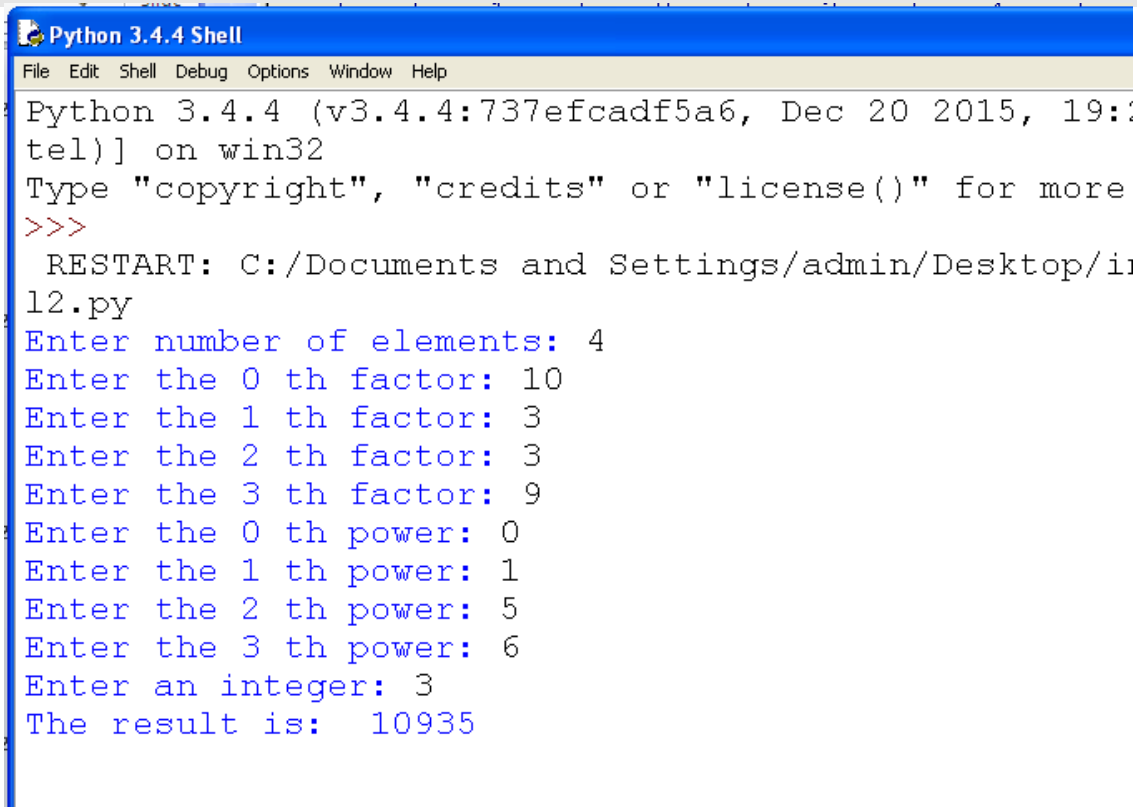
File Edit Format Run Options Window Help

```
#9x^6+3x^5+3x+10

def eval(a, b, x):
    p=1
    s=0
    for i in range(0,len(a)):
        p=x**b[i]
        s=s+(a[i] * p)
    return s


a=[]
b=[]
n=int(input("Enter number of elements: "))
for i in range(n):
    a.append(int(input("Enter the %d th factor: " % i)))

for i in range(n):
    b.append(int(input("Enter the %d th power: " % i)))

x=(int(input("Enter an integer: ")))
s=eval(a, b, x)
print("The result is: ", s)
```





poly evaluation

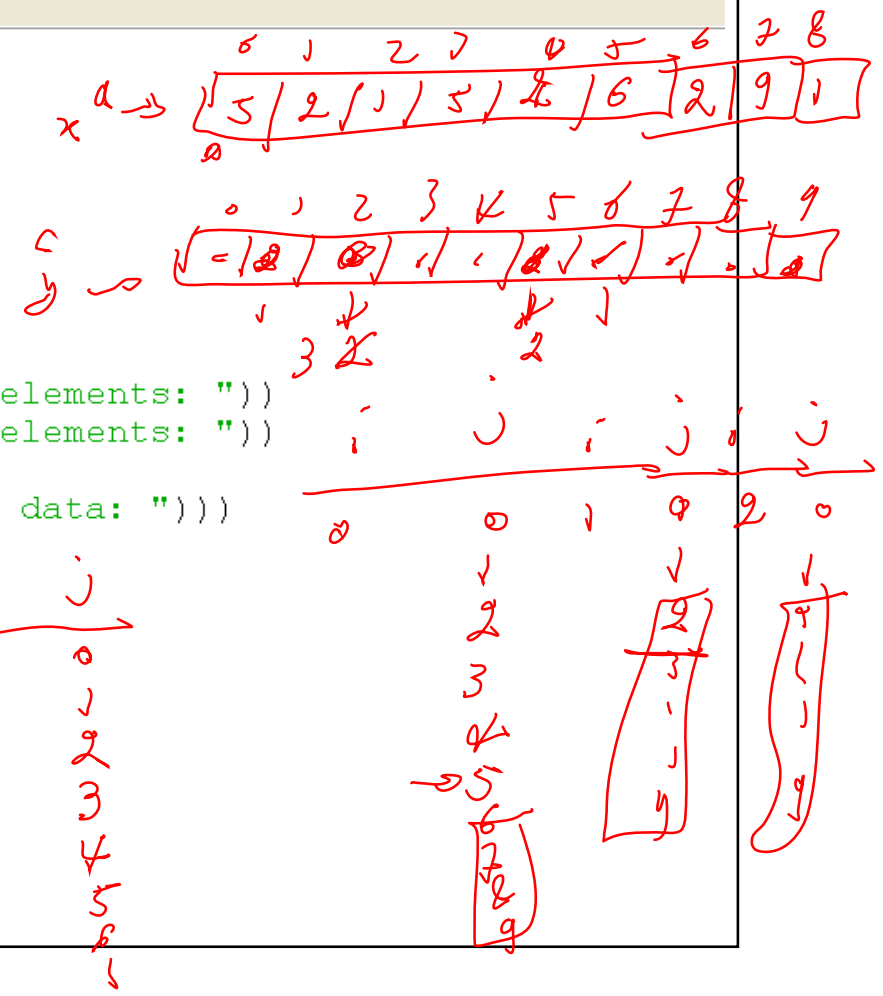


Counting

counting.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/counting.py (3.4.4)

File Edit Format Run Options Window Help

```
def countarray(x, y):
    for i in range(len(x)):
        for j in range(len(y)):
            if (x[i]==j):
                y[j]=y[j]+1
    return

a=[]
n=int(input("Enter the number of elements: "))
m=int(input("Enter the range  of elements: "))
for i in range(n):
    a.append(int(input("Enter the data: ")))
c=[0]*(m+1)
countarray(a, c)
print("The array is: ", a)
print("The result is: ", c)
```



Counting

```
Enter the number of elements: 10
Enter the range  of elements: 6
Enter the data: 6
Enter the data: 5
Enter the data: 6
Enter the data: 3
Enter the data: 1
Enter the data: 1
Enter the data: 2
Enter the data: 6
Enter the data: 5
Enter the data: 1
The array is:  [6, 5, 6, 3, 1, 1, 2, 6, 5, 1]
The result is:  [0, 3, 1, 1, 0, 2, 3]
```

counting.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/counting.py (3.4.4)

File Edit Format Run Options Window Help

```
def inputList(a, n):
    string=input("enter the data: ")
    prev = 0
    index = 0
    for item in string :
        if item == ' ' :
            a.append(int(string[prev:index]))
            prev = index + 1
        index=index+1
    else:
        a.append(int(string[prev:index]))
    return

def countarray(x, y):
    for i in range(len(x)):
        for j in range(len(y)):
            if (x[i]==j):
                y[j]=y[j]+1
    return

a=[]
n=int(input("Enter the number of elements: "))
m=int(input("Enter the range  of elements: "))
inputList(a, n)
c=[0]*(m+1)
countarray(a, c)
print("The array is: ", a)
print("The result is: ", c)
```

Counting

```
Enter the number of elements: 10
Enter the range  of elements: 6
enter the data: 6 5 6 3 1 1 2 6 5 1
The array is:  [6, 5, 6, 3, 1, 1, 2, 6, 5, 1]
The result is:  [0, 3, 1, 1, 0, 2, 3]
```

Counting

counting1.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/counting1.py (3.4.4)

File Edit Format Run Options Window Help

```
def countarray(x, y):
    for i in range(len(x)):
        for j in range(len(y)):
            if (x[i]==j):
                y[j]=y[j]+1
    return

a=[]
n=int(input("Enter the number of elements: "))
m=int(input("Enter the range  of elements: "))
print("enter the data:", end='')
a=list(map(int,input().strip().split(" ")))
c=[0]*(m+1)
countarray(a, c)
print("The array is: ", a)
print("The result is: ", c)
```

"7 123 18 2"

[1, 1, 1, 1]

Counting

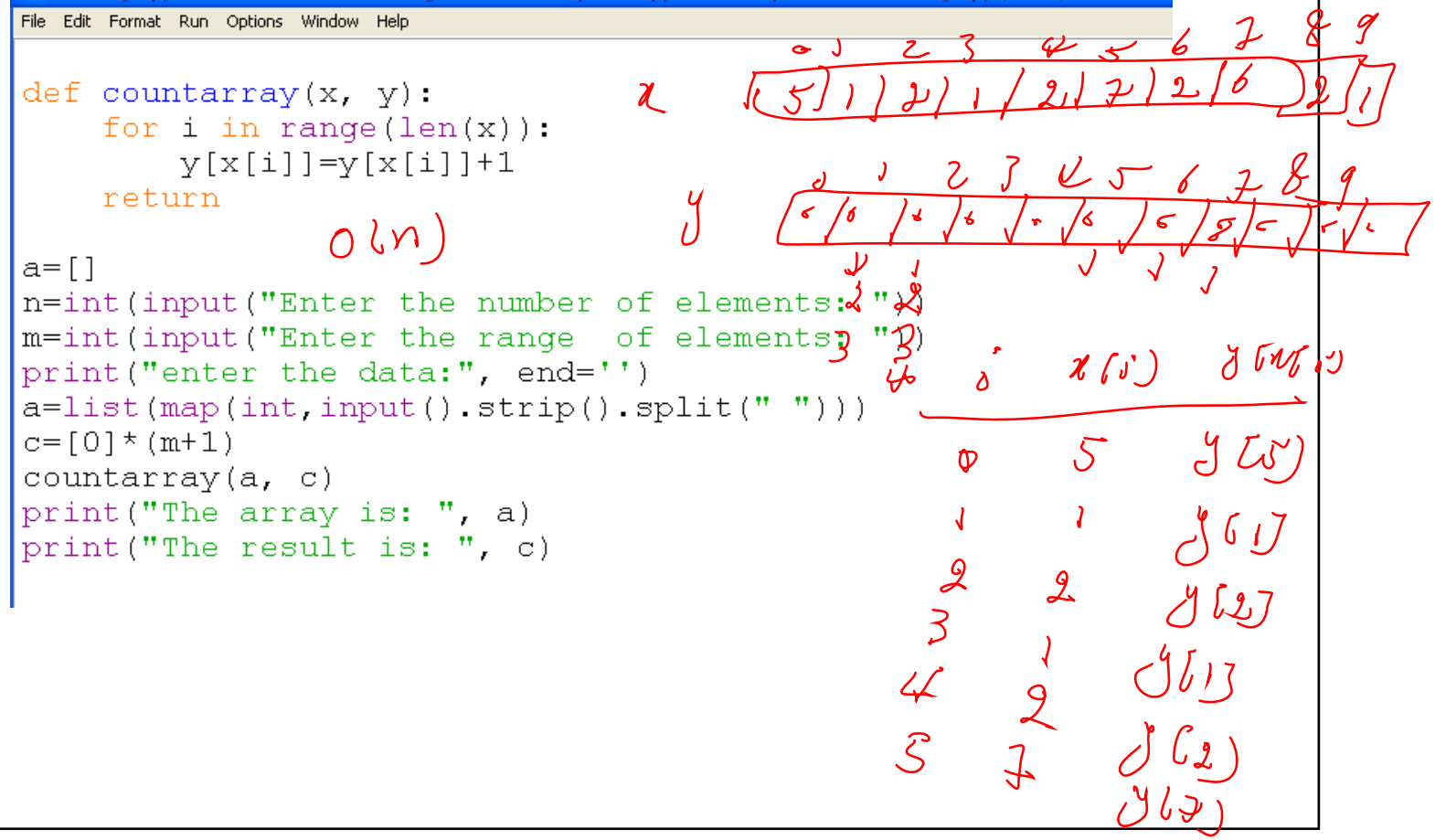
```
Enter the number of elements: 10
Enter the range  of elements: 6
enter the data: 6 5 6 3 1 1 2 6 5 1
The array is:  [6, 5, 6, 3, 1, 1, 2, 6, 5, 1]
The result is:  [0, 3, 1, 1, 0, 2, 3]
```

Counting

counting1.py - C:/Documents and Settings/admin/Desktop/intro-python/examples/17-1/counting1.py (3.4.4)

File Edit Format Run Options Window Help

```
def countarray(x, y):
    for i in range(len(x)):
        y[x[i]]=y[x[i]]+1
    return

a=[]
n=int(input("Enter the number of elements: "))
m=int(input("Enter the range  of elements: "))
print("enter the data:", end='')
a=list(map(int,input().strip().split(" ")))
c=[0]*(m+1)
countarray(a, c)
print("The array is: ", a)
print("The result is: ", c)
```



Counting

```
Enter the number of elements: 10
Enter the range  of elements: 6
enter the data: 6 5 6 3 1 1 2 6 5 1
The array is:  [6, 5, 6, 3, 1, 1, 2, 6, 5, 1]
The result is:  [0, 3, 1, 1, 0, 2, 3]
```

End