

Object Oriented Programing with Python

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Tutorial URL: https://www.youtube.com/watch?v=Ej_02ICOIgs&t=107s
Creating an object with a class (basic):

```
class Item:
    pass

item1 = 'Phone'
item1_price = 100
item1_quantity = 5
item1_price_total = item1_price * item1_quantity
```

Creating the first method

Methods are functions inside classes.

How we can go ahead and design some methods, which are going to be allowed to be executed on our instances?

The answer is, the methods should be created inside our class.

```
class Item:
    def calculate_total_price(self):
        pass

item1 = Item()
item1_price = 100
item1_quantity = 5
item1_price_total = item1_price * item1_quantity
```

Self: Python passes the object itself as the first argument everytime. So we are not allowed to create methods without the self.

```
class Item:
    def calculate_total_price(self, x, y): # x, and y are parameters
        return x * y

item1 = Item()
item1.name = "Phone"
```

```
item1.price = 100
item1.quantity = 5
print(item1.calculate_total_price(item1.price, item1.quantity)) # When I
    call the method calculate_total_price, Python passes the variables
    as methods.
```

Magic Methods

`__init__`

```
class Item:
    def __init__(self): # Python executes the init function automatically.

    print("I AM CREATED")

item1 = Item()
item1_name = "Phone"
item1.price = 100
item1.quantity = 5

item1 = Item()
item_name = "Laptop"
item1_price = 1000
item1_quantity = 3
```

Output:

```
I AM CREATED
I AM CREATED
```

How to avoid creating the whole attribute, adding more parameters into the class.

```
class Item:
    def __init__(self, name):
        self.name = name
    print(f"An instance created from instance: {name}")

item1 = Item("Phone")
#item1.name = "Phone"
item1.price = 100
item1.quantity = 5

item2 = Item("Laptop")
#item2.name = "Laptop("
item2_price = 1000
item2.quantity = 3
```

```
An instance created from instance: Phone  
An instance created from instance: Laptop
```

Doing the same with all attributes:

```
class Item:  
    def __init__(self, name):  
        self.name = name  
        print(f"An instance created from instance: {name}")  
  
    item1 = Item("Phone")  
    #item1.name = "Phone"  
    item1.price = 100  
    item1.quantity = 5  
  
    item2 = Item("Laptop")  
    #item2.name = "Laptop"  
    item2_price = 1000  
    item2.quantity = 3
```

```
An instance created from instance: Phone  
An instance created from instance: Laptop
```
