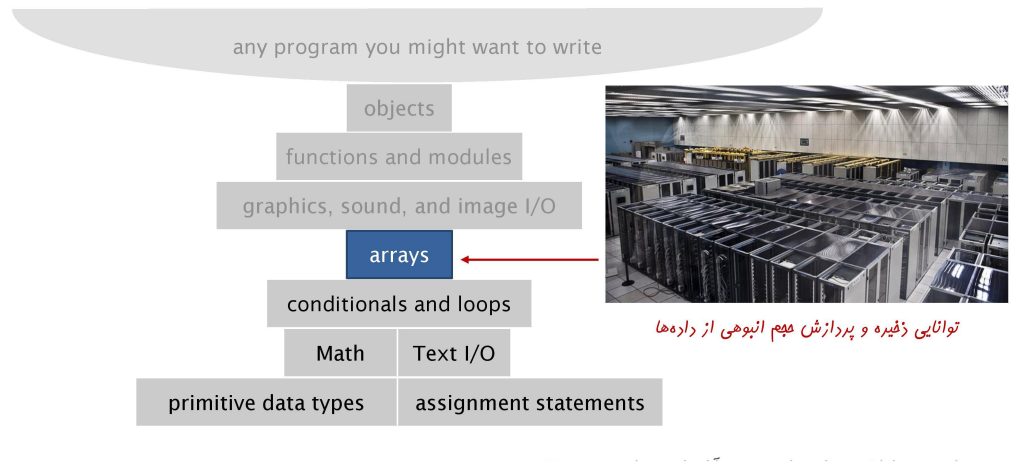


اجزای برنامه‌نویسی



```
In [ ]: """
        Tuple
        """
```

```
In [ ]: t = ('English', 'History', 'Mathematics')
print(t)
print(type(t)) # <class 'tuple'>
print(len(t))  # 3
```

```
In [ ]: print(t[0])      # English
print(t[1:3])    # ('History', 'Mathematics')
```

```
In [ ]: print(t.index('English')) # 0
print('English' in t)             # True
```

```
In [ ]: # t[0] = 'art' # error : tuples are immutable
```

```
In [ ]: for i in t:
    print(f'I like to read {i}')
...
I like to read English
I like to read History
I like to read Mathematics
...
```

```
In [ ]: t = (1, 9, 2)
        print(sum(t))      # 12
        print(max(t))      # 9
        print(min(t))      # 1
        print(t.count(9))  # 1
        print(t*2)         # (1, 9, 2, 1, 9, 2)
```

```
In [ ]: print(tuple(reversed(t))) # (2, 9, 1)
```

```
In [ ]: t = (3,)
        s = ('a',)
```

```
In [ ]: t1 = (1,2)
        t2 = (2,1)
        print(t1 == t2)  # False
```

```
In [ ]: # append ?
        t = (4, 6)
        t = t + (9,)
        print(t)         # (4, 6, 9)
```

```
In [ ]: # or
        t = (4, 6)
        a = list(t)
        a.append(9)
        t = tuple(a)
        print(t)         # (4, 6, 9)
```

```
In [ ]: # remove ?
        t = (4, 7, 2, 9, 8)
        x = list(t)
        x.remove(2)
        t = tuple(x)
        print(t)         # (4, 7, 9, 8)
```

```
In [ ]: # unpack
        t = (4, 8)
        a, b = t
        print(a)         # 4
        print(b)         # 8
```

```
In [ ]: car = ('blue', 'auto', 7)
        color, _, a = car
        print(color)     # blue
        print(_)         # auto
        print(a)         # 7
```

```
In [ ]: # zip
a = (1, 2)
b = (3, 4)
c = zip(a,b)
x = list(c)
print(x)          # [(1, 3), (2, 4)]
print(x[0])       # (1,3)
print(type(x[0])) # <class 'tuple'>
```

```
In [ ]: # unzip
z = [(1, 3), (2, 4)]
u = zip(*z)
print(list(u))    # [(1, 2), (3, 4)]
```

```
In [ ]: # a = (1, 2 , 'A')
b = (3, 4 , 8)
c = zip(a,b)
x = list(c)
print(x)          # [(1, 3), (2, 4), ('A', 8)]
```

```
In [ ]: # num = [8, 2 , (9,3) , 4 , (1,6,7) , 34]
c = 0
for i in num:
    if isinstance(i , tuple):
        continue
    c += 1
print(c)          # 4
print(len(num) - c) # 2
```

```
In [ ]: # a = [(1,2,3) , (4,5,6)]
b = [i[:-1]+(9,) for i in a]
print(b)          # [(1, 2, 9), (4, 5, 9)]
```

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۱۴۰۰-۱۴۰۱

[Codes and Projects \(click here\)](https://github.com/Amin-Golzari-Oskouei/Python-Programming-Course-Basic-2021) (<https://github.com/Amin-Golzari-Oskouei/Python-Programming-Course-Basic-2021>) [slides and videos \(click here\)](https://drive.google.com/drive/folders/1ZsQjBJJ4UAAp9zrGxm3c4qrhmvGBUYHw) (<https://drive.google.com/drive/folders/1ZsQjBJJ4UAAp9zrGxm3c4qrhmvGBUYHw>)