LIST

Tujuan Instruksional :
Bagian ini berisi materi mengenai fungsi *build-in* dan operasi string pada bahasa pemrograman Python.

Kompetensi yang Diharapkan :
Mahasiswa diharapkan mampu memahami penggunaan fungsi dan operasi string.

Waktu Pertemuan : 100 menit

Fungsi *build-in* adalah fungsi yang sudah disediakan oleh Bahasa pemrograman itu sendiri.

1. List Syntax

Cara membuat list

```
list1 = list() # Create an empty list
list2 = list([2, 3, 4]) # Create a list with elements 2, 3, 4
list3 = list(["red", "green", "blue"]) # Create a list with strings
list4 = list(range(3, 6)) # Create a list with elements 3, 4, 5
list5 = list("abcd") # Create a list with characters a, b, c, d
```

Bisa juga dibuat dengan syntax seperti ini

```
list1 = [] # Same as list()
list2 = [2, 3, 4] # Same as list([2, 3, 4])
list3 = ["red", "green"] # Same as list(["red", "green"])
```

List dapat berisi tipe data campuran, contoh

```
list4 = [2, "three", 4]
```

2. Function For List

```
>>> list1 = [2, 3, 4, 1, 32]
>>> len(list1) #length of list1
5
>>> max(list1) #max of list1
32
>>> min(list1) #min of list1
1
>>> sum(list1) #sum of list1
42
>>> import random
>>> random.shuffle(list1) # Shuffle the elements in list1
>>> list1
[4, 1, 2, 32, 3]
```

3. Index Operator

```
myList = [1,3,2,4,5]

#print all element of list with loop
i = 0
while i len(myList):
        print(myList[i])
        i += 1

myList[0] #return 1
myList[1] #return 3
myList[4] #return 5
myList[-1] #return 5
myList[-5] #return 1
```

4. List Slicing [start:end]

Start for first index of list

end for last index of list

```
myList = [1,3,2,4,5]
myList[ :2] #return 1,3,2 #[start:2]
myList[2: ] #return 2,4,5 #[2:end]
myList[1,3] #return 3,2,4
myList[2,-1] #return 2,4,5
```

myList start index is 0
myList end index is 4

5. Operator +,*,in,not in

```
list1 = [1,2]
list2 = [3,4]
list3 = list1 + list2 #[1,2,3,4]
list4 = list1*3 #[1,2,1,2,1,2]
cek1 = 2 in list1 #return true
cek2 = 2 not in list1 #return false
```

6. List Compeheresion

Mengisi list dengan for dan if

```
>>> list1 = [x for x in range(5)] # Returns a list of 0, 1, 2, 3, 4
>>> list1
[0, 1, 2, 3, 4]
>>>
>>> list2 = [0.5 * x for x in list1]
>>> list2
[0.0, 0.5, 1.0, 1.5, 2.0]
>>>
>>> list3 = [x for x in list2 if x < 1.5]
>>> list3
[0.0, 0.5, 1.0]
```

7. List Method

Mengisi list dengan for dan if

append(x: object): None #add x

count(x: object): int #count x

extend(l: list): None #extend list

index(x: object): int #return index of x

insert(index: int, x: object):None #insert x in index

pop(i): object #remove i and return i

remove(x: object): None #remove the first x

reverse(): None //reverse element in list

sort(): None //sort asc

How to use append,count,extend,index,insert

```
>>> list1 = [2, 3, 4, 1, 32, 4]
>>> list1.append(19)
>>> list1
[2, 3, 4, 1, 32, 4, 19]

>>> list1.count(4) # Return the count for number 4
2

>>> list2 = [99, 54]
>>> list1.extend(list2)
>>> list1
[2, 3, 4, 1, 32, 4, 19, 99, 54]

>>> list1.index(4) # Return the index of number 4
2

>>> list1.insert(1, 25) # Insert 25 at position index 1
>>> list1
[2, 25, 3, 4, 1, 32, 4, 19, 99, 54]
```

How to use pop remove reverse sort

```
>>> list1 = [2, 25, 3, 4, 1, 32, 4, 19, 99, 54]
>>> list1.pop(2) #sesuai index
3

x = list1.pop(2) #return 3
>>> list1
[2, 25, 4, 1, 32, 4, 19, 99, 54]

>>> list1.pop()
54
>>> list1
[2, 25, 4, 1, 32, 4, 19, 99]

>>> list1.remove(32) # Remove number 32
>>> list1
[2, 25, 4, 1, 4, 19, 99]

>>> list1.reverse() # Reverse the list
>>> list1
[99, 19, 4, 1, 4, 25, 2]

>>> list1.sort() # Sort the list
>>> list1
[1, 2, 4, 4, 19, 25, 99]
```

8. Splitting a String into a List

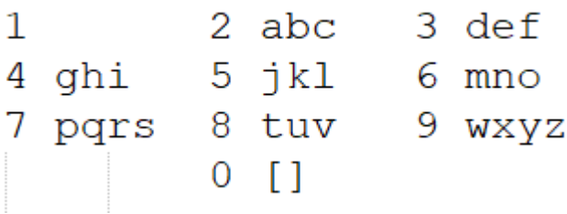
Mengisi list dengan for dan if

```
<syntax>
list.split(string)

<contoh>
myList = "Velcome to my Dudorial"
newList = myList.split(); #split space
newList = ["Velcome","to","my","Dudorial"]

myList2 = "11/10/2019"
newList2 = myList2.split("/"); #split /
[11,10,2019]
```

Soal



1. Dengan gambar di atas, ubahlah inputan string alphanumeric menjadi string numeric.

   input : kurnia
   output: 5588777664442

   input : kurnia M
   output: 558877766444206

   input : abc
   output: 2 22 222

   input : abcdgj9
   output: 2 22 22234599999

   input: 2
   output: 2222

2. Dengan gambar yang sama, ubahlah inputan string numeric menjadi string alphanumeric.

   input: 5588777664442
   output: kurnia

   input: 558877766444206
   output: kurnia M

   input: 2 22 222
   output: abc

   input: 2 22 22234599999
   output: abcdgj9

   input: 2222
   output: 2