**Cisco Python Certification**

**Assignment # 6**

**Q1: Define Object Oriented Programming Language?**

**Ans. Python** is a multi-paradigm programming language. **Meaning**, it supports different programming approach. One of the popular approach to solve a programming problem is by creating objects. This is known as **Object-Oriented Programming** (**OOP**)

**Q2: List Down the benefit of OOP?**

**Ans.** Following are the list of Benefits of OOPs:

1. It provides a clear ***modular structure*** for programs
2. Objects can also be ***reused***within an across applications.
3. It makes software***easier to maintain****.*
4. Reuse also enables ***faster development***.
5. It provides a good framework for code libraries where the supplied software components can be ***easily adapted and modified by the programmer***. This is specifically use for developing graphical user interface.
6. ***Better Productivity***as OOP techniques enforce rules on a programmer that, in the long run, help her get more work done; finished programs work better, have more features and are easier to read and maintain
7. ***Design Benefits****: can make the work easier for the programmer for fixing the elements easily. And make it towards improvement. And eliminate the risks.*
8. *It is good for* ***defining abstract*** *data types.*
9. It implements **real life scenario**
10. In OOP, programmer not only defines data types but also deals with operations applied for data structures.

**Q3: Differentiate between Function and method?**

**Ans.**

|  |  |  |
| --- | --- | --- |
| **Sr. #** | **Function** | **Method** |
| **1** | A **function** is a piece of code that is called by name. | A **method** is a piece of code that is called by a name that is associated with an object. |
| **2** | Function are basically used for code re-usability. | Method are similar like the Function and the main task of method is code re-usability as similar like the functions. |
| **3** | Function are of two types.   * Pre-defined function * User-defined function | Methods are always defined by the user. |
| **4** | Function can be used inside the class as well as outside of the class. | Method always used the OOP Language. |
| **5** | Function can be controlled by the recursion. | Method are always defined inside the class. |

**Q4: Define the following terms:**

* **Class**
* **Object**
* **Attributes**
* **Behavior**

**Ans**

* **Class:**

 A blueprint created by a programmer for an object. This defines a set of attributes that will characterize any object that is instantiated from this class.

* **Object:**

An instance of a class. This is the realized version of the class, where the class is manifested in the program.

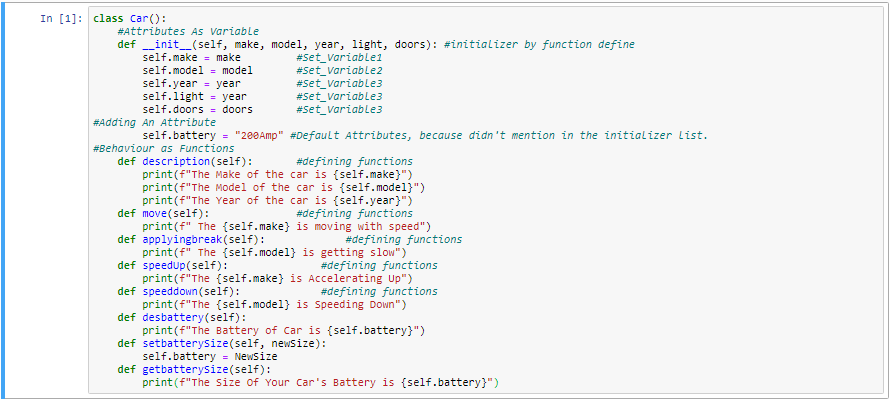
* **Attribute:**

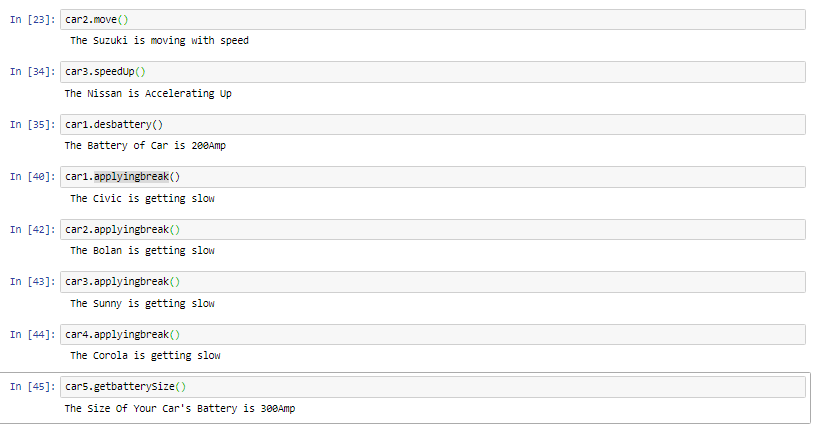
A class **attribute** is a **Python** variable that belongs to a class rather than a particular object’s**.** The Features that any particular object contain is called Attributes

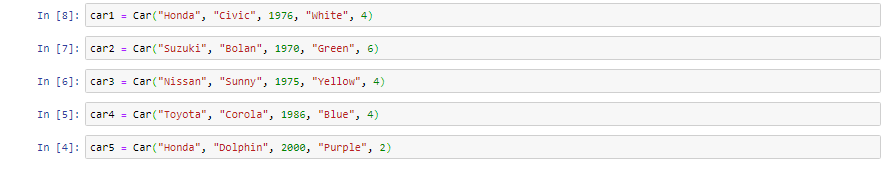
* **Behavior:**

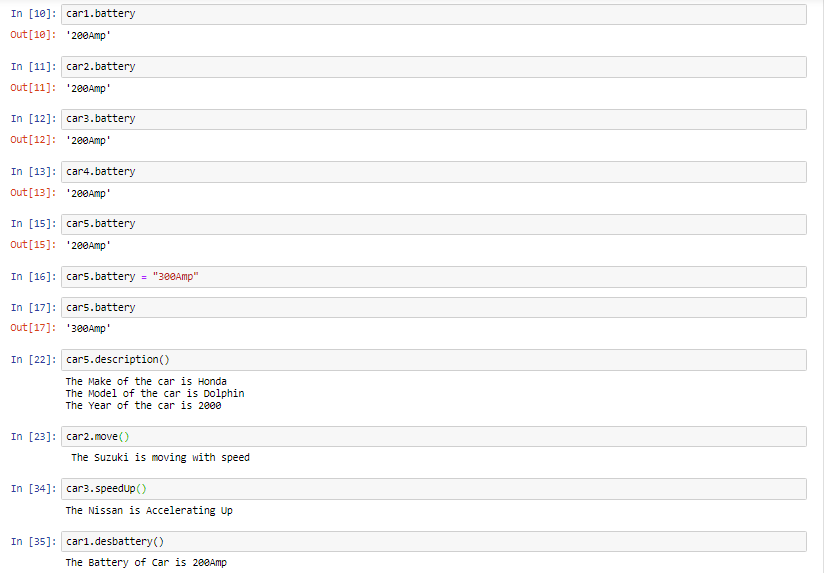
The behavior is either a Python variable that behave according to the particular object is called behavior. The Functionality that any particular object contain is called Behavior.

**Q5: Write a code in python in which create a class named it Car which have 5 attributes such like(model, color, name, etc.) and 3 method. And create 5 object instance from that class.**

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