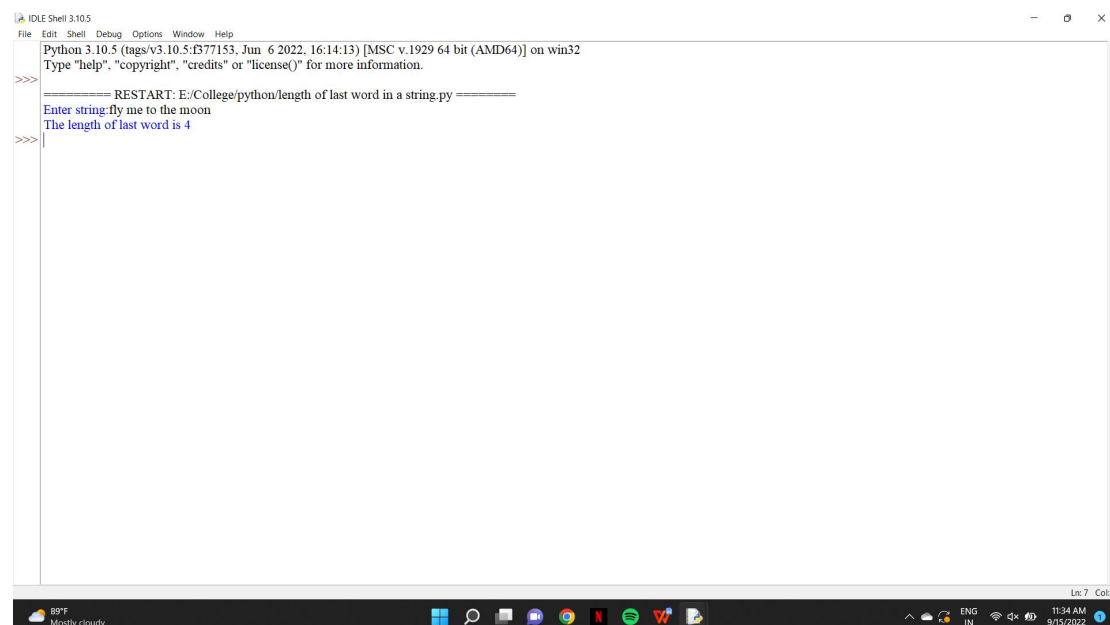


DAY-5 LAB EXPERIMENTS

NAME: S.G.DEVSACHIN
REG.NO: 192111088
SUBJECT CODE:CSA0836
SUBJECT: PYTHON
DATE: 15/09/2022

```
1)def lengthOfLastWord(a):  
    l = 0  
    x = a.strip()  
  
    for i in range(len(x)):  
        if x[i] == " "  
            l = 0  
        else:  
            l += 1  
    return l  
inp = input("Enter string:")  
print("The length of last word is",  
lengthOfLastWord(inp))
```

OUTPUT:



The screenshot shows a Python IDE Shell window titled 'IDLE Shell 3.10.5'. The window contains the following text:

```
Python 3.10.5 (tags/v3.10.5:f377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
===== RESTART: E:/College/python/length of last word in a string.py =====  
>>> Enter string fly me to the moon  
>>> The length of last word is 4  
>>>
```

The window also shows a Windows taskbar at the bottom with the date and time '11:34 AM 9/15/2022'.

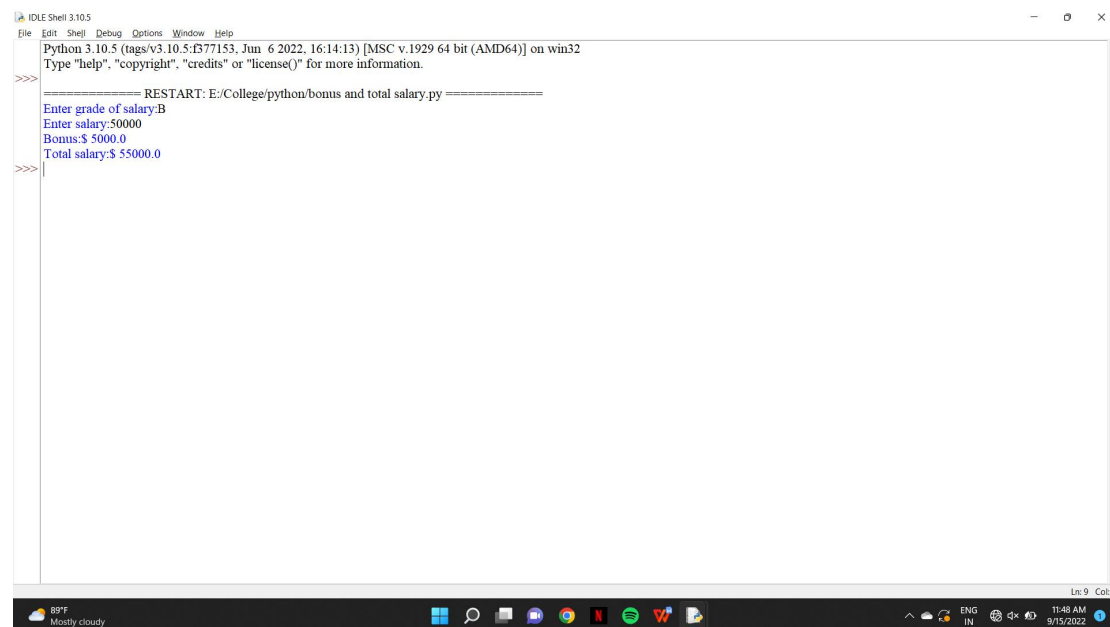
2) a=input("Enter grade of salary:")

```

b=int(input("Enter salary:"))
if a=="A":
    j=b*0.05
    b+=j
elif a=="B":
    j=b*0.1
    b+=j
elif b<10000:
    j=b*0.02
    b+=j
print("Bonus:$",j)
print("Total salary:$",b)

```

OUTPUT:



```

IDLE Shell 3.10.5
Python 3.10.5 (tags/v3.10.5:f377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/College/python/bonus and total salary.py =====
Enter grade of salary:B
Enter salary:50000
Bonus:$ 5000.0
Total salary:$ 55000.0
>>>

```

```

4)testSize = int(input())
nArr=[]
for i in range(1,testSize+1):
    nArr.append(int(input()))

for n in nArr:
    if n>=1 and n<=(10**9):
        prod = 1
        sum = 0
        for i in range(1, n+1):
            prod = prod*i
            sum = sum+i

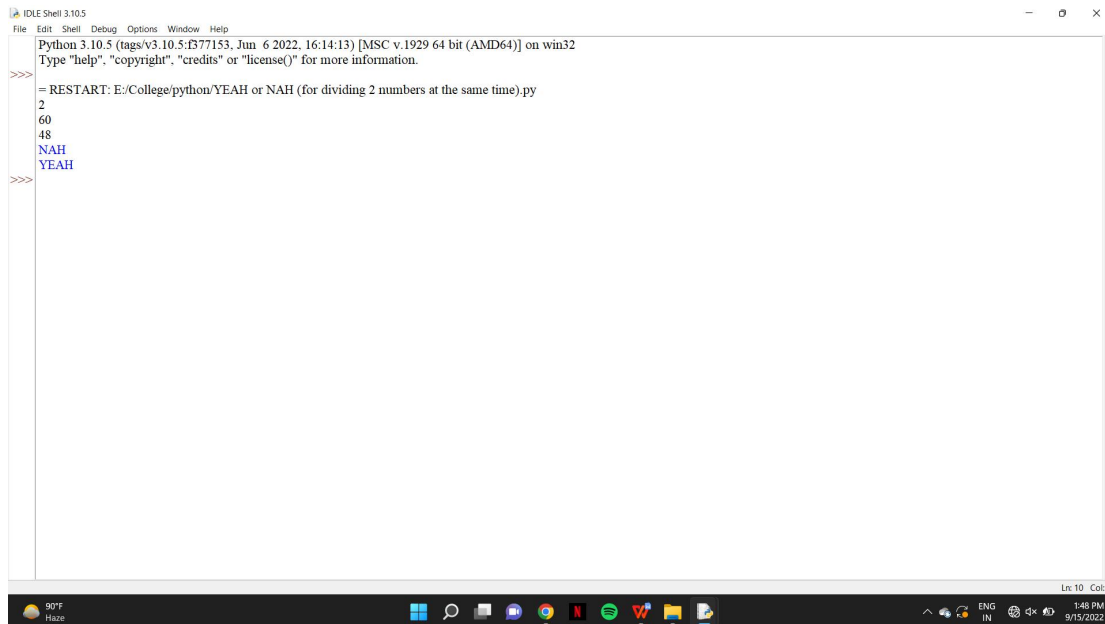
```

```

if prod%sum==0:
    print("YEAH")
else:
    print("NAH")

```

OUTPUT:



```

IDLE Shell 3.10.5
Python 3.10.5 (tags/v3.10.5:1377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\College\python\YEAH or NAH (for dividing 2 numbers at the same time).py
2
60
NAH
YEAH
>>>

```

```

5) def findPeak(arr, n) :
    # first or last element is peak element
    if (n == 1) :
        return 0
    if (arr[0] >= arr[1]) :
        return 0
    if (arr[n - 1] >= arr[n - 2]) :
        return n - 1

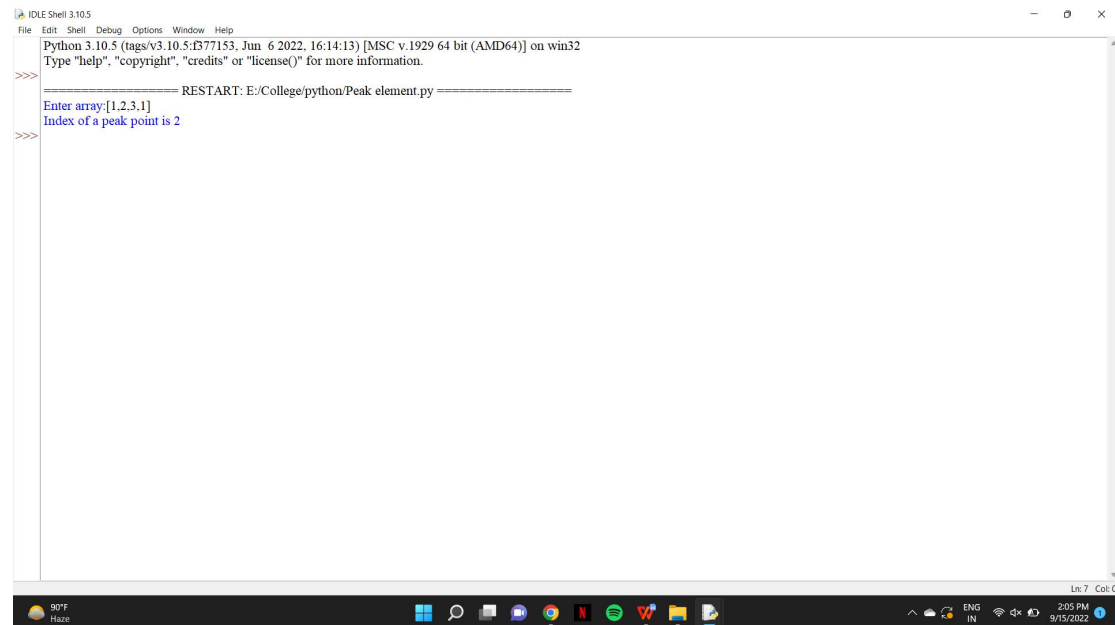
    # check for every other element
    for i in range(1, n - 1) :

        # check if the neighbors are smaller
        if (arr[i] >= arr[i - 1] and arr[i] >= arr[i + 1]) :
            return i

# Driver code.
arr = eval(input("Enter array:"))
n = len(arr)
print("Index of a peak point is", findPeak(arr, n))

```

OUTPUT:

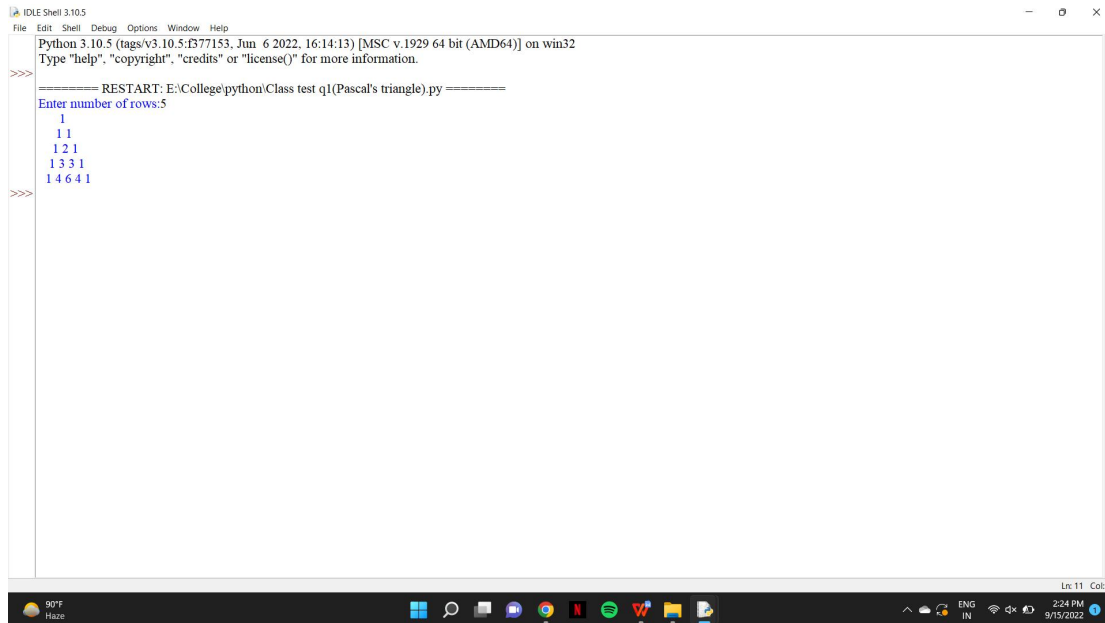


```
Python 3.10.5 (tags/v3.10.5:f377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/College/python/Peak element.py =====
>>> Enter array:[1,2,3,1]
Index of a peak point is 2
>>>
```

6)

```
from math import factorial
n=int(input("Enter number of rows:"))
for i in range(n):
    for j in range(n-i+1):
        print(end=" ")
    for j in range(i+1):
        print(factorial(i)//(factorial(j)*factorial(i-j)),end=" ")
    print()
```

OUTPUT:



```
Python 3.10.5 (tags/v3.10.5:f377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:\College\python\Class test q1(Pascal's triangle).py =====
Enter number of rows:5
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
>>>
```

7) def longestSubstring(s, k) :

```
ans = 0
```

```
freq = [0]*26
```

```
n = len(s)
```

```
for i in range(n) :
```

```
    freq[ord(s[i]) - ord('a')] += 1
```

```
unique = 0
```

```
for i in range(26) :
```

```
    if (freq[i] != 0) :
```

```
        unique += 1
```

```
for curr_unique in range(1, unique + 1) :
```

```
    Freq = [0]*26
```

```
    start, end = 0, 0
```

```
    cnt, count_k = 0, 0
```

```
    while (end < n) :
```

```
        if (cnt <= curr_unique) :
```

```
            ind = ord(s[end]) - ord('a')
```

```
            if (Freq[ind] == 0) :
```

```
                cnt += 1
```

```

Freq[ind] += 1

if (Freq[ind] == k) :
    count_k += 1
end += 1

else :
    ind = ord(s[start]) - ord('a')
    if (Freq[ind] == k) :
        count_k -= 1

Freq[ind] -= 1

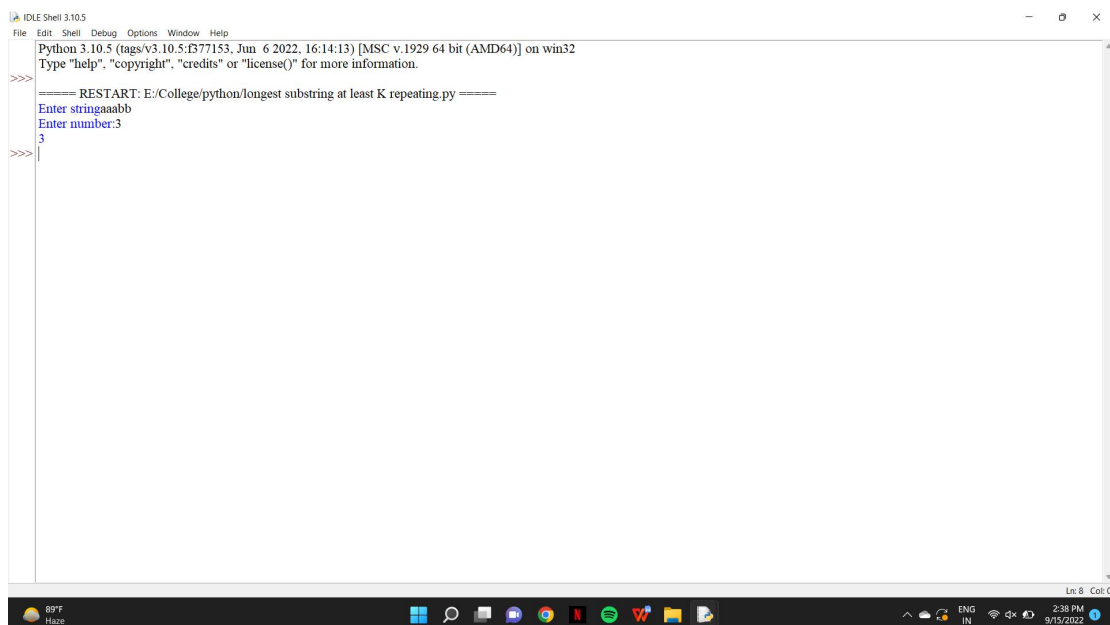
if (Freq[ind] == 0) :
    cnt -= 1

start += 1
if ((cnt == curr_unique) and (count_k == curr_unique)) :

    ans = max(ans, end - start)
print(ans)
S = input("Enter string")
K = int(input("Enter number:"))
longestSubstring(S, K)

```

OUTPUT:



The screenshot shows a Python IDE Shell window titled "IDLE Shell 3.10.5". The shell displays the following text:

```

Python 3.10.5 (tags/v3.10.5:f377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> ===== RESTART: E:\College\python\longest substring at least K repeating.py =====
>>> Enter string:aaabb
>>> Enter number:3
>>>

```

The output of the program is 3, which is the length of the longest substring with at least 3 repeating characters in the string "aaabb".

8) def movesToChessboard(board):

```
n = len(board)
for r in range(0, n):
    for c in range(0, n):
        if (board[0][0] ^ board[r][0] ^ board[0] ^ board[r] == 1):
            return -1
rowsum = 0
colsum = 0
rowswap = 0
colswap = 0

for i in range(0, n):
    rowsum += board[i][0]
    colsum += board[0][i]
    rowswap += board[i][0] == i % 2
    colswap += board[0][i] == i % 2

if (rowsum != n // 2 and rowsum != (n + 1) // 2):
    return -1
if (colsum != n // 2 and colsum != (n + 1) // 2):
    return -1
```

9) if (n % 2):

10) if (rowswap % 2):

11) rowswap = n - rowswap

12) if (colswap % 2): colswap = n - colswap

else:

rowswap = min(rowswap, n - rowswap)

colswap = min(colswap, n - colswap)

return (rowswap + colswap) // 2

arr = [[0, 1, 1, 0],

[0, 1, 1, 0],

[1, 0, 0, 1],

[1, 0, 0, 1]]

minswap = movesToChessboard(arr)

if (minswap == -1):

print("Impossible")

```
else:  
    print(minswap)
```

OUTPUT:

```
10) def reverse_word(s, start, end):  
    while start < end:  
        s[start], s[end] = s[end], s[start]  
        start = start + 1  
        end -= 1
```

```
s = input("Enter string:")
```

```
s = list(s)  
start = 0  
while True:
```

```
    try:  
        end = s.index(' ', start)  
  
        reverse_word(s, start, end - 1)  
  
        start = end + 1
```

```
    except ValueError:  
  
        reverse_word(s, start, len(s) - 1)  
        break
```

```
s.reverse()
```

```
s = "".join(s)
```

```
print(s)
```

OUTPUT:


```
Python 3.10.5 (tags/v3.10.5:f377153, Jun 6 2022, 16:14:13) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: E:/College/python/REVERSE WORDS IN A STRING.py =====
Enter string:The sky is blue
blue is sky The
>>>
```

89°F
Haze

2:58 PM
9/15/2022