**Assignment No.6**

Task No.1

***O***bject-***o***riented ***p***rogramming (**OOP**) refers to a type of computer programming (software design) in which [programmers](https://www.webopedia.com/TERM/P/programmer.html) define the [data type](https://www.webopedia.com/TERM/D/data_type.html) of a [data structure](https://www.webopedia.com/TERM/D/data_structure.html), and also the types of operations ([functions](https://www.webopedia.com/TERM/F/function.html)) that can be applied to the data structure.

In this way, the data structure becomes an [object](https://www.webopedia.com/TERM/O/object.html) that includes both [data](https://www.webopedia.com/TERM/D/data.html) and functions. In addition, programmers can create relationships between one object and another. For example, objects can inherit characteristics from other objects

Task No.2

* Modularity for easier troubleshooting. Something has gone wrong, and you have no idea where to look. ...
* Reuse of code through inheritance. ...
* Flexibility through polymorphism. ...
* Effective problem solving.

Task No.3

A **function** is a piece of code that is called by name. It can be passed data to operate on (i.e. the parameters) and can optionally return data (the return value). All data that is passed to a function is explicitly passed.

A **method** is a piece of code that is called by a name that is associated with an object. In most respects it is identical to a function except for two key differences:

1. A method is implicitly passed the object on which it was called.
2. A method is able to operate on data that is contained within the class (remembering that an object is an instance of a class - the class is the definition, the object is an instance of that data).

Task No.4:

**Class**

A class is a blueprint for the object.

**Object**

An object (instance) is an instantiation of a class. When class is defined, only the description for the object is defined. Therefore, no memory or storage is allocated.

**Attributes**

Like real world objects, object instances have both form and function. The form consists of data elements contained within the instance.

Task No.5:

