One Stop Programming

Python Beginner Tutorial 9

Introduction to Classes (Objects)

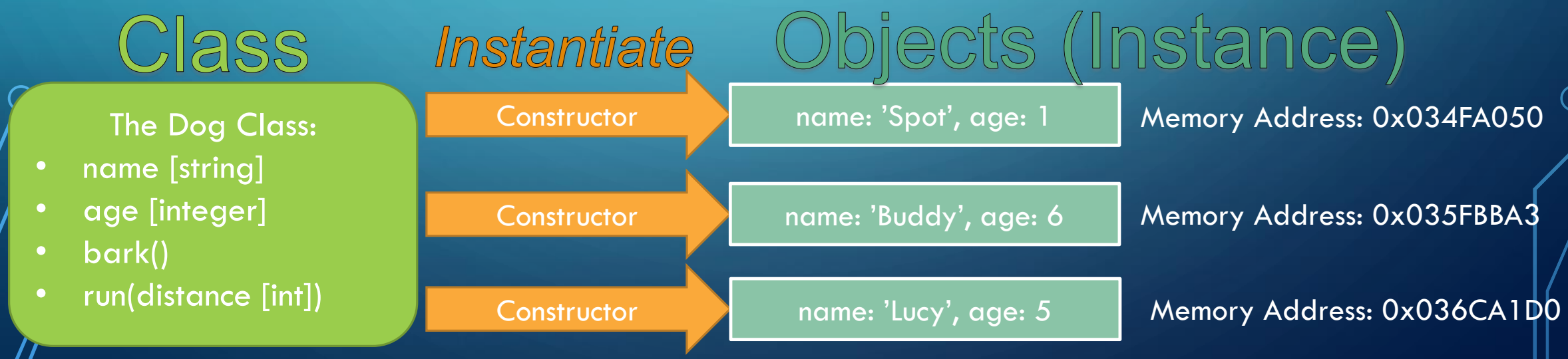
2017

Overview

1. Vocabulary (Meaning to the words I am going to use this entire video)
2. High level overview of what a class is in python (Diagram)
3. Our first class: The Dog class
4. **GET ON WITH IT!** What we are going to build in this video

What is a class in python?

- Vocabulary time!
  - Class: A programming construct to model a functional component or behavior.
  - Object: An instance of a class.
  - Instance: An independent version of a class created at a specific memory address.



My first Object (Dog): Class

The Dog Class:

- name [string]
- age [integer]
- bark()
- run(distance [int])
- __init__(self, name, age)

```
class Dog:
    def __init__(self, name, age):
        self.name = name
        self.age = age

    def bark(self):
        print('Woof! My name is ' + self.name)

    def walk(self, distance):
        print('I just walked a distance of ' + str(distance))
```

My first Object (Dog):

Class

The Dog Class:

- name [string]
- age [integer]
- bark()
- run(distance [int])
- __init__(self, name, age)

Q: What's the deal with **self** being everywhere???

A: In python, **self** represents the current *instance* of the object we are working with. It is **automatically** passed in as the first argument in **every** class method (including the constructor). **Self** is needed to access class properties (name and age) and other methods (bark, walk) within the same class. PyCharm will automatically help you with this when creating new methods.

What are we going to build?!?

1. Define a Game class to represent our Rock, Paper, Scissors game.
2. Learn how to call the Game's constructor to *instantiate* an instance of the Game class thereby creating a Game object.
3. Learn how to call a method belonging to an *instance* of a class (remember that an *instance* of a class *is* an object).

Note: This video will use source code from the "stock" Rock, Paper, Scissors game that Zibzo created. We will focus on improving the logic and structure of the code in a future video. For now we are just going to focus on our Game Class.

This presentation will be available for download (See description).

Feedback welcome!!! I'm looking for the most effective way to communicate complex topics that require some background knowledge.