The Characteristics of an Object Orientated Paradigm

Polymorphism
polymorphism is used in OOP to mean an object has multiple access point from the same user interface. In other words, it means that an object can be multiple variations. One example of this would be parent and child classes which means that an object called shapes can have many different shapes in it such as squares, triangles and circles. The object called shapes can exist in multiple different forms of shapes.

Classes
There are many different characteristics involving classes in OOP. One of the methods is to use a constructor & a destructor. The constructor is responsible for getting the object ready for use i.e. building the object. The constructor is passed information on how to build the object so that it can be used.
On the other hand, when an object is no longer needed it can be destroyed using the destructor. The destructor can delete objects that are no longer needed. This can save space and time while using a highly complex program.

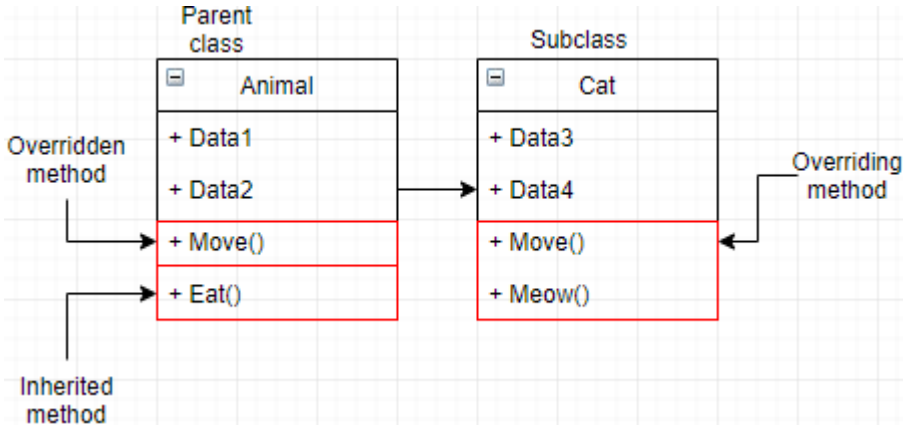
Abstract, Concrete & Derived Classes

When a class is defined as an abstract class it can no longer be directly instantiated. This means that an object can no longer be crated from the class, it stays as its own class. This abstract class is then used as a base for other classes are derived.

The derived classes are known as concrete classes and they provide missing functionality to functions that have not been implemented in the base class.

Base & Derived Classes
A base class is a main class that can be used to allow other classes to inherit functions from that class. An example of a base class would be a class called “Drink”. Another class would inherit from that main class which could be called “type” which will decide what type of drink it would be.

Method Redefinition, Overriding & Overloading
Method redefinition/overriding is when a subclass or a child class changes its implementation method that has already been provided for it buy its parent class or its superclass. An example of this would be an animal class that has the child class of a cat. The Child class will override one of the methods will something more specific to that new class.



Encapsulation
Encapsulation is when the data of an object is kept secure and safe from outside sources to protect the contents of the data. This type of characteristic is useful when an object inside a program needs to be secure and protected from outside tampering that can cause problems with the data inside. An example of this can be a program which is designed to take and store private information in an object. Once the data in placed in the object encapsulation can keep that object safe so that the information is not lacked

Objects, Sub Objects and Containers
An object is an group of characteristics and attributes that are used to make up a instance with a particular class or subclass that it has taken these characteristics and attributes from. Another form of object would be sub objects. An sub object is an object that sits within another object. A container is used to store objects within it. The container can organize the objects within a specific order within a set of rules that can be set by the programmer.

Object Oriented Interfaces
The object oriented interface is about the layout of the code when it is typed into a interface such as the structure and the syntax that it uses when the code is created so priorities can be set so that objects can receive the right properties.

Generics & Templates
Generics is the ability to create a blueprint of code that can then be reused to create basic/noncomplex functions to be used within a piece of code. This can then be used as a template which can then be edited to better suit a more specific problem.

careerride [online]. (2016). Available from: <https://www.careerride.com/oops-characteristics.aspx>. [Accessed 10/12/2018]

Ethan R. Roberts (2017). *medium* [online]. Available from: <https://medium.com/@ethan.reid.roberts/object-oriented-fundamentals-polymorphism-and-encapsulation-8acff4357446>. [Accessed 10/12/2018].