Programare I
Curs 2. Partea 1. Structuri de date în Python

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```
In [3]: s = 0


In [4]: s


In [5]: i = 1


In [6]: while i <= 10:
   ...:     s = s + i
   ...:     i = i + 1
   ...:


In [7]: print(s)
55


In [8]: while i <= 100:
   ...:     s = s + i
   ...:     i = i + 1
   ...:


In [9]:


In [9]: s
```

```
In [10]: s = 0


In [11]: s


In [12]: while i <= 100:
    ...:     s = s + i
    ...:     i = i + 1
    ...:


In [13]:


In [13]: s


In [14]: i = 1


In [15]: s


In [16]: i


In [17]: while i <= 100:
    ...:     s = s + i
    ...:     i = i + 1
    ...:


In [18]:


In [18]: s
```

```
In [19]: (100 * 101) / 2
```

```
In [20]: (100 * 101) // 2
```

```
In [21]: x = int(input('Numarul de ghicit:'))
Numarul de ghicit:14
```

```
In [22]: x
```

```
In [23]: y = int(input('Ghiceste numarul:'))
Ghiceste numarul:12
```

```
In [24]: while y != x:
    ...:     y = int(input('Ghiceste numarul:'))
    ...:
Ghiceste numarul:12
Ghiceste numarul:12
Ghiceste numarul:12
Ghiceste numarul:10
Ghiceste numarul:1
Ghiceste numarul:-2
Ghiceste numarul:1
Ghiceste numarul:14
```

```
In [25]: l = [1,2,3,4,5,'ana']
```

```
In [26]: type(l)
```

```
In [27]: l[0]


In [28]: range(1,10)


In [29]: l = range(1,10)


In [30]: l


In [31]: print(l)
range(1, 10)


In [32]: for el in l:
    ...:     print(el)
    ...:
1
2
3
4
5
6
7
8
9


In [33]: for x in range(1,10,2):
    ...:     print(x,end = ' ')
    ...:
1 3 5 7 9
In [34]: for x in range(10, 1, -1):
```

```
    ...:     print(x,end = ' ')
    ...:
10 9 8 7 6 5 4 3 2
In [35]: x = 1


In [36]: while True:
    ...:     if x == 3:
    ...:         break
    ...:     print(x, end = ' ')
    ...:     x += 1
    ...:
1 2
In [37]: for i in range(3):
    ...:     for j in range(i):
    ...:         print('*')
    ...:     print()
    ...:


*


*
*




In [38]: for i in range(3):
    ...:     for j in range(i):
    ...:         print('*',end=' ')
    ...:     print()
```

```
    ...:
```

```
*
* *
```

```
In [39]: for i in range(13):
    ...:     for j in range(i):
    ...:         print('*',end=' ')
    ...:     print()
    ...:
```

```
*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * * * *
* * * * * * * *
* * * * * * * * *
* * * * * * * * * *
* * * * * * * * * * *
* * * * * * * * * * * *
```

```
In [40]: for i in range(13):
    ...:     for j in range(13):
    ...:         print('*',end=' ')
    ...:     print()
    ...:
```

```
* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *
```

```
In [41]: l = [1,2,3,4]
```

```
In [42]: l
```

```
In [43]: print(l)
[1, 2, 3, 4]
```

```
In [44]: l = [1, 'ana' , [1,2,3,4] , 2.5]
```

```
In [45]: l
```

```
In [46]: type(l[0])
```

```
In [47]: for el in l:
```

```
    ...:     print(el)
    ...:
1
ana
[1, 2, 3, 4]
2.5

In [48]: for el in l:
    ...:     print(el,type(el))
    ...:
1 <class 'int'>
ana <class 'str'>
[1, 2, 3, 4] <class 'list'>
2.5 <class 'float'>

In [49]: type(l)

In [50]: l[3] = 'asd'

In [51]: l

In [52]: l.append(['ana'])

In [53]: l

In [54]: l.pop()

In [55]: l
```

```
In [56]: l.insert(2, 'delia')

In [57]: l

In [58]: l.remove(2)
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-58-2110d8e9703c> in <module>
----> 1 l.remove(2)

ValueError: list.remove(x): x not in list

In [59]: l.remove('delia')

In [60]: l

In [61]: del l[1]

In [62]: l

In [63]: l[1::]

In [64]: l[1::2]

In [65]: l[::-1]

In [66]: l[::]
```

```
In [67]: l = [1, 2, 3, 4]

In [68]: sorted(l)

In [69]: l = [4,2,1,3]

In [70]: sorted(l)

In [71]: l

In [72]: l.sort()

In [73]: l

In [74]: t = ()

In [75]: type(t)

In [76]: t = (1,2,3)

In [77]: t[0] = 1
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-77-c8aeb8cd20ae> in <module>
----> 1 t[0] = 1

TypeError: 'tuple' object does not support item assignment

In [78]: t = (2,1)
```

```
In [79]: t
```

```
In [80]: t = (1,2)
```

```
In [81]: t
```

```
In [82]: x = 2 , y = 3
```

```
  File "<ipython-input-82-5a7b1818df25>", line 1

    x = 2 , y = 3

        ^

SyntaxError: cannot assign to literal
```

```
In [83]: x, y = 2 ,3
```

```
In [84]: x, y
```

```
In [85]: (x, y) = (2,3)
```

```
In [86]: (x,y)
```

```
In [87]: type((x,y))
```

```
In [88]: x
```

```
In [89]: y
```

```
In [90]: (x,y) = (y,x)

In [91]: x

In [92]: y

In [93]: (x,y,z) = (2,3,0)

In [94]: x,y,z

In [95]: x,y,z = x+1, y+1, z+1

In [96]: x,y,z

In [97]: t.sort()
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
<ipython-input-97-42b32fd31977> in <module>
----> 1 t.sort()

AttributeError: 'tuple' object has no attribute 'sort'

In [98]: sorted(t)

In [99]: t

In [100]: t[1::]

In [101]: x = (2)
```

```
In [102]: x
```

```
In [103]: type(x)
```

```
In [104]: x = ('ana')
```

```
In [105]: x
```

```
In [106]: type(x)
```

```
In [107]: 5 * [1,2,3,4]
```

```
In [108]: ['ana',[1,2]] + [1,2,3,4]
```

```
In [109]:
```