The Object-Oriented Programming Paradigm

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- So in simple terms, Object-Oriented Programming allows us to cast and represent real-world objects, such as a person or book, as Python code.
- Before we move on. Head to your Python IDE of choice, and type and run the line of code below:

```
print(type(13))
```

- So what are doing is printing the type of the value 13 (thirteen). As you know, the type function will provide us with information about the class to which the object we pass in belongs.
- We will notice that output to the above line of code will show as seen on the next slide:

- A Class is the template to create certain objects. Using our example, we are using a template that has been created by the Python developers. The String Class in Python is identified by the use of Quotation Marks in the script.
- An Instance is the particular or specific moment in which an Object belonging to the class was created. In our case, we created the Instance "Bob" because we have surrounded this value with quotations.
- An Object is an instance of the class. An object arises at the point the Class is Instantiated.
- I do hope these terminologies make sense to you.
- Looking back at our example, we see that we are outputted with:

```
<class 'str'>
```

- We see that the object we are modelling belongs to a mixture of classes. This is again, because there is no permanency in the template. Logically speaking those separate pieces of information we are storing (name, author, pages) are Attributes or Characteristics of the Actual Object that we are trying to model.
- So to essentially create a book, we need a book data type. We need a book class. So in times when we require a new data type template, we obtain one by creating a new class in Python.
- Before we move on with the tutorial, let's take a moment to rationally understand our journey with Python, in an effort to understand the concept of Object-Oriented Programming, Classes, Attributes, and Methods on a higher level.

Class Car

Attributes

Colour
Weight
Airbags

Behaviours

Drive
Reverse
Engage Handbrake

Car 1
Car 2
Car 3
Car 4
Car 5
Car 6

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