

## HATFD1010

### Problem Statement:

#### Rotate a String Left by K Positions

Write a program to rotate a given string *s* left by *k* positions without using any built-in string functions.

For example, rotating "abcdef" by 2 would give "cdefab".

**Instructions:** Do not use built-in rotation or substring functions. Implement the logic manually.

#### Program code : Rotateastring.py

```
def swap(reslist:list,st:int,ed:int):
    while st<ed:
        reslist[st],reslist[ed]=reslist[ed],reslist[st]
        st+=1
        ed-=1
def rotation(reslist:list,k:int)->str:
    slength=len(s)
    if(slength==0):
        return ""
    k%=slength
    swap(reslist,0,k-1)
    swap(reslist,k,slength-1)
    swap(reslist,0,slength-1)
    return "".join(reslist)
if __name__=="__main__":
    s=input()
    k=int(input())
    reslist = list(s)
    print(rotation(reslist,k))
```

```
1 def swap(reslist:list,st:int,ed:int): 3 usages
2     while st<ed:
3         reslist[st],reslist[ed]=reslist[ed],reslist[st]
4         st+=1
5         ed-=1
6
7 def rotation(reslist:list,k:int)->str: 1 usage
8     length=len(s)
9     if(length==0):
10         return ''
11     k%=length
12     swap(reslist, st=0,k-1)
13     swap(reslist,k,length-1)
14     swap(reslist, st=0,length-1)
15     return ''.join(reslist)
16
17 if __name__=="__main__":
18     s=input()
19     k=int(input())
20     reslist = list(s)
21     print(rotation(reslist,k))
```

## Sample Inputs:

Input1: s= "abcdef", k=2

Output: "cdefab"

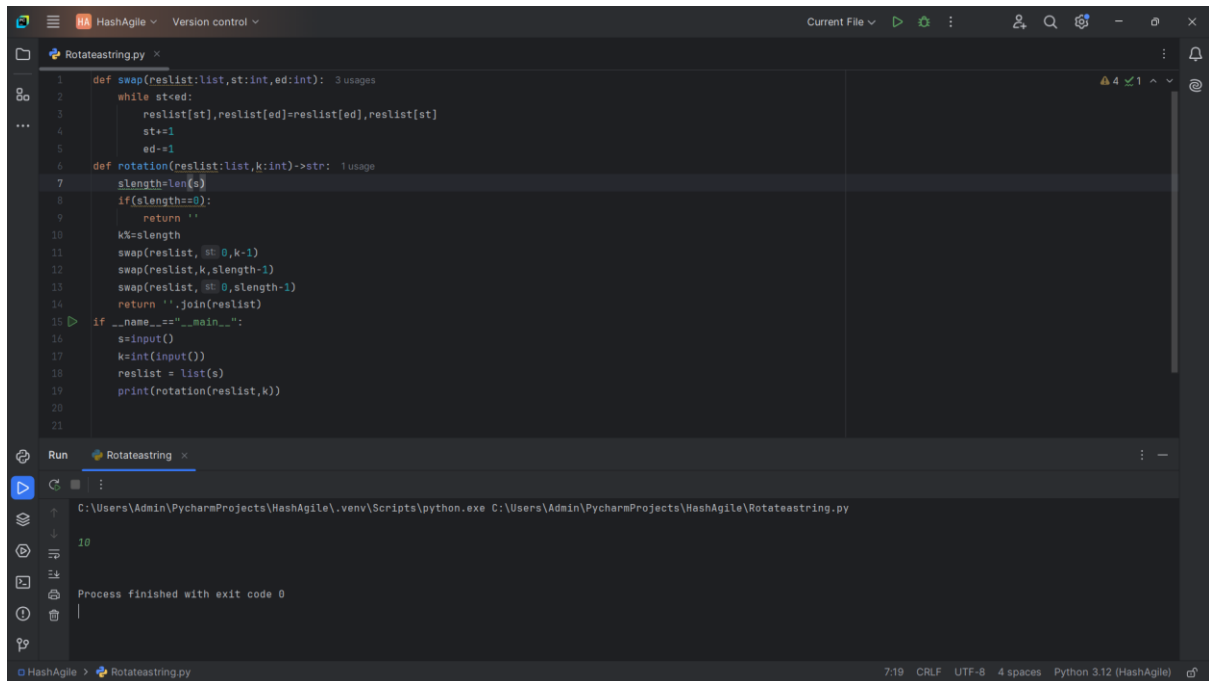
```
1 def swap(reslist:list,st:int,ed:int): 3 usages
2     while st<ed:
3         reslist[st],reslist[ed]=reslist[ed],reslist[st]
4         st+=1
5         ed-=1
6
7 def rotation(reslist:list,k:int)->str: 1 usage
8     length=len(s)
9     if(length==0):
10         return ''
11     k%=length
12     swap(reslist, st=0,k-1)
13     swap(reslist,k,length-1)
14     swap(reslist, st=0,length-1)
15     return ''.join(reslist)
16
17 if __name__=="__main__":
18     s=input()
19     k=int(input())
20     reslist = list(s)
21     print(rotation(reslist,k))
```

Run Rotatestring

```
C:\Users\Admin\PycharmProjects\HashAgile\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\HashAgile\Rotatestring.py
abcdef
2
cdefab
Process finished with exit code 0
```

**Input2:** s="" (Empty String) , k =10

**Output:** "" (Empty String)



The screenshot shows a PyCharm IDE window titled 'HashAgile'. The editor displays a Python script named 'Rotatestring.py'. The script defines a 'swap' function, a 'rotation' function, and a main execution block. The 'rotation' function takes a list 'reslist' and an integer 'k', calculates the length, and performs a rotation by 'k' positions. The main block takes user input 's' and 'k', converts 's' to a list, and prints the result of the rotation. The Run window at the bottom shows the command executed: 'C:\Users\Admin\PycharmProjects\HashAgile\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\HashAgile\Rotatestring.py'. The input '10' is shown, and the output is an empty string. The process finished with exit code 0.

```
1 def swap(reslist:list,st:int,ed:int): 3 usages
2     while st<ed:
3         reslist[st],reslist[ed]=reslist[ed],reslist[st]
4         st+=1
5         ed-=1
6
7 def rotation(reslist:list,k:int)->str: 1 usage
8     slength=len(s)
9     if(slength==0):
10        return ''
11    k%=slength
12    swap(reslist, st=0,k=k-1)
13    swap(reslist,k,slength-1)
14    swap(reslist, st=0,slength-1)
15    return ''.join(reslist)
16
17 if __name__=="__main__":
18     s=input()
19     k=int(input())
20     reslist = list(s)
21     print(rotation(reslist,k))
```

Run Rotatestring x

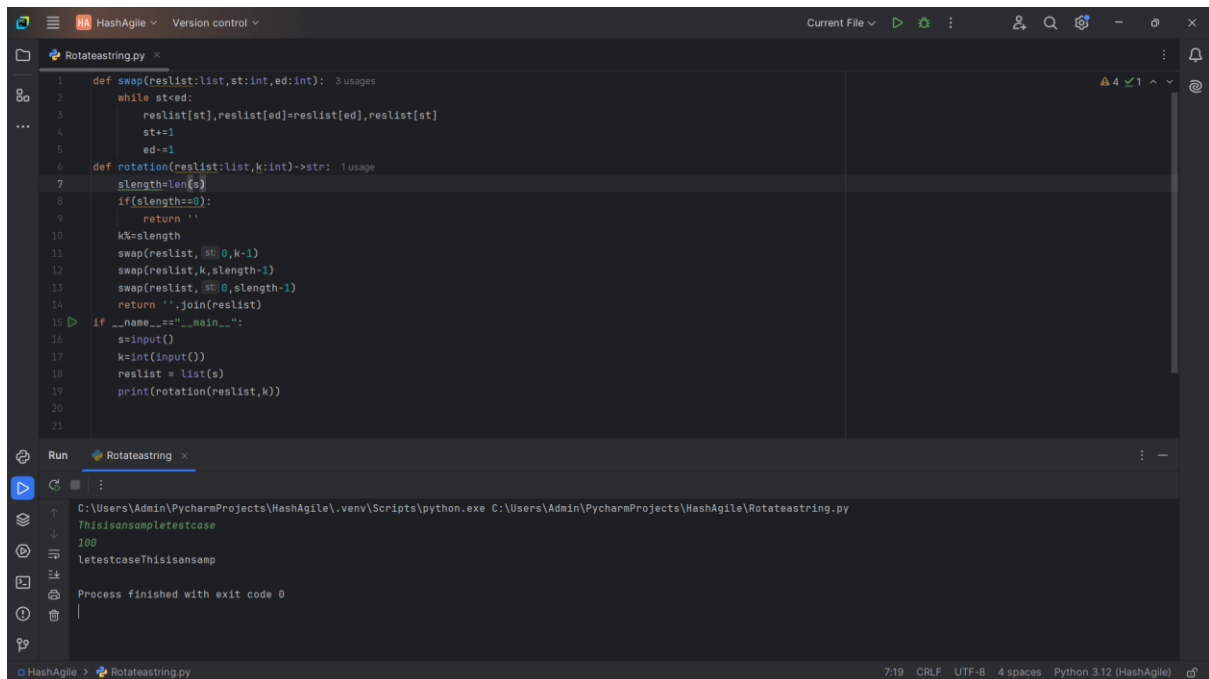
C:\Users\Admin\PycharmProjects\HashAgile\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\HashAgile\Rotatestring.py

10

Process finished with exit code 0

**Input3:** s="Thisisansampletestcase", k=100

**Output:** "letestcaseThisisansamp"



The screenshot shows the same PyCharm IDE window. The input 'Thisisansampletestcase' is entered, and the output is 'letestcaseThisisansamp'. The process finished with exit code 0.

```
1 def swap(reslist:list,st:int,ed:int): 3 usages
2     while st<ed:
3         reslist[st],reslist[ed]=reslist[ed],reslist[st]
4         st+=1
5         ed-=1
6
7 def rotation(reslist:list,k:int)->str: 1 usage
8     slength=len(s)
9     if(slength==0):
10        return ''
11    k%=slength
12    swap(reslist, st=0,k=k-1)
13    swap(reslist,k,slength-1)
14    swap(reslist, st=0,slength-1)
15    return ''.join(reslist)
16
17 if __name__=="__main__":
18     s=input()
19     k=int(input())
20     reslist = list(s)
21     print(rotation(reslist,k))
```

Run Rotatestring x

C:\Users\Admin\PycharmProjects\HashAgile\.venv\Scripts\python.exe C:\Users\Admin\PycharmProjects\HashAgile\Rotatestring.py

Thisisansampletestcase

100

letestcaseThisisansamp

Process finished with exit code 0