ord(),chr() functions
these predefined functions in python
ord() : this function return ascii value of input character
chr() : this function return character value of input ascii value

```
>>> ord('A')
65
>>> ord('B')
66
>>> ord('Z')
90
>>> ord('a')
97
>>> ord('b')
98
>>> ord('c')
99
>>> ord('z')
122
>>> chr(65)
'A'
>>> chr(66)
'B'
>>> chr(90)
'Z'
>>> chr(97)
'a'
>>> chr(122)
'z'
```

Example:

```
# write a program to convert string from lowercase to uppercase

str1=input("enter any string") # abc
str2=''
for ch in str1:
    if ch>='a' and ch<='z':
        str2=str2+chr(ord(ch)-32)
    else:
        str2=str2+ch
```

```
print(str1)
print(str2)
```

Output:

```
enter any stringpython
python
PYTHON

========== RESTART: F:/python6pmaug/test68.py =========
enter any stringPYTHON
PYTHON
PYTHON
```

Example:

```
# swapcase
str1=input("enter any string") #
str2=''
for ch in str1:
    if ch>='a' and ch<='z':
        str2=str2+chr(ord(ch)-32)
    elif ch>='A' and ch<='Z':
        str2=str2+chr(ord(ch)+32)
    else:
        str2=str2+ch

print(str1)
print(str2)
```

Output:

```
enter any stringJava2
Java2
jAVA2
```

range

range is a sequence data type
range is used for generating sequence of integers
range is used to generate values in increment order or decrement order.
In application development range is used,

1. To repeat for loop number of times

2. Is used to perform statistical operations
3. Is used for generating index (Arrays and Matrix)

range is an immutable sequence. After creating range object we cannot modify or update.

Syntax1: range(stop)
Syntax2: range(start,stop,[step])

range object is created with 3 attributes

1. **Start → start value or initial value of range**
2. **Stop → stop value of range which is not included**
3. **Step → increment or decrement**

Syntax1: range(stop)
This range syntax is used to generate sequence of +ve integers
It generate sequence of integers in increment order or ascending order
The default start=0,step=+1

range(5) → 0 1 2 3 4
start=0,stop=5,step=+1
range(10) → 0 1 2 3 4 5 6 7 8 9
start=0,stop=10,step=+1

How to read values generated by range object?

1. for loop

Example:

```
r=range(5) # creating range object
for value in r: # 0 1 2 3 4
    print(value)

r1=range(10)# start=0,stop=10,step=1
for value in r1:
    print(value,end=' ')

print()

for x in range(5): # start=0,stop=5,step=+1
    print("NARESHIT")
```

Output:

```
0
1
2
3
4
0 1 2 3 4 5 6 7 8 9
NARESHIT
NARESHIT
NARESHIT
NARESHIT
NARESHIT
```

Syntax2: range(start,stop,[step])
This syntax is used to generate sequence of +ve or –ve integers
Syntax: range(start,stop)
Syntax: range(start,stop,step)

Example:

```
for x in range(1,11): # start=1,stop=11,step=+1
    print(x,end=' ')

print()
for y in range(1,11,2): # start=1,stop=11,step=2
    print(y,end=' ')

print()
for z in range(2,22,2): # start=2,stop=22,step=+2
    print(z,end=' ')

print()
for value in range(65,91): # start=65,stop=91,step=+1
    print(chr(value),end=' ')

print()
for value in range(97,123): # start=97,stop=123,step=+1
    print(chr(value),end=' ')
```

Output:

1 2 3 4 5 6 7 8 9 10
1 3 5 7 9
2 4 6 8 10 12 14 16 18 20
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z

Example:

```
for value in range(10,0,-1): # start=10,stop=0,step=-1
    print(value,end=' ')
print()
for value in range(-1,-11,-1): # start=-1,stop=-11,step=-1
    print(value,end=' ')

print()
for value in range(-10,0): # start=-10,stop=0,step=+1
    print(value,end=' ')

print()
for value in range(-5,6,1):
    print(value,end=' ')
print()
for value in range(5,-6,-1):
    print(value,end=' ')
```

Output

```
10 9 8 7 6 5 4 3 2 1
-1 -2 -3 -4 -5 -6 -7 -8 -9 -10
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1
-5 -4 -3 -2 -1 0 1 2 3 4 5
5 4 3 2 1 0 -1 -2 -3 -4 -5
```

start and stop values are given based on step value

if step +ve ,start<stop
if step –ve ,start>stop

step value should not be 0
start,stop values must of type integer