

toPython-200420

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1 Important Tools for our goals

list

if statement

loops (for, while, ...)

google and net :)

1.1 list and tuple

1.1.1 Define and call

```
[75]: List1 = [1, 'a', "a", 1.5]  
List2= [1, 2, 3, 4, 5]
```

```
[12]: print(List1)  
print (List2)
```

```
[1, 'a', 'a', 1.5]  
[1, 2, 3, 4]
```

```
[77]: L3= List2 [1:]  
print(L3)
```

```
[2, 3, 4, 5]
```

```
[30]: T= (1, 2, 3)
```

1.1.2 Assignment to list and tuple

```
[78]: L3[1]= 15  
print (L3)
```

```
[2, 15, 4, 5]
```

```
[33]: T[1]= 10
```

```

↳
-----
      TypeError                                Traceback (most recent call↳
↳last)

    <ipython-input-33-b212168b6040> in <module>()
----> 1 T[1]= 10

      TypeError: 'tuple' object does not support item assignment
```

```
[35]: type (L3)
```

```
[35]: list
```

```
[76]: type (T)
```

```
[76]: tuple
```

2 Loops and Conditionals

while loop + if statement

```
[38]: i= 0
      while True:
          i+= 1
          print (i)

          if i>=10:
              break
```

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

```
[41]: i= 0
      while i<=10:
          print (i)
          i+= 1
```

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

2.0.1 difference between assignment and conditional statement

```
[42]: x= 10
```

```
[44]: x==11
```

```
[44]: False
```

for loop

```
[51]: for i in range (0, 10, 3):
      print (i)
```

```
0
3
6
9
```

```
[46]: for i in List2:
      print (i**2)
```

```
1
4
9
16
25
```

2.0.2 *append to a list

```
[53]: L10= [1]
      print (L10)

      L10.append (10)
      print (L10)
```

```
[1]
[1, 10]
```

2.0.3 How to make a list:

```
[57]: L10= []
      for i in range (11):
          L10.append (i**2)

      print (L10)
```

```
[0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
```

```
[59]: L10_2= [x**2 for x in range (11)]
      print (L10_2)
```

```
[0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
```

2.1 Lets try to solve an algorithm problem

we are trying to find the sum of the first 1000 natural numbers that are multiples of 3 or 5:

check if x is a multiple of 5:

```
[80]: x= 54
      print (x%5 == 0)
```

```
False
```

check if x is a multiple of 3 or 5:

```
[68]: (x%3 == 0) or (x%5 == 0)
```

```
[68]: True
```

Get to the answer:

```
[74]: result = 0
      for x in range (1, 1000):
          if (x%3 == 0) or (x%5 == 0):
              # print (x)
```

```
    result += x  
  
print (result)
```

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[]: