Lab 10: Introduction to Interface in Python and Operator Overloading

Task 01:

Create a class Point having X and Y axis then perform an operator overloading (Overload all relation operator).

Code:

```
class X:
    def __init__(self,x):
        self.x = x


    def __gt__(self,other):
        if self.x>other.y:
            return True
        else:
            return False



    def __ge__(self,other):
        if self.x>=other.y:
            return True
        else:
            return False



    def __lt__(self,other):
        if self.x<other.y:
            return True
        else:
            return False
```

```
    def __le__(self,other):
        if self.x<=other.y:
            return True
        else:
            return False


    def __eq__(self,other):
        if self.x==other.y:
            return True
        else:
            return False


    def __ne__(self,other):
        if self.x!=other.y:
            return True
        else:
            return False



class Y:
    def __init__(self,y):
        self.y = y

c1 = X(2)
c2 = Y(4)
print("Is c1 is less than c2 ?", c1<c2)
```

```
print("Is c1 is less than or equal to c2 ?", c1<=c2)
print("Is c1 is greater than c2 ?", c1>c2)
print("Is c1 is greter than or equal to c2 ?", c1>=c2)
print("Is c1 is equal to c2 ?", c1==c2)
print("Is c1 is not equal to c2 ?", c1!=c2)
```

Output:

```
Is c1 is less than c2 ? True
Is c1 is less than or equal to c2 ? True
Is c1 is greater than c2 ? False
Is c1 is greter than or equal to c2 ? False
Is c1 is equal to c2 ? False
Is c1 is not equal to c2 ? True
```

Task 02:

Find out one real world example of interface and implement all abstract method by using python n code.

Code:

```
from abc import ABC, abstractmethod

class Hotel(ABC):
    @abstractmethod
    def welcome(self):
        pass
    def amenities(self):
        pass
    def food(self):
        pass
    def activities(self):
        pass
    def pools(self):
        pass
    def transportation(self):
        pass
    def wellness(self):
        pass
    def price(self):
        pass


class Five_star(Hotel):
    def welcome(self):
        print("\t\t\t\t Welcome to Atlantis, The Palm")
    def amenities(self):
        print("Popular Amenities: \n\tPool\n\tSpa\n\tWiFi(free)\n\tParking\n")
    def food(self):
```

```
        print("Food & Drink: \n\tRestaurant\n\tBar\n\tRoom Service\n\tBreakfast\n\tBreakfast
Buffet\n")
    def activities(self):
        print("Activities: \n\tBeach Access \n")
    def pools(self):
        print("Pool: \n\tOutdoor Pool\n")
    def transportation(self):
        print("Parking & Transportation: \n\tParking Free\n\tAirport Shuttle\n")
    def wellness(self):
        print("Wellness: \n\tFitness Center & Spa \n")
    def price(self):
        print("Price: 32,500")


    def all_detail(data):
        data.welcome()
        data.amenities()
        data.food()
        data.activities()
        data.pools()
        data.transportation()
        data.wellness()
        data.price()


h = Five_star()
h.all_detail()
```

Output:

```
                                Welcome to Atlantis, The Palm
Popular Amenities:
        Pool
        Spa
        WiFi(free)
        Parking

Food & Drink:
        Restaurant
        Bar
        Room Service
        Breakfast
        Breakfast Buffet

Activities:
        Beach Access

Pool:
        Outdoor Pool

Parking & Transportation:
        Parking Free
        Airport Shuttle

Wellness:
        Fitness Center & Spa

Price: 32,500
```