EXERCISE 1.5: OBJECT-ORIENTED PROGRAMMING IN PYTHON

REFLECTION QUESTIONS

1. *IN YOUR OWN WORDS, WHAT IS OBJECT-ORIENTED PROGRAMMING? WHAT ARE THE BENEFITS OF OOP?*
   - *OOP IS A USE OF OBJECTS AND CLASSES TO ORGANIZE DATA INTO GROUPS TO BE REUSABLE SO YOU DON'T HAVE TO REPEAT THE SAME CODE BUT CAN PASS IT WITH INHERITANCE.*
2. *WHAT ARE OBJECTS AND CLASSES IN PYTHON? COME UP WITH A REAL-WORLD EXAMPLE TO ILLUSTRATE HOW OBJECTS AND CLASSES WORK.*
   - *OBJECTS: AN INSTANCE OF A CLASS. CAN HAVE ITS OWN DATA BUT SHARES THE STRUCTURE OF THE CLASS*
   - *CLASS: TEMPLATE THAT CONTAINS DATA AND METHODS*
   - *REAL-WORLD EXAMPLE: A CAKE SHOP, THE CLASS WOULD BE CAKE WHICH WOULD CONTAIN THE FLAVOR, SIZE, AND FROSTING THE OBJECTS WOULD BE CHOCOLATE_CAKE OR VANILLA_CAKE TAKING THE UNIQUE INSTANCES OF CAKE*
3. *IN YOUR OWN WORDS, WRITE BRIEF EXPLANATIONS OF THE FOLLOWING OOP CONCEPTS; 100 TO 200 WORDS PER METHOD IS FINE.*

Method	**Description**
Inheritance	a subclass of of another parent/base class it can copy the information of the base class and add more information to it in order to make another unique class without having to repeat code used in the parent
Polymorphism	enables methods to have the same name but different operations,
Operator Overloading	custom behavior of the built-in operators like + - * / used for complex numbers done by overriding methods like __add__() __sub__() and so on