EE461L HW3 – Object Oriented Programming (OOP)

In this homework, you will design and implement a class which consists of the attributes and methods for the Resource Management functionality (Hardware Set) in your team project. You have been provided with the driver code that uses the class HardwareSet that you will be developing as part of this homework. Driver code is provided to you as `test_hardwareset.py`

Write a Python program that implements the class hardwareSet which initializes the class with the following method and **private** attributes

__init__(self)

Capacity --> total number of units. Initial value=qty

Availability --> number of units available to check out.

and the following methods

`initialize_capacity(self,qty)` → initializes capacity to qty and performs one more step

`get_availability(self)` --> accessor function to return the number of unused units

`get_capacity(self)` --> accessor function to return the total capacity of units

`check_out(self, qty)` --> method that checks out number of units specified by qty. This method should update the number of units available after check_out. This method should handle the situation if the quantity requested is greater than the current availability in the following manner: Allow users to check out the number of units that are available and then return error = -1

`check_in(self, qty)` --> method that checks in number of units specified by qty. This method should update the number of units available after check_in. Do not check in any quantity and return error = -1 if user tries to check in more hardware than what is checked out.

What to submit:

`hardwareSet.py` : A class that contains methods and attributes for the main program

Rubric

	Points

__init__(self)	1
get_availability(self)	1
get_capacity(self)	1
check_out(self, qty)	1
check_in(self, qty)	1
initialize_capacity(self,qty)	1
Correct functioning of code	1

C:\Users\asamant\Documents\ee461l> &
C:/Users/asamant/AppData/Local/Programs/Python/Python39/python.exe
c:/Users/asamant/Documents/ee461l/test_hardwareSet.py

```
Total capacity of units: 0
Total capacity of units: 250
Number of available units: 250
Number of units available after checking out 20 units: 230
Number of total checkedout units 20
Number of units available after checking out 300 units: 0
Number of total checkedout units 250
Could not check out requested number of units
Number of units available after checking in 180 units: 180
Could not check in  100 units
```