Course Outcome 1 (CO1)

2. Display future leap years from current year to a final year entered by user.

Program

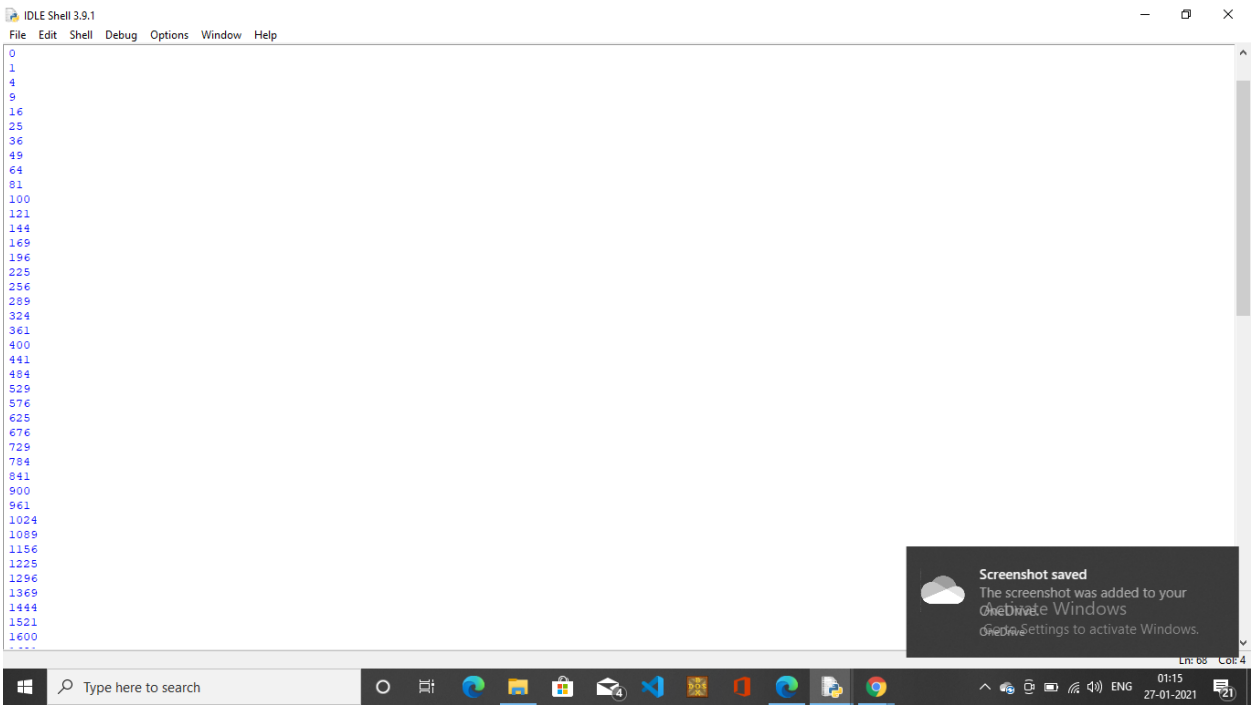
```
>>> print ("Enter year")
Enter year
>>> endYear = int(input())
2030
>>> startYear =2020
>>> print ("List of leap years:")
List of leap years:
>>> for year in range(startYear, endYear):
    if (0 == year % 4) and (0 != year % 100) or (0 == year % 400):
        print (year)



2020
2024
2028
```

3. List comprehensions:

(b) Square of N numbers

Program

```
for  x  in range(100):
      Print(x**2)
```

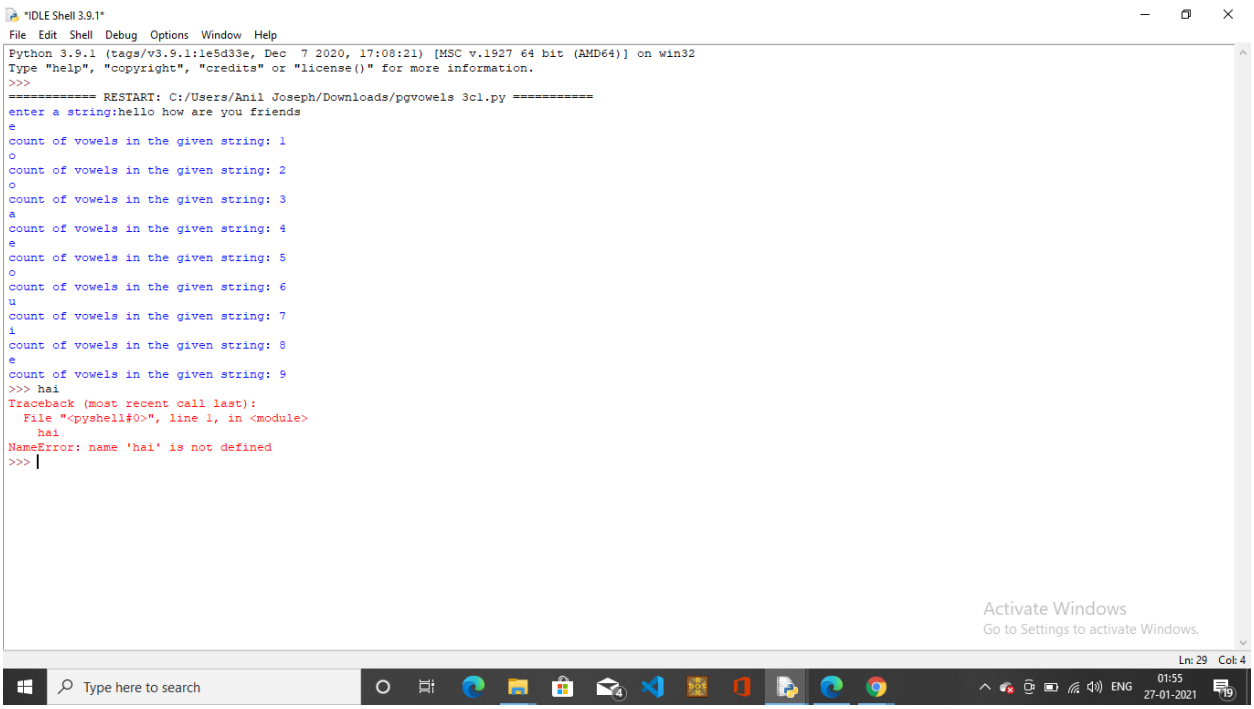


(c) Form a list of vowels selected from a given word

Program

```
str1=input("enter a string:")
str1_lower=str1.lower()
vowels="aeiou"
count=0
for i in str1_lower:
    if i in vowels:
        count=count+1
        print(i)
        print("count of vowels in the given string:",count)
```

output



4. Count the occurrences of each word in a line of text.

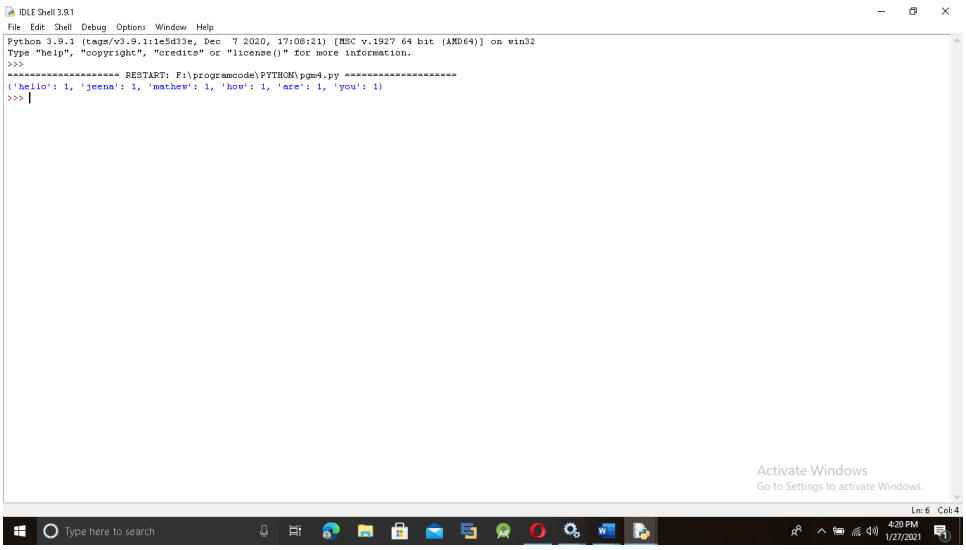
Program

```
def word_count(str):
    counts = dict()
    words = str.split()



    for word in words:
        if word in counts:
            counts[word] += 1
        else:
            counts[word] = 1



    return counts
```

print(word_count('hello Jeena mathew how are you'))

output---

{'hello': 1, 'jeena': 1, 'mathew': 1, 'how': 1, 'are': 1, 'you': 1}



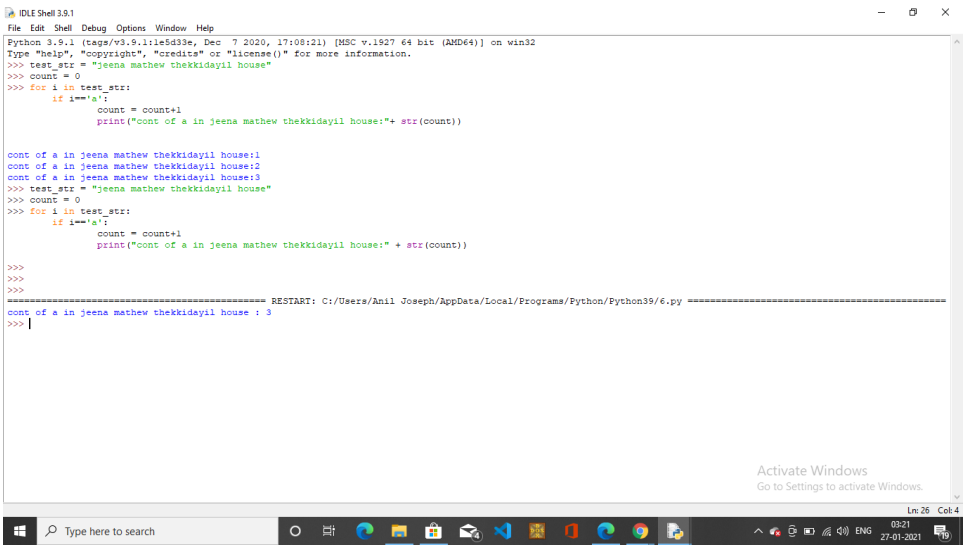
6. Store a list of first names. Count the occurrences of ‘a’ within the list

Program

```
test_str = "jeena mathew thekkidayil house"
>>> count = 0
>>> for i in test_str:
    if i=='a':
        count = count+1
        print("cont of a in jeena mathew thekkidayil house:" + str(count))
```

Output

cont of a in jeena mathew thekkidayil house : 3



7. Enter 2 lists of integers. Check (a) Whether list are of same length (b) whether list sums to same value

(c) whether any value occur in both

Program

```
def lists():
 list1=[]
 list2=[]
 list3=[]
 n1=int(input("total number of elements in list 1:"))
 for i in range(n1):
  val=int(input("enter a number:"))
  list1.append(val)
 n2=int(input("total number of elements in the list 2:"))
 for i in range(n2):
  val=int(input("enter a number:"))
  list2.append(val)
 if(n1==n2):
  print("list are of same length")
 else:
```

```
  print("list are not same length:")
 if(sum(list1)==sum(list2)):
  print("sum value is same")
 else:
  print("sum value is not same")
 list3=[each for each in list1 if each in list2]
 print("values in the both lists are:",list3)
Lists()
```

Output

```
total number of elements in list 1:4
enter a number:5
enter a number:6
enter a number:2
enter a number:4
total number of elements in the list 2:5
enter a number:2
enter a number:5
enter a number:7
enter a number:8
enter a number:9
list are not same length:
sum value is not same
values in the both lists are: [5, 2]
```

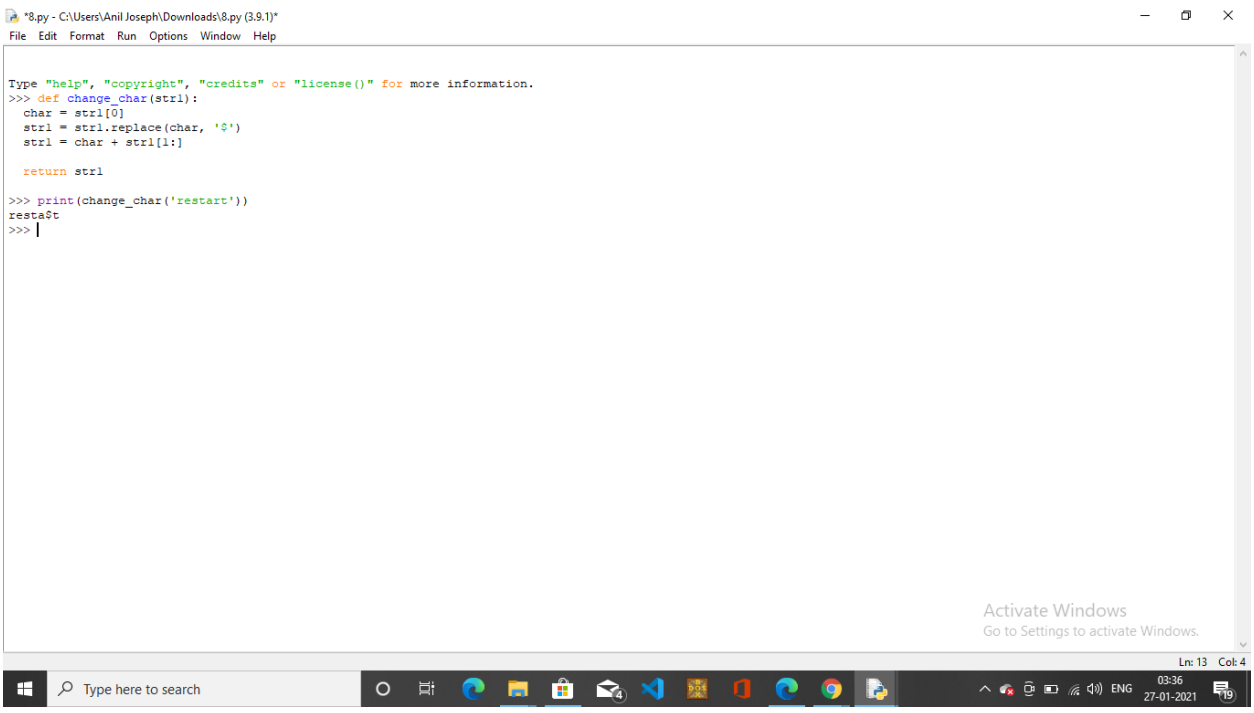
8. Get a string from an input string where all occurrences of first character replaced with ‘$’, except first character.

[eg: onion -> oni$n]

Program

Type "help", "copyright", "credits" or "license()" for more information.

```
>>> def change_char(str1):
  char = str1[0]
  str1 = str1.replace(char, '$')
  str1 = char + str1[1:]

  return str1


>>> print(change_char('restart'))
resta$t
>>>
```



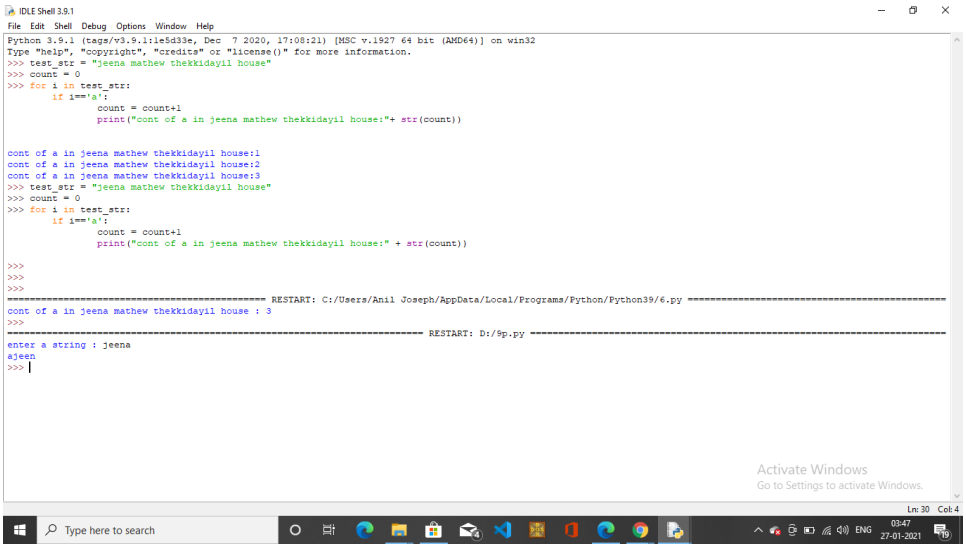
9. Create a string from given string where first and last characters exchanged. [eg: python -> nythop]

Program

```
str = input("enter a string :")
new_str=str[-1:]+str[1:-1]+str[:1]
print(new_str)
```

Output

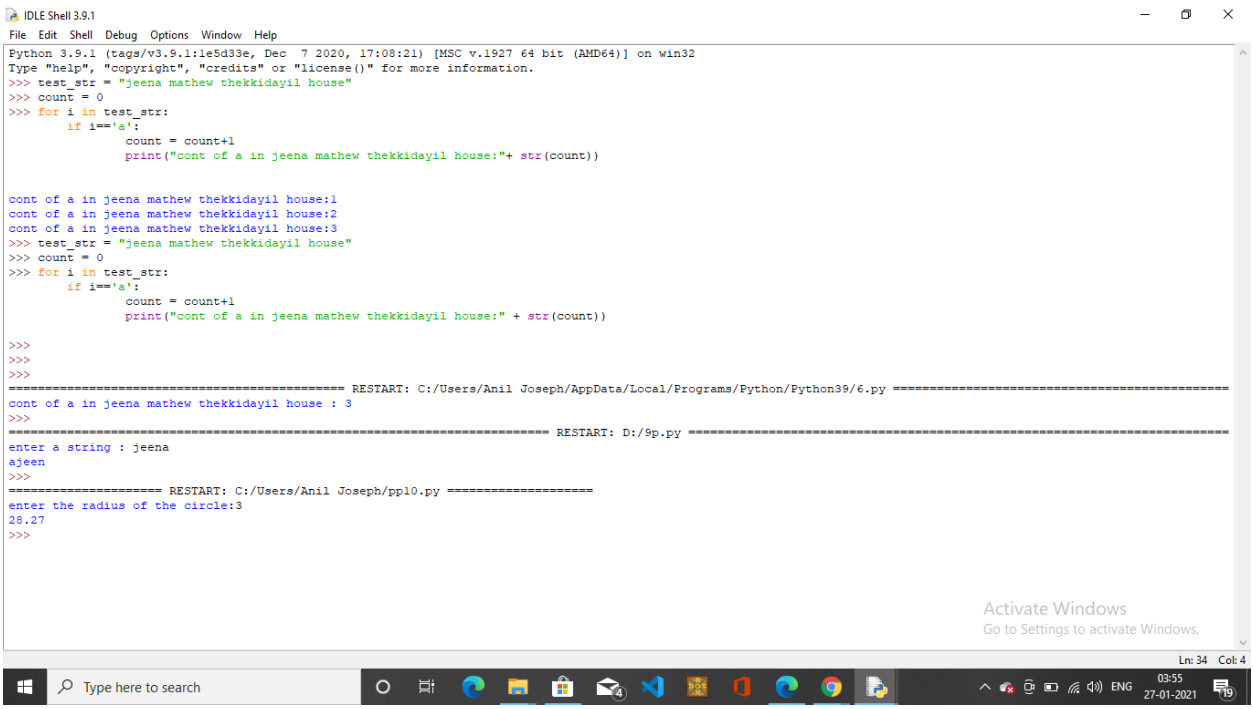
```
enter a string : jeena
ajeen
```



10. Accept the radius from user and find area of circle.

Program

```
import math
r = float(input("enter the radius of the circle:"))
area = math.pi*r*r
print("%.2f" %area)
```



14. Accept an integer n and compute n+nn+nnn.

Program

```
n=int(input("enter a number n:"))
temp=str(n)
t1=temp+temp
t2=temp+temp+temp
comp=n+int(t1)+int(t2)
print("the  value is:",comp)
```

Output

```
enter a number n:5
the  value is: 615
```

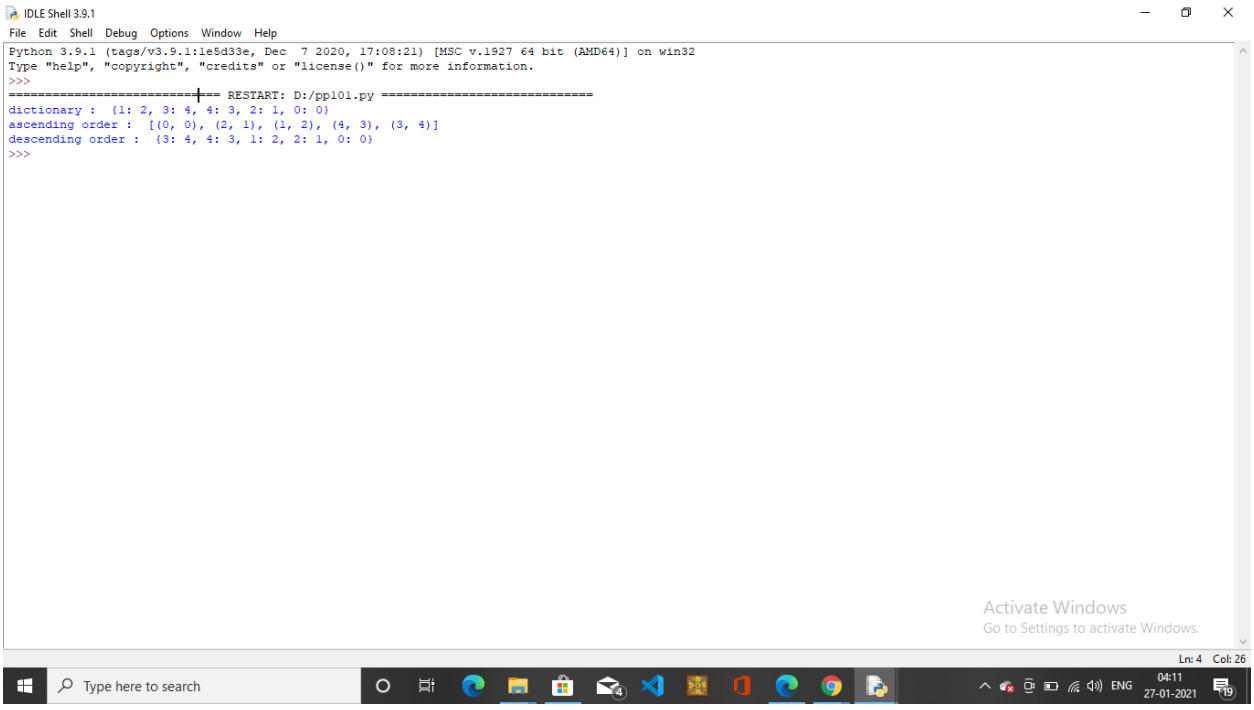
17. Sort dictionary in ascending and descending order.

Program

```
import operator
d = {1: 2, 3: 4, 4: 3, 2: 1, 0: 0}
print('dictionary : ',d)
s= sorted(d.items(), key=operator.itemgetter(1))
print('ascending order : ',s)
s1= dict( sorted(d.items(), key=operator.itemgetter(1),reverse=True))
print('descending order : ',s1)
```

Output

```
dictionary :  {1: 2, 3: 4, 4: 3, 2: 1, 0: 0}
ascending order :  [(0, 0), (2, 1), (1, 2), (4, 3), (3, 4)]
descending order :  {3: 4, 4: 3, 1: 2, 2: 1, 0: 0}
```



18. Merge two dictionaries.

Program

```
x = {'a': 1, 'b': 2}
y = {'b': 10, 'c': 11}
z = x.update(y)
print(z)
print(x)
```

OUTPUT

```
None
{'a': 1, 'b': 10, 'c': 11}
```

19. Find gcd of 2 numbers.

```
num1 = int(input("Enter 1st number: "))
num2 = int(input("Enter 2nd number: "))
i = 1
while(i <= num1 and i <= num2):
  if(num1 % i == 0 and num2 % i == 0):
    gcd = i
  i = i + 1
print("GCD is", gcd)
```

OUTPUT

```
Enter 1st number: 80
```