

## Task 1.5:

1. In your own words, what is object-oriented programming? What are the benefits of OOP?

Object-oriented programming is a programming paradigm based on the concept of "objects", which can contain data and code. OOP has an advantage of making complex codes of program simple through its code reusability approach with further enhances efficiency and scalability.

2. What are objects and classes in Python? Come up with a real-world example to illustrate how objects and classes work.

Classes are predefined structure of code made of methods (to manipulate data) and attributes that are used to act as arranged plans/templates for individual objects created. Objects are instances of Class. For example, if I created a class 'Car' to contain all the properties of a car, like 'color', 'mileage', 'history'... Then I can make an object of a sample car say 'Toyota corolla' to represent a car with its properties on the list of cars. Also, I can define methods in the class for modifying these attributes.

3. In your own words, write brief explanations of the following OOP concepts; 100 to 200 words per method is fine.

Method	Description
Inheritance	is a concept of OOP that enables user to use one method for two or more classes by inheriting a method from one class to another instead of having to write similar/the same codes twice.
Polymorphism	is a concept in which two or more methods from different classes have the same name but perform different actions when called depending on form which instance it's being called.
Operator Overloading	is a process in which a user defines a method to run when python built in operators are called form a class instance. This is because the built-in python operators do not work with data type classes thus would throw error if user tries to use them.