

# Lab Python n°2

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## **Beginner Level :**

### **1. Class Point**

Write in python a class Point, that takes (x,y) as arguments. This class must contain the method 'opposite' which transforms the point's location to its opposite. Example:

```
x=7, y=-8
P = Point(x,y)
Opposite(P)
print(P.x) # -7
print(P.y) # -8
```

### **2. Add and Distance**

Write to the previous created class the two following methods :

- Add: Takes self and a Point object as argument, adds them then returns a new Point as a result.

- Distance: Takes self and a Point object as argument and returns the distance between them.

```
P1 = Point(1,1)
P2 = Point(2,2)
P3 = P1.Add(P2)
print(P3.x) # 3
print(P3.y) # 3
print(P1.Distance(P2)) # 1,41...
```

### 3. Rotation and aligned

Write to the Point class another two methods:

- Rotate: Takes self, a Point object as argument and an angle, and returns a Point object obtained after a rotation around the given point with the given angle.

- Aligned: Takes self and two other Point objects as argument and returns True if the three points are aligned, False otherwise.

Write your own tests to verify if these methods return expected results.