

Lab 3
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Q1

```
def calculator(a,b,op):
    switcher={
        '*':a*b,
        '/':a/b,
        '+':a+b,
        '-':a-b,
    }
    return switcher[op]

a=input("Enter first number:")
b=input("Enter second number:")
op=raw_input("Enter Operation to do (hint: + - * ): ")
res=calculator(a,b,op)
print(res)
```

```

PROBLEMS  TERMINAL  ...  3: Code  +  []  [X]  ^  X
$ python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/prog1.py"
Enter first number:3
Enter second number:5
Enter Operation to do (hint: + - * ): *
15
$ 

```

Q2

```
f=open('prog1.py','r')
f2=open('newfile.txt','w+')
lines=f.readlines()
for line in reversed(lines):
    line=line[::-1]
    f2.write(line)

f2.close()

f2=open('newfile.txt','r')
for line in f2:
    print(line)
```

```
f.close()
f2.close()
```

```
prog1.py > calculator
1 def calculator(a,b,op):
2     switcher={
3         '*':a*b,
4         '//':a/b,
5         '+':a+b,
6         '-':a-b,
7     }
8     return switcher[op]
9
10 a=input("Enter first number:")
11 b=input("Enter second number:")
12 op=raw_input("Enter Operation to do (hint: + - * ) : ")
13 res=calculator(a,b,op)
14 print(res)
15
```

```
newfile.txt
1
2 )ser(tnirp
3 )po,b,a(rotaluclac=ser
4 )" :) * - + :tnih( od ot noitarep0 retne"(tupni_war=p
5 )":rebmun dnoces retne"(tupni=b
6 )":rebmun tsrif retne"(tupni=a
7
8 ]po[rehctiws nruter
9 }
10 ,b-a:'-'
11 ,b+a:'+'
12 ,b/a:'//'
13 ,b*a:'*'
14 {=rehctiws
15 :)po,b,a(rotaluclac fed
```

Q3

```
def binarySearch(arr,left,right,x):
```

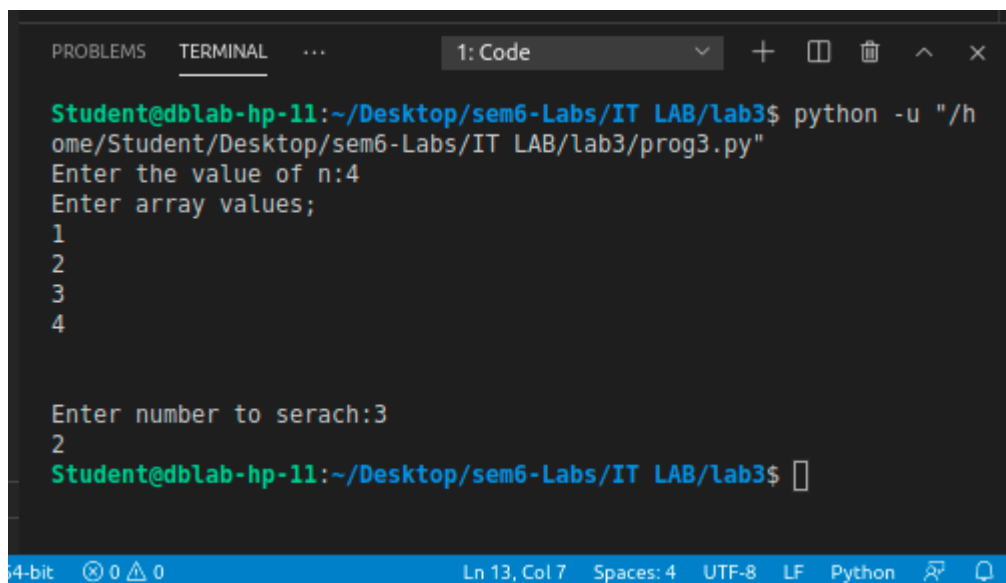
```

if left>=right:
    return -1
mid=(left+right)/2
if arr[mid]==x:
    return mid
elif x>arr[mid]:
    return binarySearch(arr,mid,right,x)
else:
    return binarySearch(arr,left,mid,x)

arr=[]
n=int(input("Enter the value of n:"))
print("Enter array values;")
for i in range(0,n):
    arr.append(int(input()))

print("\n")
x=int(input("Enter number to serach:"))
res=binarySearch(arr,0,len(arr),x)
print(res)

```



```

Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$ python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/prog3.py"
Enter the value of n:4
Enter array values;
1
2
3
4

Enter number to serach:3
2
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$

```

Q4

```

def sort_it(myStr):
    words = [word.lower() for word in myStr.split()]
    words.sort()
    str_ret=""
    for word in words:

```

```

        str_ret=str_ret+" "+word

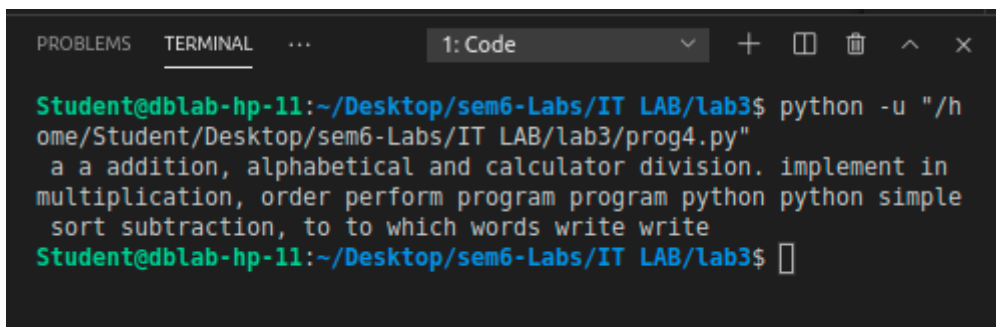
    return str_ret

f=open('file1.txt','r')

str_arr=""
for line in f:
    str_arr=str_arr+sort_it(line)

str_arr=sort_it(str_arr)
print(str_arr)

```



```

Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$ python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/prog4.py"
a a addition, alphabetical and calculator division. implement in
multiplication, order perform program program python python simple
sort subtraction, to to which words write write
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$

```

Additional 1

```

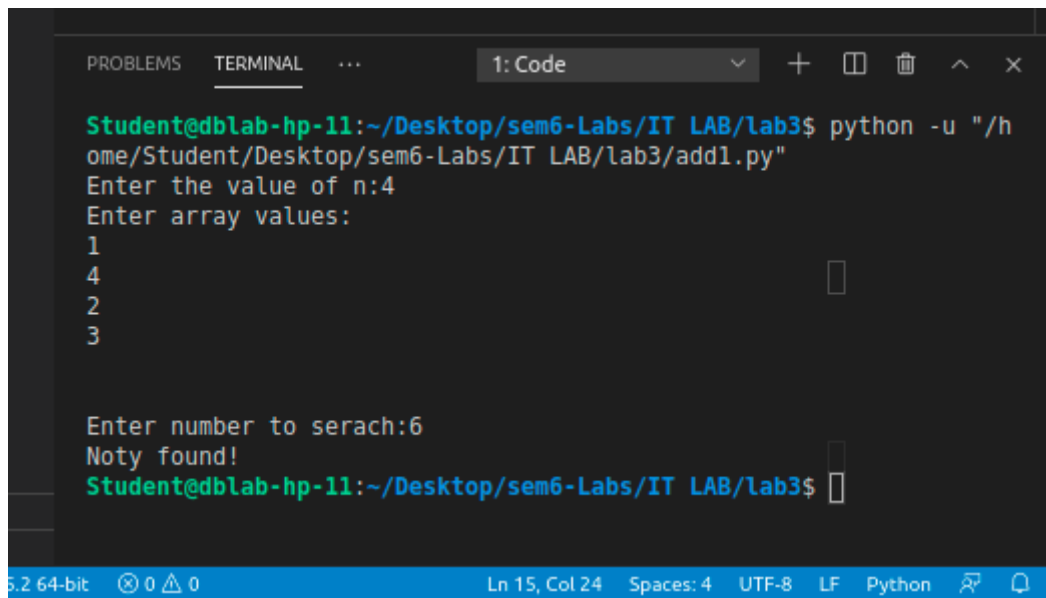
def linearSearch(arr,x):
    for i in range(0,len(arr)):
        if x==arr[i]:
            return i

arr=[]
n=int(input("Enter the value of n:"))
print("Enter array values:")
for i in range(0,n):
    arr.append(int(input()))

print("\n")
x=int(input("Enter number to serach:"))
res=linearSearch(arr,x)

```

```
if res == None:
    print("Noty found!")
```



```
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$ python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/add1.py"
Enter the value of n:4
Enter array values:
1
4
2
3

Enter number to serach:6
Noty found!
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$
```

Additional2

```
def BubbleSort(arr):
    n=len(arr)
    for i in range(0,n-1):
        for j in range(0,n-i-1):
            if(arr[j]>arr[j+1]):
                temp=arr[j]
                arr[j]=arr[j+1]
                arr[j+1]=temp

    return arr

arr=[]
n=int(input("Enter the value of n:"))
print("Enter array values:")
for i in range(0,n):
    arr.append(int(input()))

print("\n")

print("Array before Sorting:")
print(arr)
arr=BubbleSort(arr)
print("Sortred Array:")
print(arr)
```

```
PROBLEMS  TERMINAL  ...  1: Code  +  [ ]  [ ]  ^  x
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$ python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/add2.py"
Enter the value of n:4
Enter array values:
1
4
2
3

Array before Sorting:
[1, 4, 2, 3]
Sortred Array:
[1, 2, 3, 4]
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$
```

Additional 3

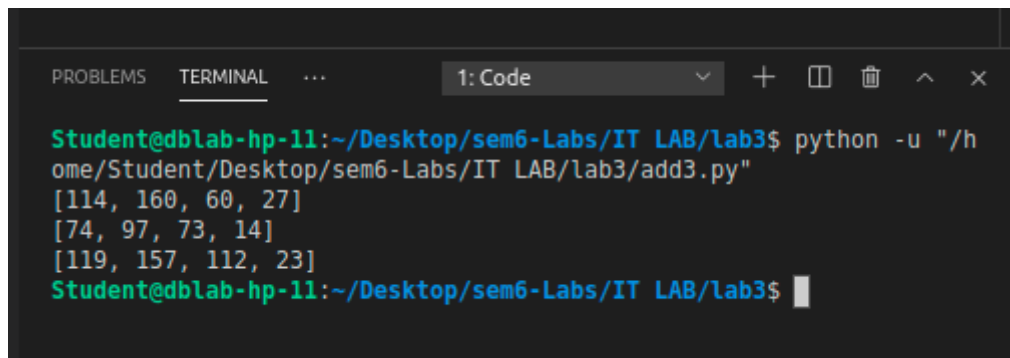
```
X = [[12,7,3],
      [4 ,5,6],
      [7 ,8,9]]
```

```
Y = [[5,8,1,2],
      [6,7,3,0],
      [4,5,9,1]]
```

```
result = [[0,0,0,0],
           [0,0,0,0],
           [0,0,0,0]]
```

```
for i in range(len(X)):
    for j in range(len(Y[0])):
        for k in range(len(Y)):
            result[i][j] += X[i][k] * Y[k][j]
```

```
for r in result:
    print(r)
```



The image shows a screenshot of a Visual Studio Code (VS Code) terminal window. The window has a dark theme. At the top, there is a tab labeled "1: Code". Below the tab, the terminal shows the following text:

```
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$ python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/add3.py"
[114, 160, 60, 27]
[74, 97, 73, 14]
[119, 157, 112, 23]
Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3$
```

The prompt "Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3\$" is shown in green. The command "python -u "/home/Student/Desktop/sem6-Labs/IT LAB/lab3/add3.py"" is shown in white. The output consists of three lines of lists: "[114, 160, 60, 27]", "[74, 97, 73, 14]", and "[119, 157, 112, 23]". The prompt "Student@dblab-hp-11:~/Desktop/sem6-Labs/IT LAB/lab3\$" is shown in green. A white cursor is visible at the end of the last prompt.