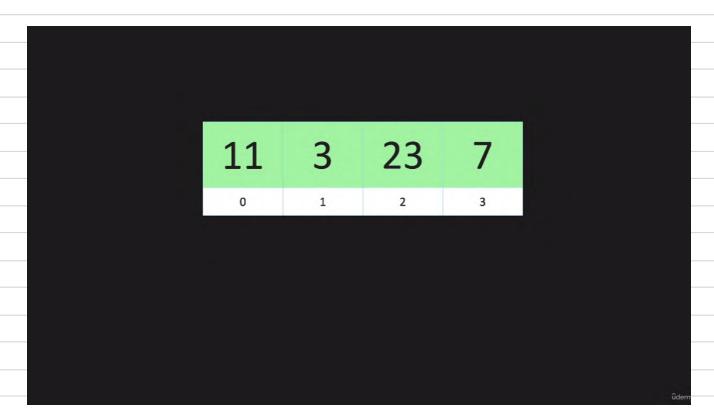
# Struktur Data Meet 03

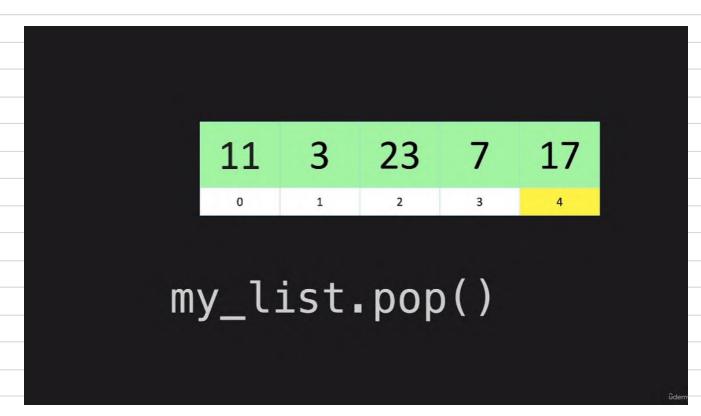


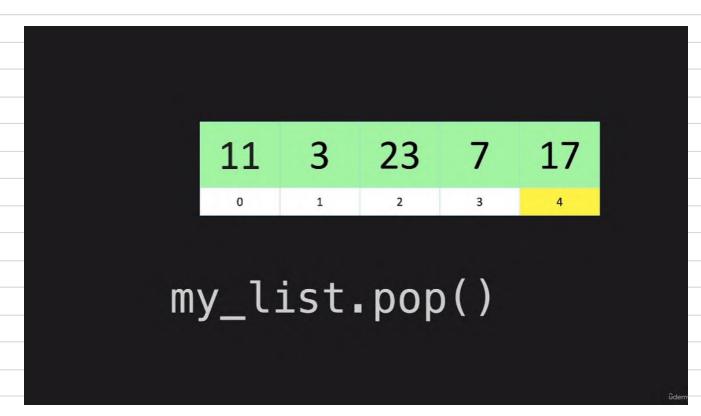
[11,3,23,7]

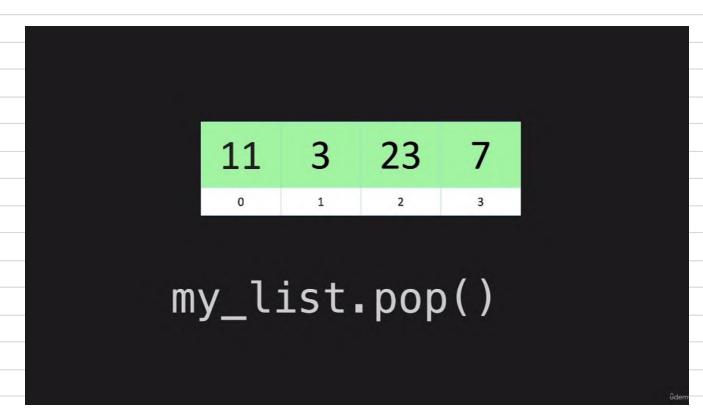




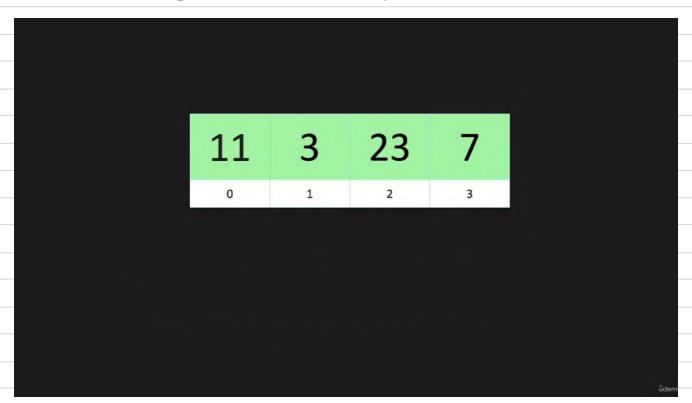




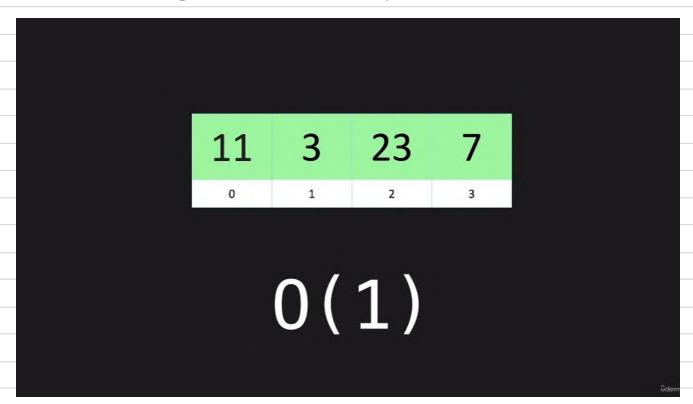




## Apa notasi Big O untuk Operasi tsb?

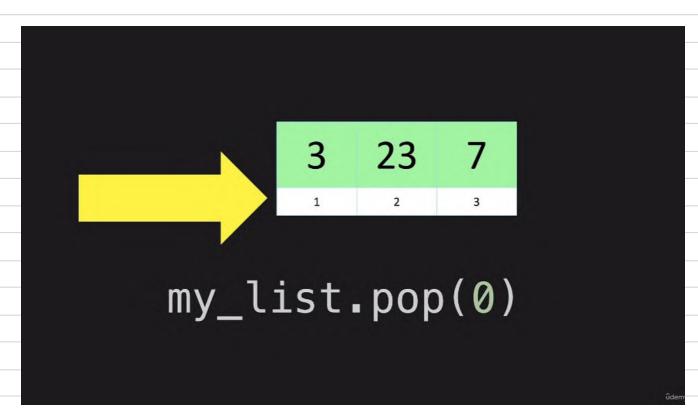


## Apa notasi Big O untuk Operasi tsb?









# Reindexing...



# Reindexing...



# Reindexing...







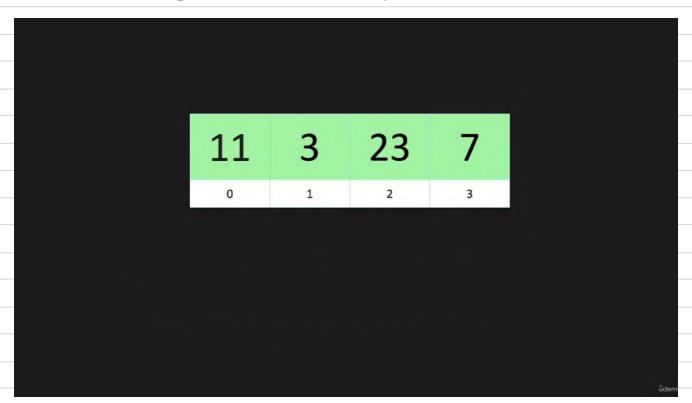




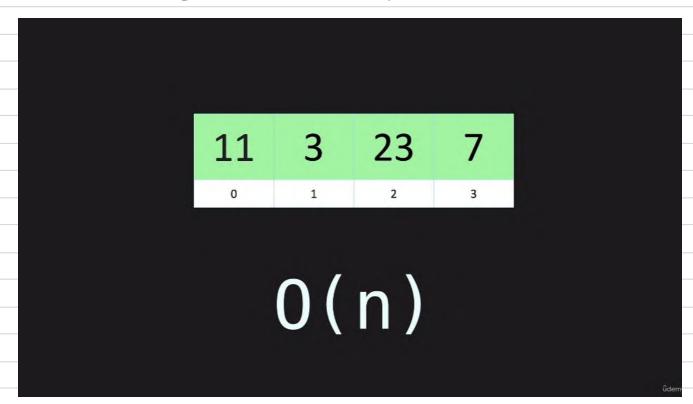




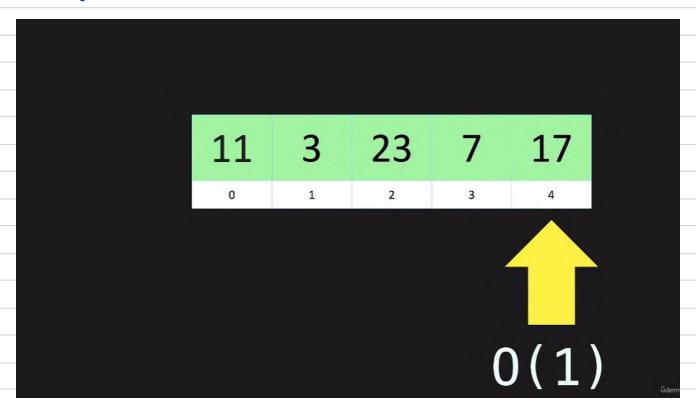
## Apa notasi Big O untuk Operasi tsb?



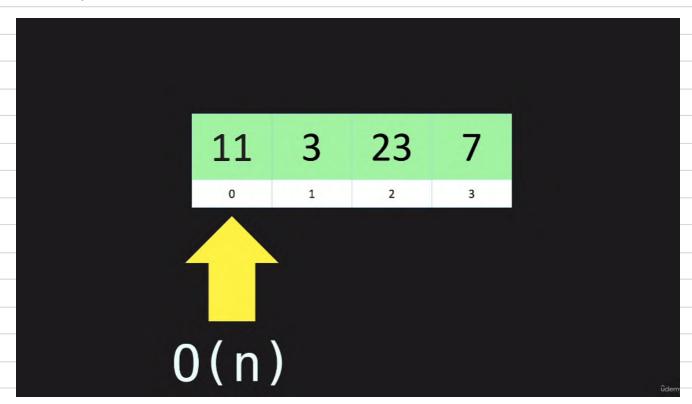
## Apa notasi Big O untuk Operasi tsb?



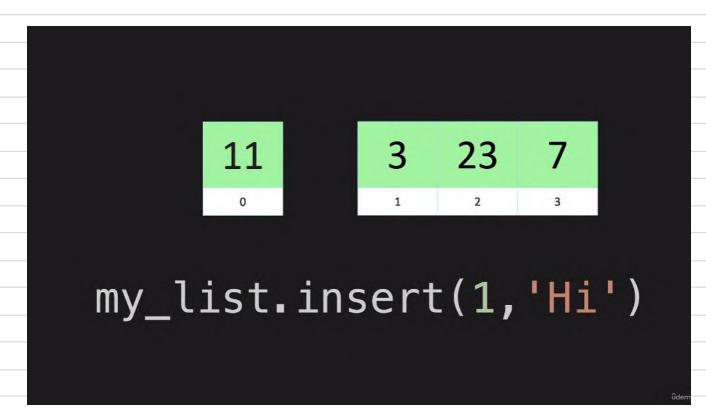
### Big O Operasi Insert dan Delete

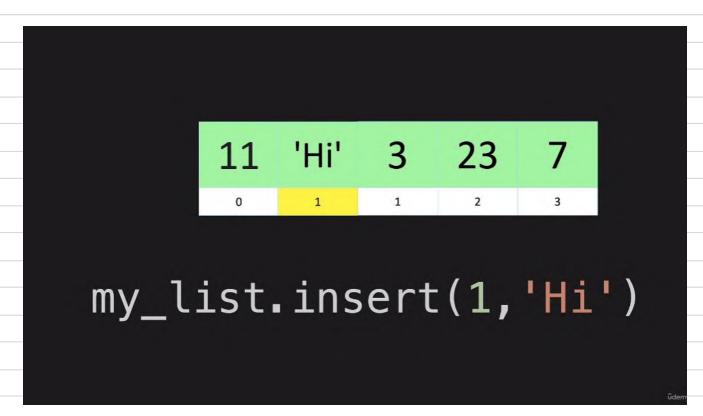


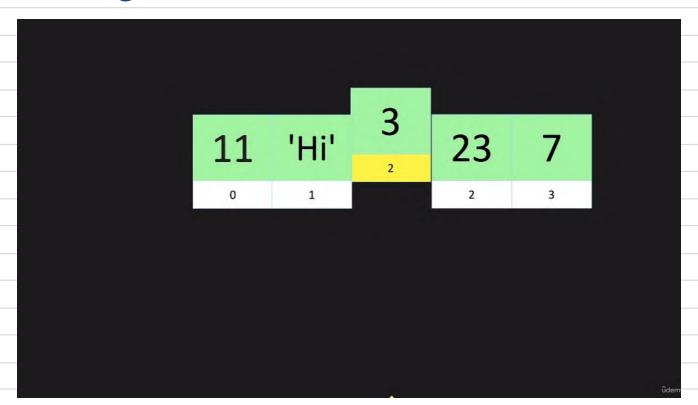
## Big O Operasi Insert dan Delete

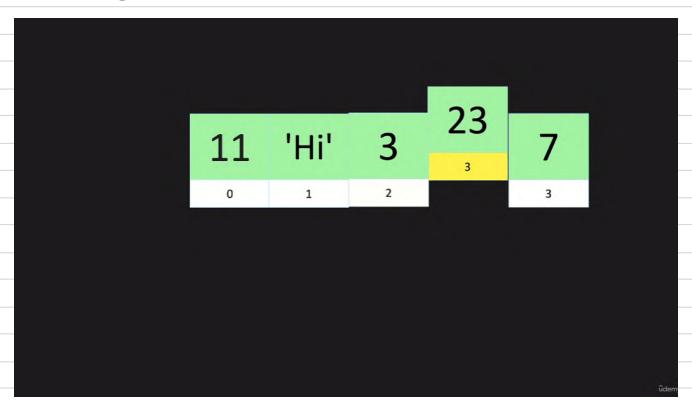


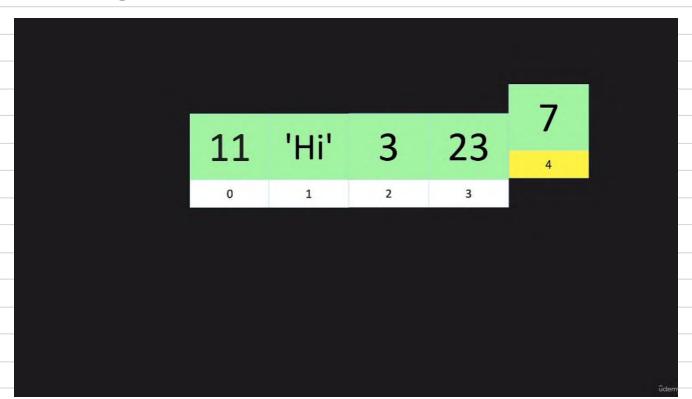


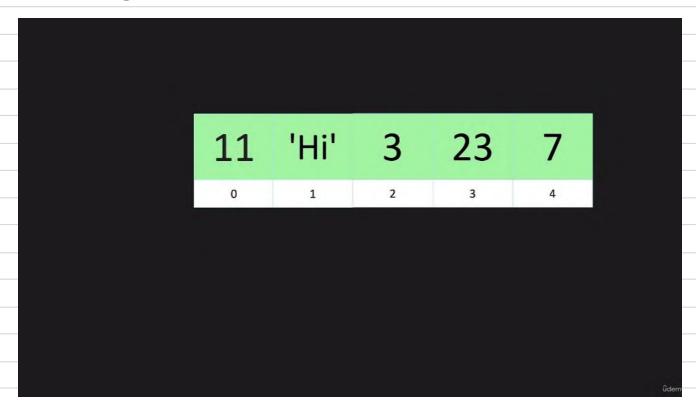




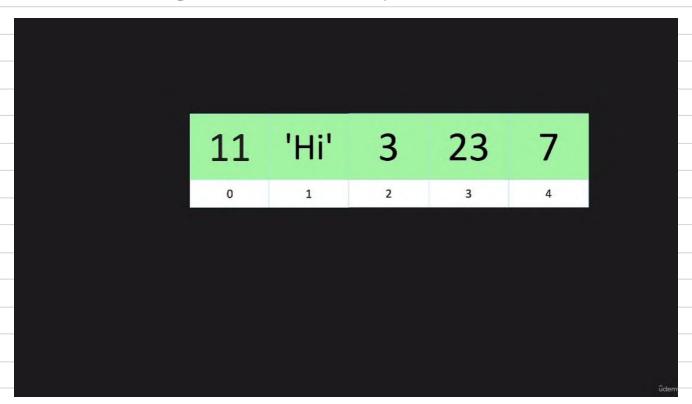




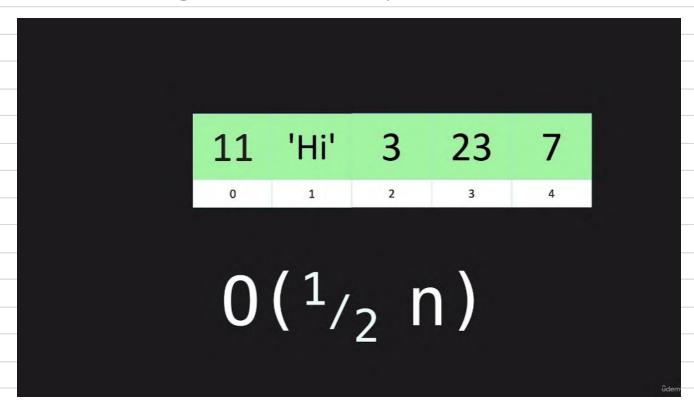




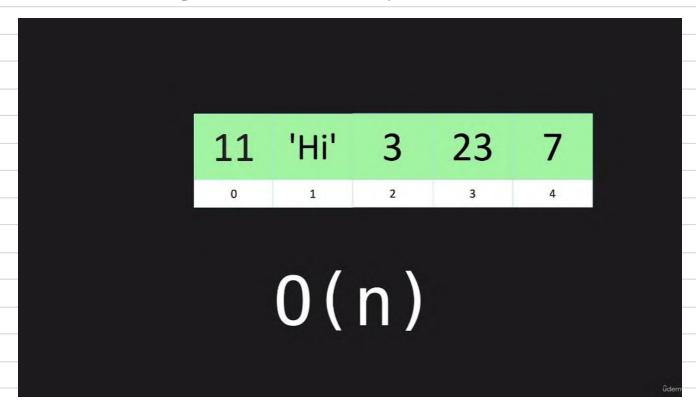
# Apa notasi Big O untuk Operasi tsb?

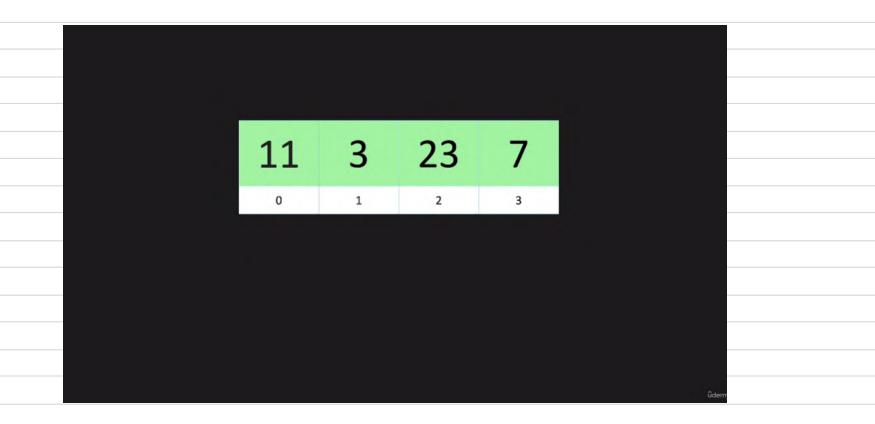


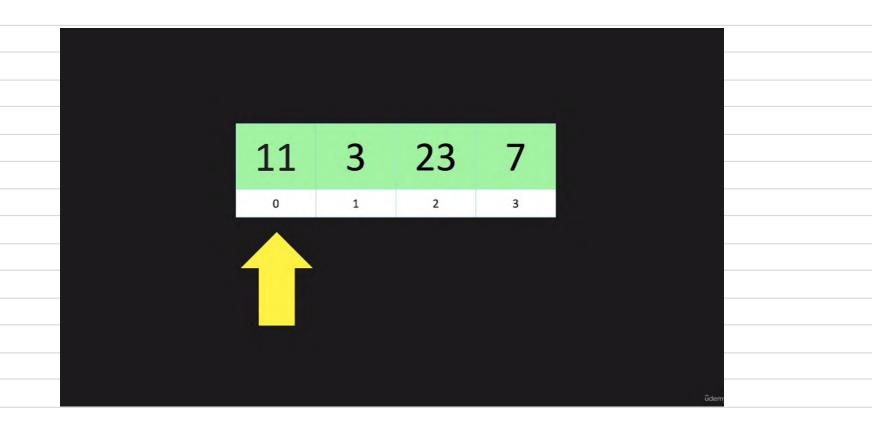
## Apa notasi Big O untuk Operasi tsb?

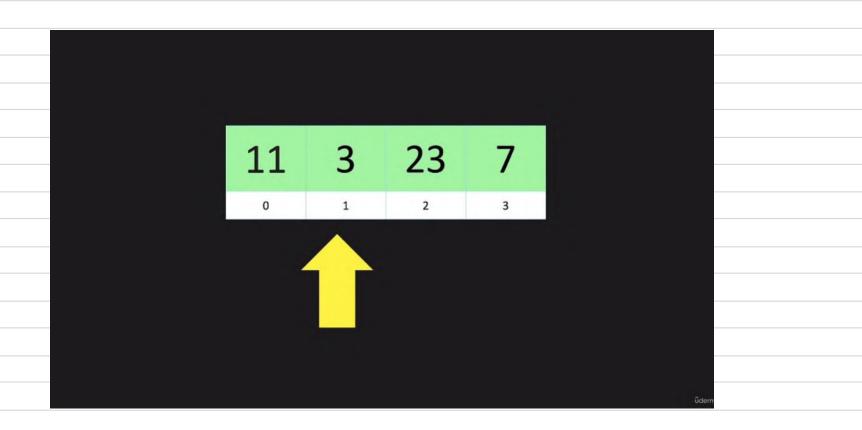


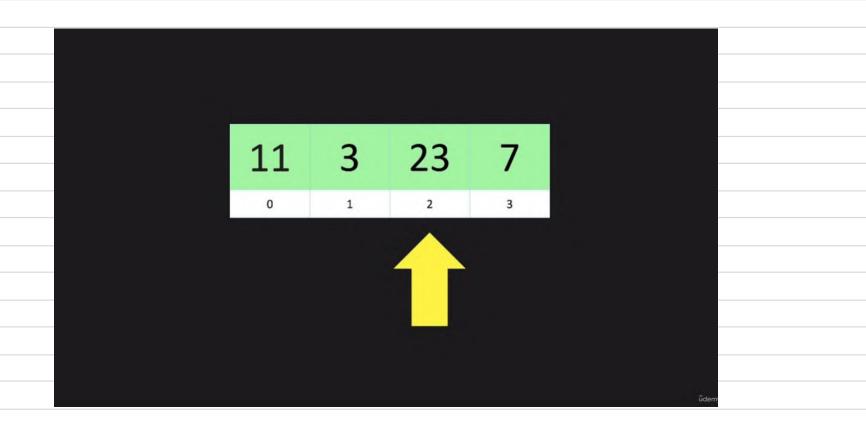
## Apa notasi Big O untuk Operasi tsb?

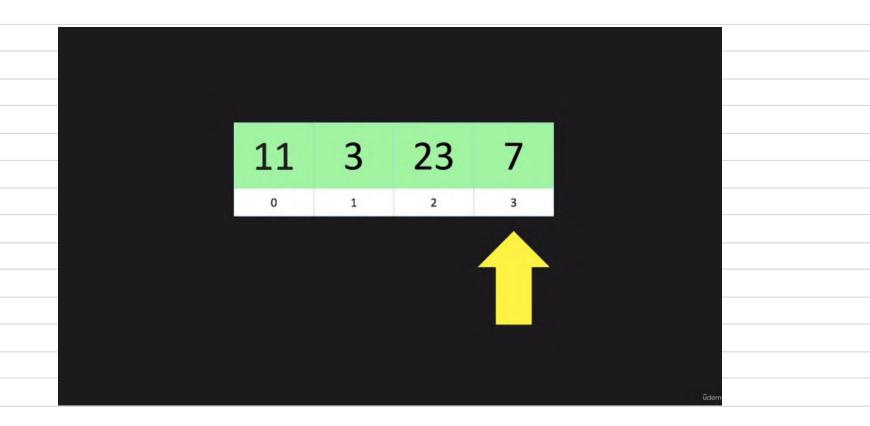




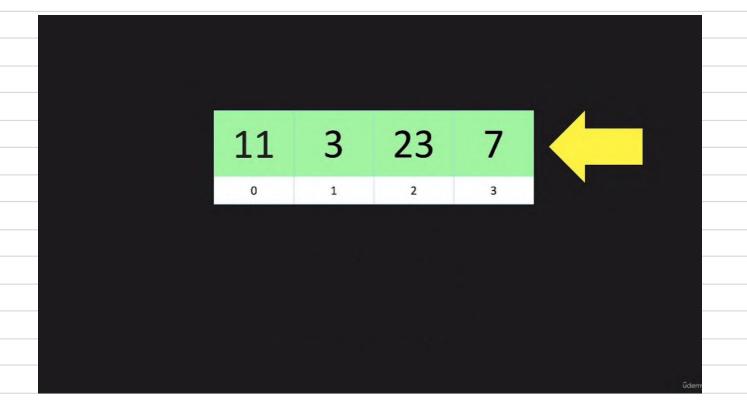




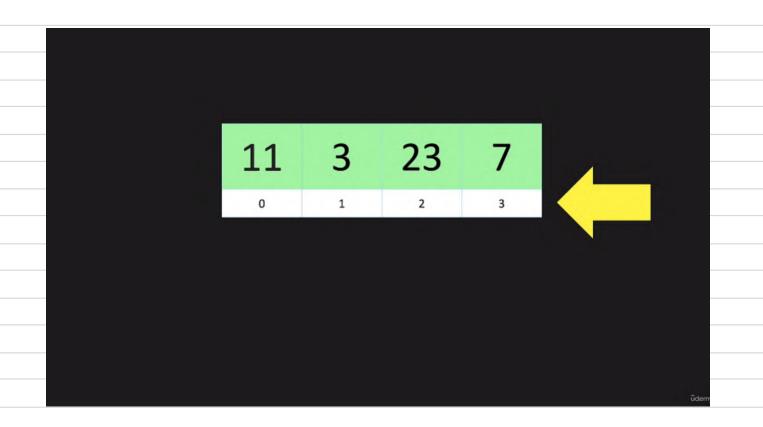




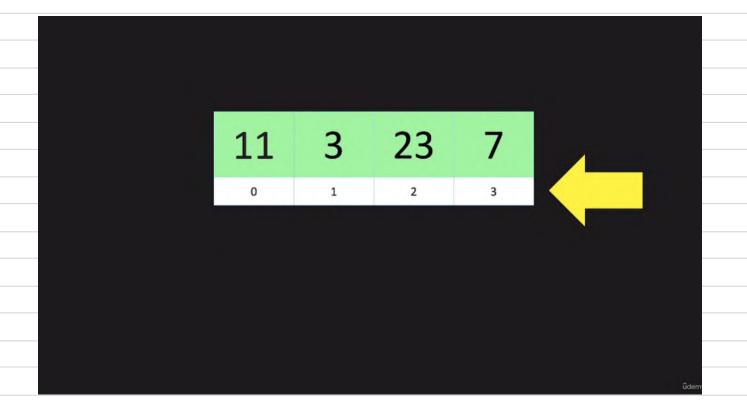
## Apa notasi Big O untuk Operasi tsb?



Search by Index (3)

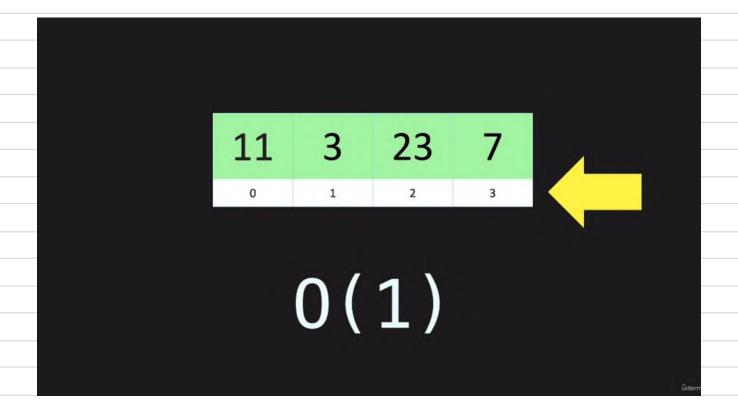


## Apa notasi Big O untuk Operasi tsb?

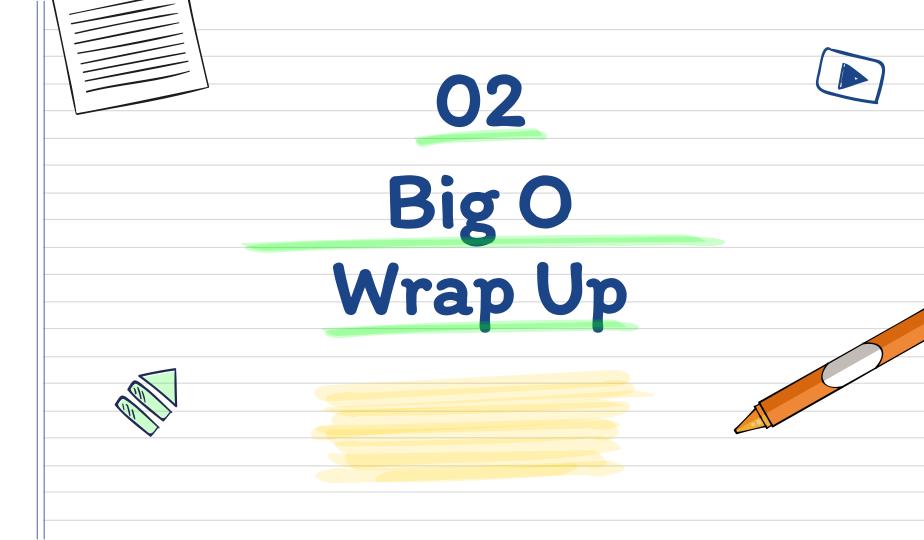


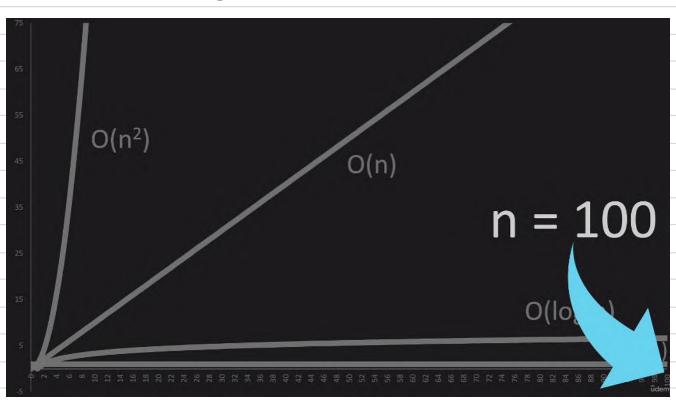
Search by Index (3)

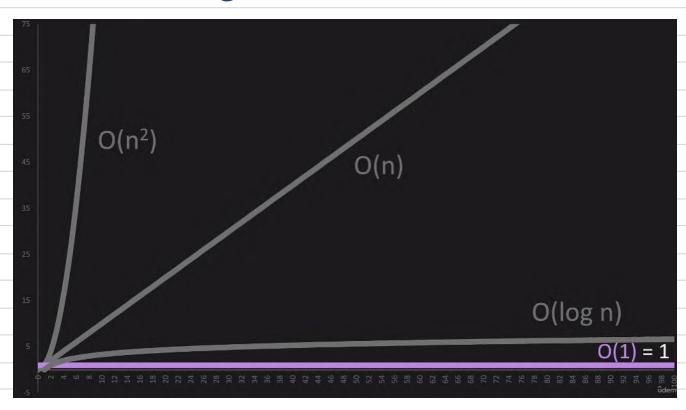
## Apa notasi Big O untuk Operasi tsb? '

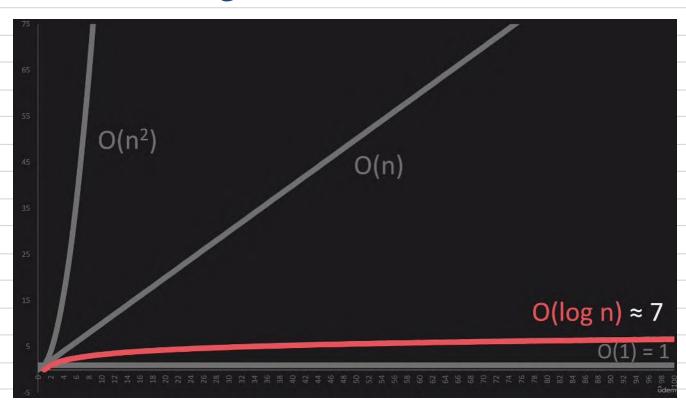


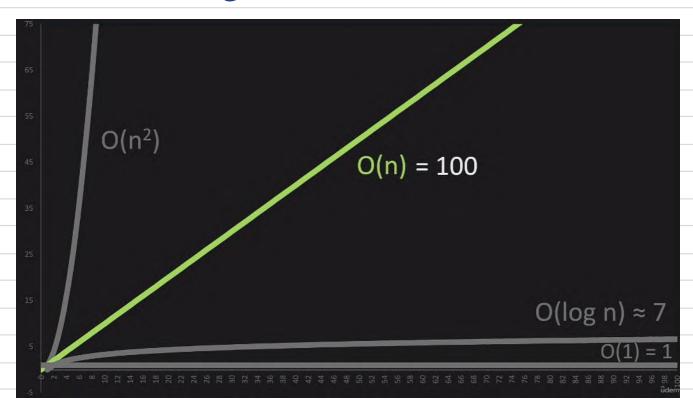
Search by Index (3)

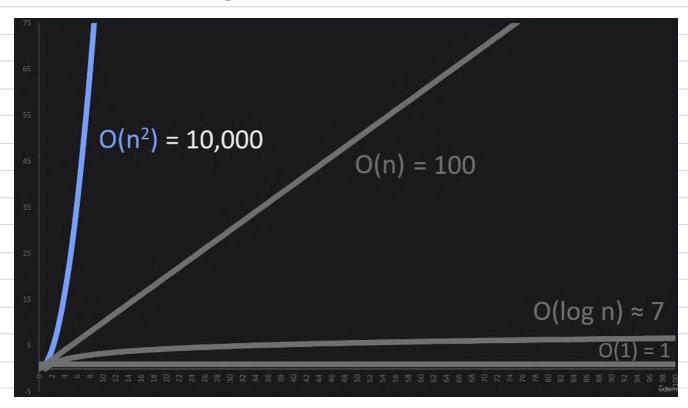


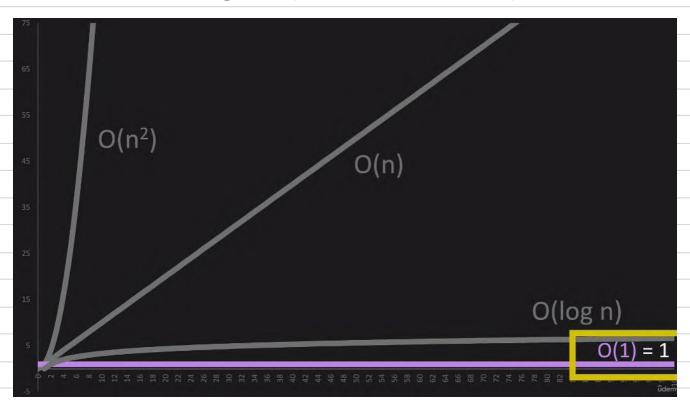


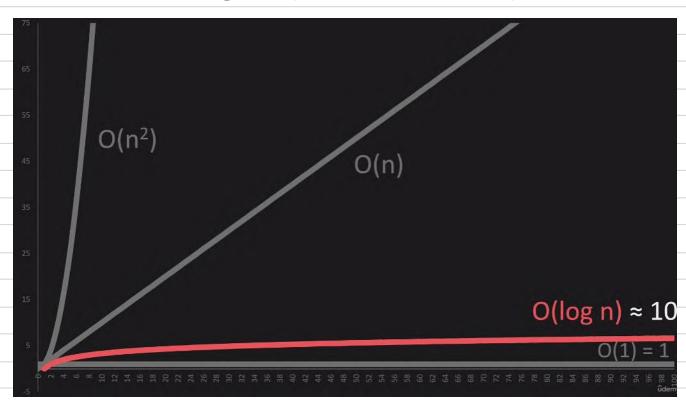


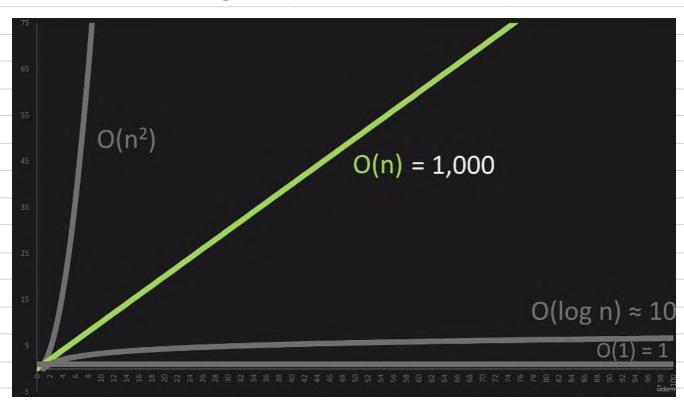


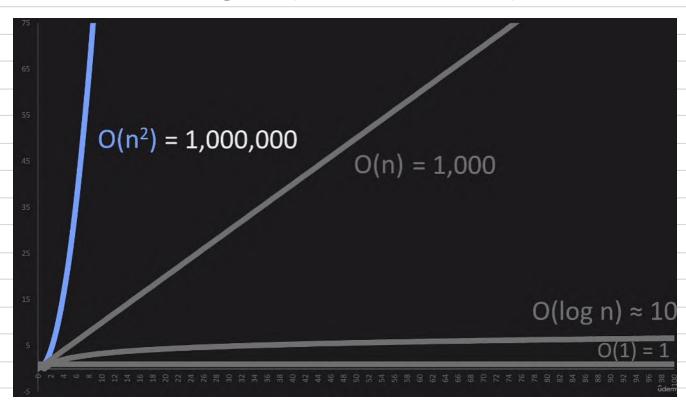




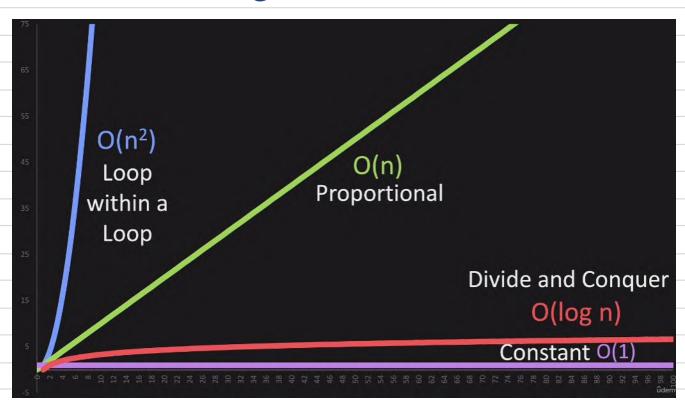


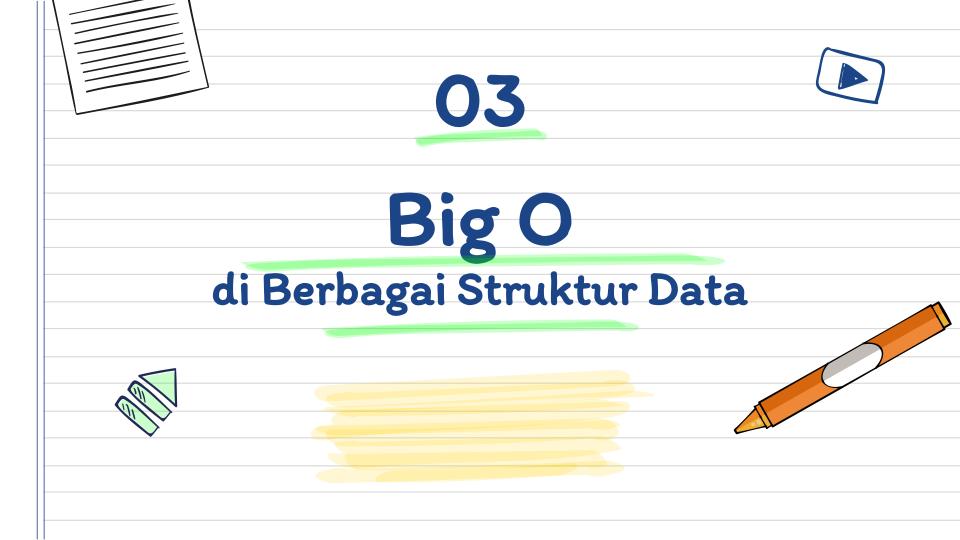






## Istilah 4 Notasi Big O





Big O Cheat Sheet

# Visit: www.bigocheatsheet.com

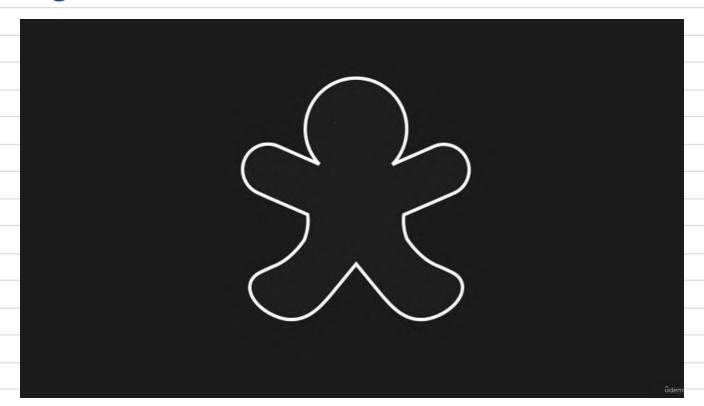




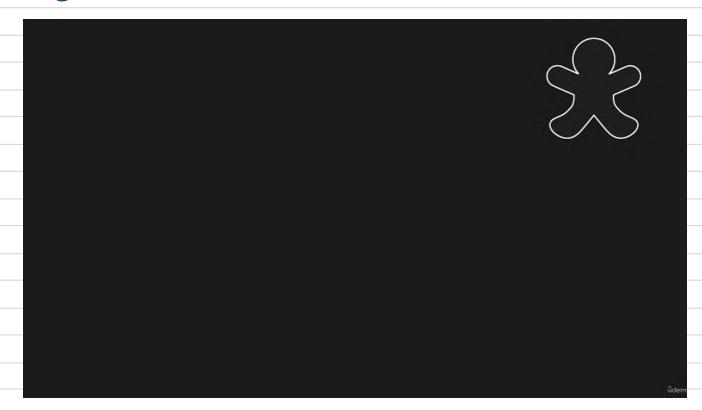
# Apa itu Kelas???



## Analogi Kelas = Cookie Cutter



## Analogi Kelas = Cookie Cutter



```
class Cookie:
   def __init__(self, color):
       self.color = color
```

```
cookie_one = Cookie('green')
```

```
class Cookie:
   def __init__(self, color):
       self.color = color
cookie_one = Cookie('green')
```

```
cookie_two = Cookie('blue')
```

```
class Cookie:
   def __init__(self, color):
       self.color = color
cookie_one = Cookie('green')
cookie_two = Cookie('blue')
```

#### Contoh Class / Kelas

```
class Cookie:
    def __init__(self, color):
        self.color = color
    def get_color(self):
        return self.color
```

#### Contoh Class / Kelas

```
class Cookie:
    def __init__(self, color):
        self.color = color
    def get_color(self):
        return self.color
    def set_color(self, color):
        self.color = color
```

#### Contoh Class / Kelas

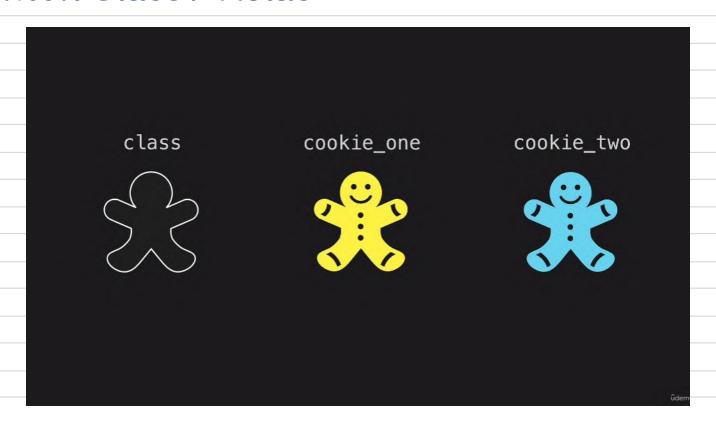
```
class Cookie:
    def __init__(self, color):
        self.color = color
    def get_color(self):
        return self.color
    def set_color(self, color):
        self.color = color
cookie_one = Cookie('green')
cookie_two = Cookie('blue')
```

```
class Cookie:
   def __init__(self, color):
       self.color = color
   def get_color(self):
       return self.color
   def set_color(self, color):
        self.color = color
cookie_one = Cookie('green')
cookie_two = Cookie('blue')
print('Cookie one is', cookie_one.get_color())
print('Cookie two is', cookie_two.get_color())
```

```
class Cookie:
                                                            Cookie one is green
                                                            Cookie two is blue
   def __init__(self, color):
       self.color = color
   def get_color(self):
        return self.color
   def set_color(self, color):
        self.color = color
cookie_one = Cookie('green')
cookie_two = Cookie('blue')
print('Cookie one is', cookie_one.get_color())
print('Cookie two is', cookie_two.get_color())
```

```
マ最合のく
Cookie.py X
     class Cookie:
                                                                  Cookie one is green
                                                                  Cookie two is blue
          def __init__(self, color):
              self.color = color
         def get_color(self):
              return self.color
         def set_color(self, color):
              self.color = color
      cookie_one = Cookie('green')
      cookie two = Cookie('blue')
      print('Cookie one is', cookie_one.get_color())
     print('Cookie two is', cookie_two.get_color())
     cookie one.set color('yellow')
     print('\nCookie one is now', cookie_one.get_color())
 21 print('Cookie two is still', cookie_two.get_color())
```

```
▷ □ …
                                                                                              マ最合のく
Cookie.py X
     class Cookie:
                                                                   Cookie one is green
                                                                   Cookie two is blue
          def __init__(self, color):
              self.color = color
                                                                   Cookie one is now yellow
                                                                   Cookie two is still blue
          def get_color(self):
              return self.color
          def set_color(self, color):
              self.color = color
      cookie_one = Cookie('green')
      cookie two = Cookie('blue')
      print('Cookie one is', cookie_one.get_color())
     print('Cookie two is', cookie_two.get_color())
      cookie one.set color('yellow')
     print('\nCookie one is now', cookie_one.get_color())
 21 print('Cookie two is still', cookie_two.get_color())
                                                                              Ln 22, Col 1 Spaces: 4 UTF-8 LF Python
```



## Mengapa Konsep kelas penting?

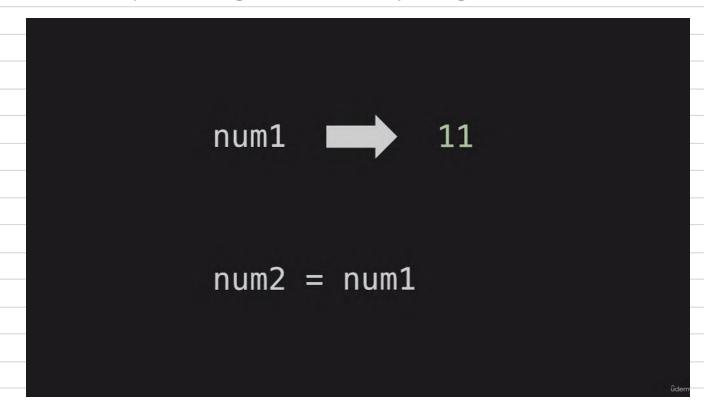
```
class LinkedList:
    def __init__(self, value):
    def append(self, value):
    def pop(self):
    def prepend(self, value):
    def insert(self, index, value):
    def remove(self, index):
```



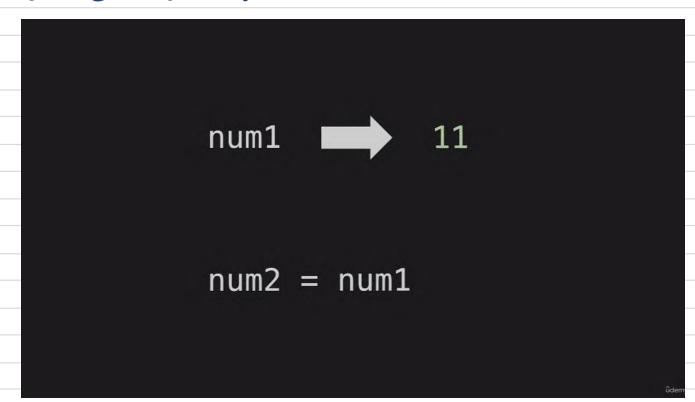
## Diketahui potongan kode program

```
num1 = 11
num2 = num1
```

## Diketahui potongan kode program



#### Apa yang terjadi pada num 2?????



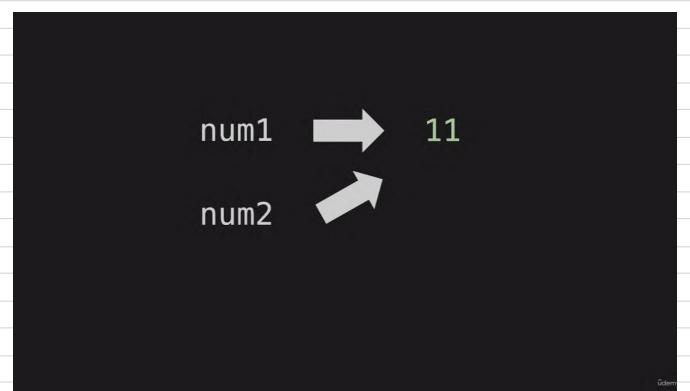
# Apa yang terjadi pada num 2??????





## Apa yang terjadi pada num 2??????





### Apa yang terjadi pada num 2?????

```
num1 = 11
num2 = num1
print("Before num2 value is updated:")
print("num1 =", num1)
print("num2 =", num2)
print("\nnum1 points to:", id(num1))
print("num2 points to:", id(num2))
```

#### Apa yang terjadi pada num 2?????

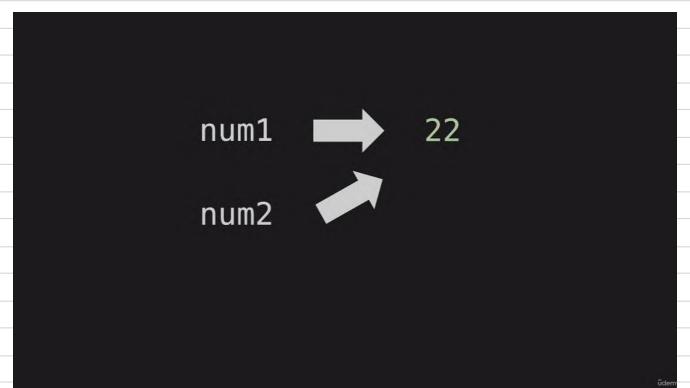
```
num1 = 11
                                                  Before num2 value is updated:
                                                  num1 = 11
num2 = num1
                                                  num2 = 11
print("Before num2 value is updated:")
                                                  num1 points to: 140727958956656
print("num1 =", num1)
                                                  num2 points to: 140727958956656
print("num2 =", num2)
print("\nnum1 points to:", id(num1))
print("num2 points to:", id(num2))
```

## Diketahui potongan kode program

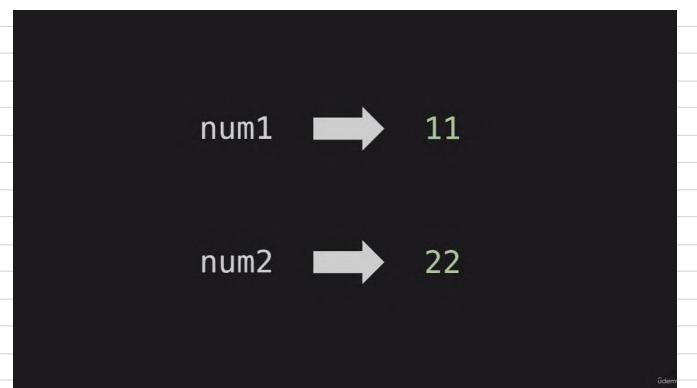












```
num1 = 11
num2 = num1
print("Before num2 value is updated:")
print("num1 =", num1)
print("num2 =", num2)
print("\nnum1 points to:", id(num1))
print("num2 points to:", id(num2))
```

```
num1 = 11
num2 = num1
print("Before num2 value is updated:")
print("num1 =", num1)
print("num2 =", num2)
print("\nnum1 points to:", id(num1))
print("num2 points to:", id(num2))
num2 = 22
print("\nAfter num2 value is updated:")
print("num1 =", num1)
print("num2 =", num2)
print("\nnum1 points to:", id(num1))
print("num2 points to:", id(num2))
```

```
num1 = 11
                                                  Before num2 value is updated:
                                                  num1 = 11
num2 = num1
                                                  num2 = 11
print("Before num2 value is updated:")
                                                  num1 points to: 140710779218544
print("num1 =", num1)
                                                  num2 points to: 140710779218544
print("num2 =", num2)
                                                  After num2 value is updated:
print("\nnum1 points to:", id(num1))
                                                  num1 = 11
print("num2 points to:", id(num2))
                                                  num2 = 22
num2 = 22
                                                  num1 points to: 140710779218544
                                                  num2 points to: 140710779218896
print("\nAfter num2 value is updated:")
print("num1 =", num1)
print("num2 =", num2)
print("\nnum1 points to:", id(num1))
print("num2 points to:", id(num2))
```

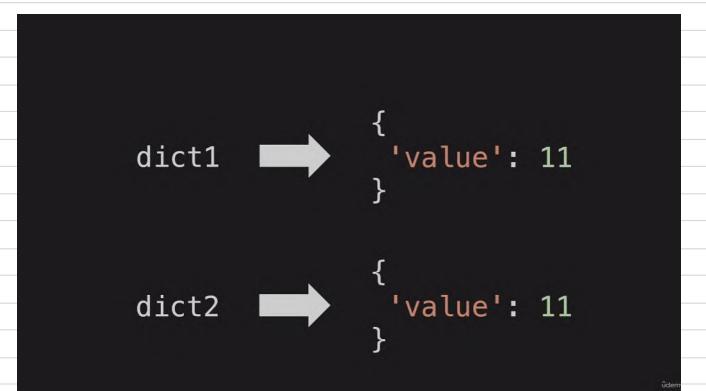
## Diketahui potongan kode program

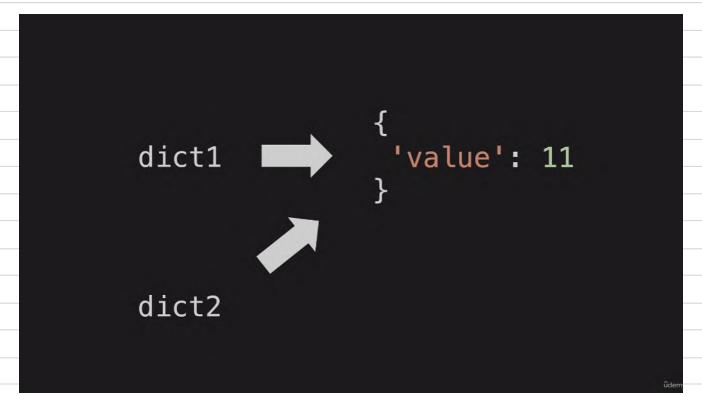
```
'value': 11
dict1
```

## Diketahui potongan kode program

```
'value': 11
dict1
   dict2 = dict1
```

```
'value': 11
dict1
   dict2 = dict1
```





```
dict1 = {
         'value': 11
dict2 = dict1
print("Before value is updated:")
print("dict1 =", dict1)
print("dict2 =", dict2)
print("\ndict1 points to:", id(dict1))
print("dict2 points to:", id(dict2))
```

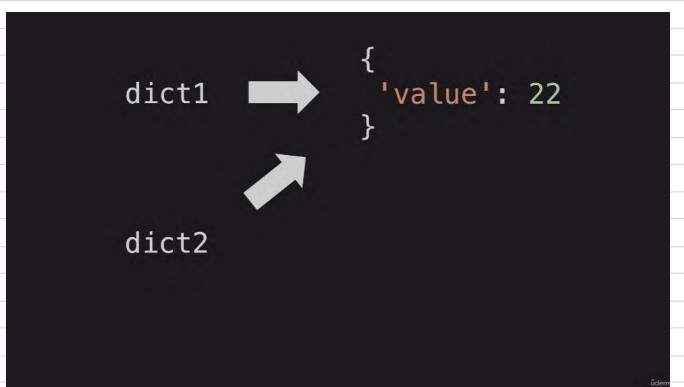
```
dict1 = {
                                                  Before value is updated:
         'value': 11
                                                  dict1 = {'value': 11}
                                                  dict2 = {'value': 11}
dict2 = dict1
                                                  dict1 points to: 140191356718080
                                                  dict2 points to: 140191356718080
print("Before value is updated:")
print("dict1 =", dict1)
print("dict2 =", dict2)
print("\ndict1 points to:", id(dict1))
print("dict2 points to:", id(dict2))
```

#### Diketahui potongan kode program

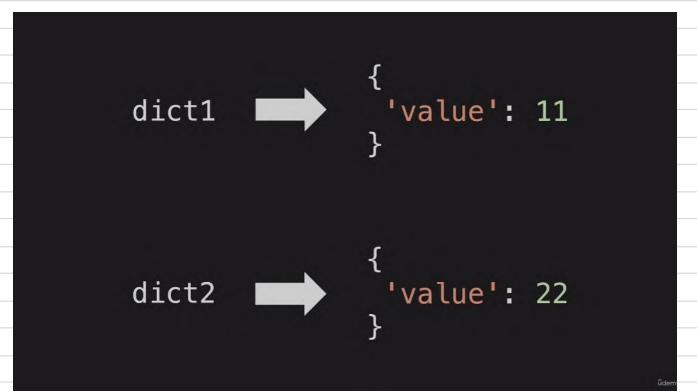
```
'value': 11
dict1
dict2
dict2['value'] = 22
```

```
'value': 11
dict1
dict2
dict2['value'] = 22
```



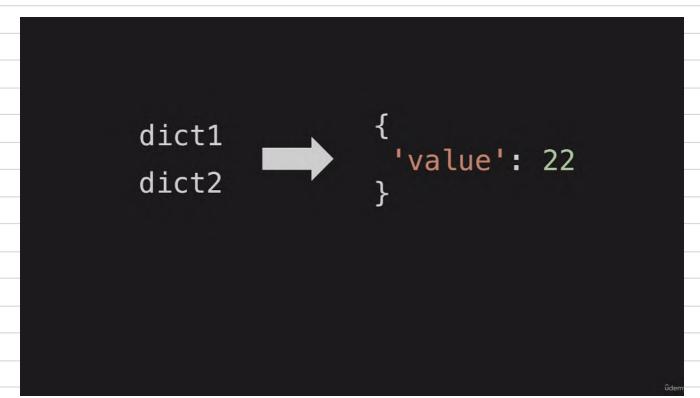


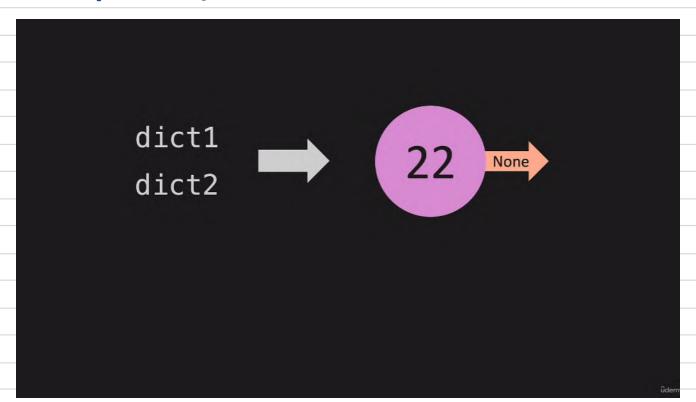


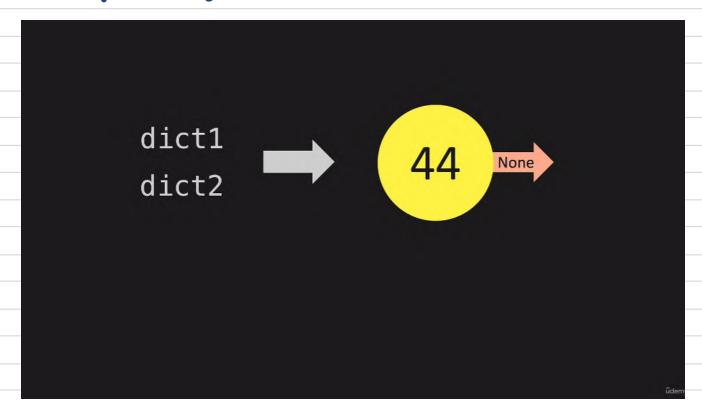


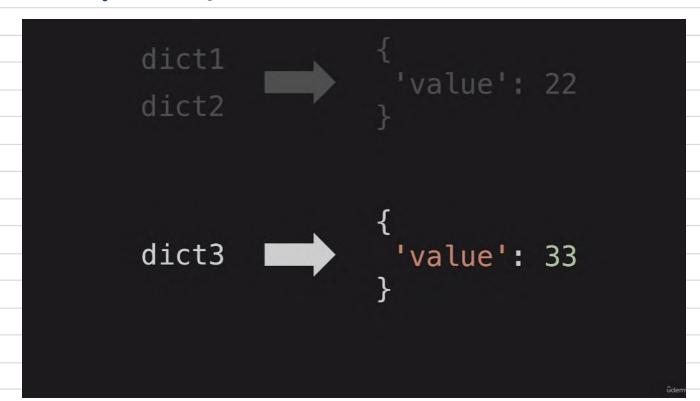
```
dict1 = {
         'value': 11
dict2 = dict1
print("Before value is updated:")
print("dict1 =", dict1)
print("dict2 =", dict2)
print("\ndict1 points to:", id(dict1))
print("dict2 points to:", id(dict2))
```

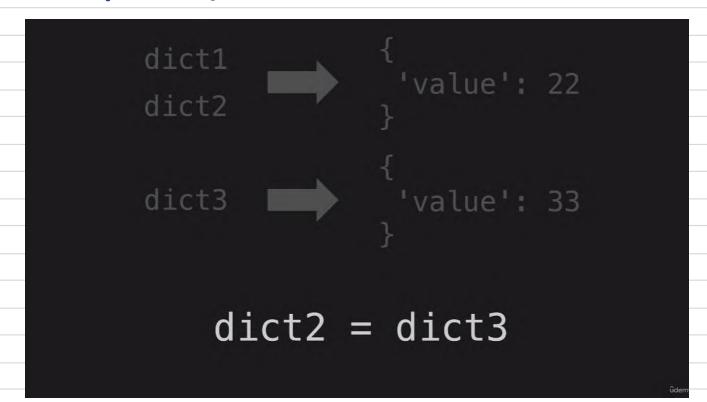
```
dict1 = {
                                                  Before value is updated:
         'value': 11
                                                  dict1 = {'value': 11}
                                                  dict2 = {'value': 11}
dict2 = dict1
                                                  dict1 points to: 140642597538816
                                                  dict2 points to: 140642597538816
print("Before value is updated:")
print("dict1 =", dict1)
                                                  After value is updated:
print("dict2 =", dict2)
                                                  dict1 = {'value': 22}
                                                  dict2 = {'value': 22}
print("\ndict1 points to:", id(dict1))
print("dict2 points to:", id(dict2))
                                                  dict1 points to: 140642597538816
                                                  dict2 points to: 140642597538816
dict2['value'] = 22
print("\nAfter value is updated:")
print("dict1 =", dict1)
print("dict2 =", dict2)
print("\ndict1 points to:", id(dict1))
print("dict2 points to:", id(dict2))
```

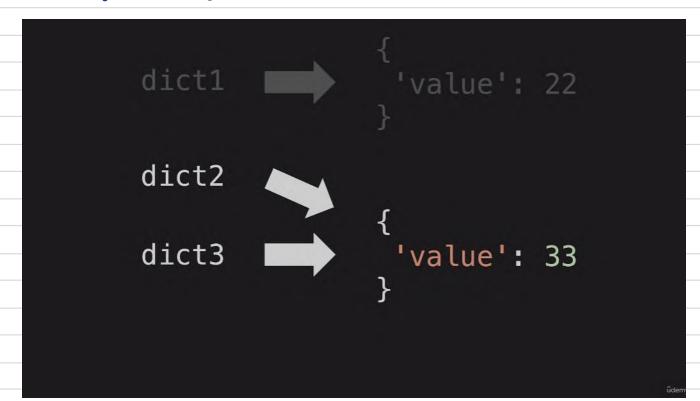


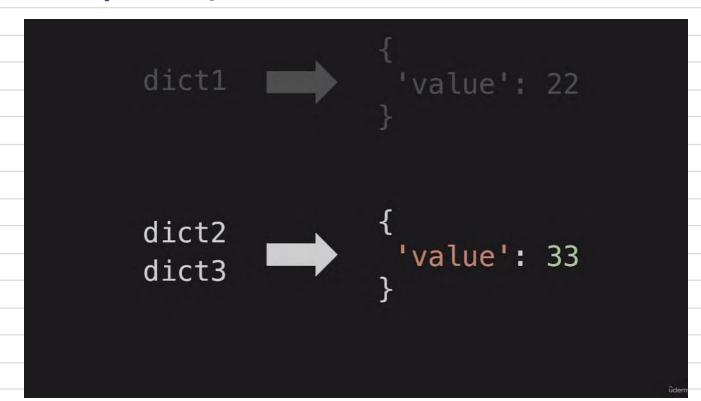




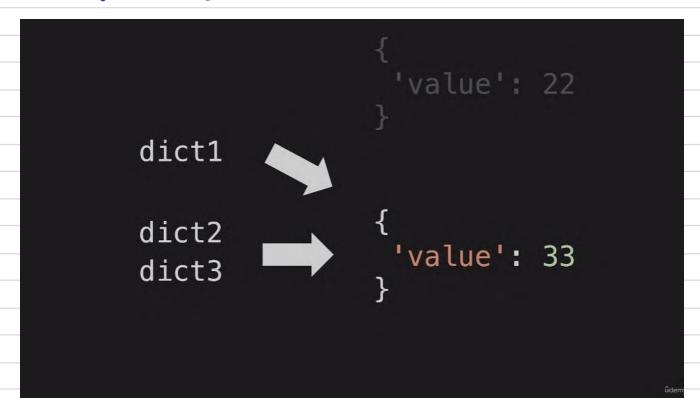


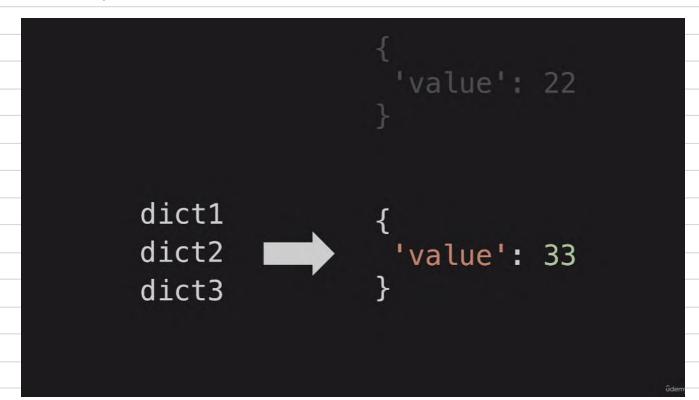






```
dict1
              'value': 22
dict2
              'value': 33
dict3
    dict1 = dict2
```





```
'value': 22
dict1
dict2
            'value': 33
dict3
```



# Terima Kasih

# Ada Pertanyaan?