| Name: | | | | | | | | |
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| EmpID: | | | | | | | | |

1. The following illustrates usage of range function, which returns a sequence of numbers.

```
1  print("contents of range(5):")
2  for i in range(5): #do not forget : in the end
3      print(i) #print is a function, need to follow by (),
4      #parameter of print function is included inside the ().
5
6  print("\ncontents of range(1, 5):") #\n is new line character
7  #visually it is like to start an empty line
8  for i in range(1, 5): #cannot write 1,5 as 1:5, since range is a function and its
           parameters are separated by space
9      print(i)
10
11 print("\ncontents of range(1, 5, 2):") #\n is new line character
12 for i in range(1, 5, 2): #start from 1, ends BEFOFE 5, each time increased by 2.
13     print(i)
14
15 #challenge: count down from 5 to 0, decreased by 1 each time.
16 print("\nCount down from 5 to 0 (Included)")
17 for i in range(5, −1, −1): #What is the value of ?, it should be −1
18     print(i)
```

Key

```
contents of range(5):
0
1
2
3
4

contents of range(1, 5):
1
2
3
4

contents of range(1, 5, 2):
1
3

Count down from 5 to 0 (Included)
```

```
5
4
3
2
1
0
```

2. Divide 10 pens among 3 students, each student need to get the same number of pens, how many pens does a student get? How to write a formula in python?

   Key: 10 // 3

3. Divide 10 pens among 3 students, each students need to get the same number of pens, how many pen(s) is/are left? How to write a formula in python?

   Key: 10 % 3

4. What is the output of the following code? Note that I added Lines 1, 2, 3 to illustrate string concatenation, which is not shown in the original lecture slip 03.

```
1   print("hello" + str(5)) #operator + between two strings concatenates two strings, pad
        the second one to the end of the  first  one.
2   #print("hello" + 5) #WRONG, cannot be compiled
3   print("hello" + str(3.5))
4
5   string = "hello, world" #Warning: do not name string as str. str −− all small letters
        −− is a function in python to convert an int or a float to  string .
6   #for example, str(5) returns "5", ie, str(5) converts whole number 5 to string "5". A
        whole number is also called an int. Similarly,  str(3.5)  returns "3.5"
7
8   #print each letter  of string,  one in a  line
9   print("print each letter of string, one in a line")
10  for ch in string :
11      print(ch)
12
13  print("\nprint each letter of string, one in a line, using character indexed
        at string") #\n is a new character, backslash \ before n changes the meaning of n, it
        is like to insert a new line. Visually it is an empty line.
14  size  = len(string)
15  for i in range(size):
16      print(string[i])
17
18  print("\nprint the first 5 letters of string")
19  print(string [0:5])
20
21  print(string [0:5:2])  #string is  a  variable ,  cannot replace  :  by  ,
22
23  #how to get a reverse string  of the  original  string?
```

Key

```
hello5
hello3.5
print each letter of string, one in a line
h
e
l
l
o
,

w
o
r
l
d

print each letter of string, one in a line, using character indexed at string
h
e
l
l
o
,

w
o
r
l
d

print the first 5 letters of string
hello
hlo
```

```
1   s = "FridaysSaturdaysSundays"
2   num = s.count('s') #what happens if we use num = s.count(s)
3   print("There are", num, "fun days in a week.")
4
5   days = s[:-1]. split ('s') #What is s[:-1]?
6                              #What is value of days?
7   mess = days[0]
8   print("Two of them are", mess, days[-1])
9
10  result = ""
11  for i in range(len(mess)): #what is len(mess)?
12      if i > 2:
13          result = result + mess[i]
```

```
14
15  print("My favorite", result, "is Saturday")
```

Key

```
There are 3 fun days in a week.
Two of them are Friday Sunday
My favorite day is Saturday
```