Data Structures & Algorithms
Python Programming Assignment 1 Set C (40 marks)

SUBMISSION REQUIREMENTS:

1) Name the **ZIP files** containing your solutions according to the following requirements:
   ZIP all Python files to be submitted into a zip file and named it as "**ADMINNO_ASSN.zip**". For example: "**123456F_ASSN.zip**".

2) At the beginning of every Python files to be submitted, include your "**Name, Student Admin no. and Tutorial Group**" as comments.

3) Submission Due Date: **Sun, 11 June 2023, 2359hrs (Week 8)**

4) The deliverable is to be submitted to your module tutor via Bright Space

5) Late Submission: Marks will be deducted for late submission at the rate of 4 marks per day (10% of 40 marks per day)

6) Code review will be scheduled in week 8 during LAB and TUT sessions. There will be code walkthrough and technical question asked about the assignment completed by student.

Book Management System

User Requirements (40 marks)

Books! is a retail store that sells books. They have been in business for 20 years and would like your help to digitise their company. First, they would like to have an application to keep track of their books.

Create an application to allow the owner to enter the books details as follows.

Field Name	Data Type	Example 1	Example 2
ISBN (PK)	String	9781449340377	9781118951798
Title	String	Python Cookbook	Adventures in Python
Category	String	Education	Adventure
Publisher	String	Oreilly	Wiley
Year_Published	Integer	2013	2015

The owner can display and add new Books.

1. Design a Book Class with the relevant variables and methods for the storage of the Book data.

   (5 marks)

2. Design a suitable data structure (e.g. making use of Python List, Dictionary, etc.) to allow the owner to manage the books. This data structure can store multiple records.

   (3 marks)

3. Design a menu for the application to allow the owner to perform the following.

   (1 mark)

   a. Displaying of all of the books' records. (5 marks)
   b. Add a new book. (5 marks)
   c. Sort books by their Category in ascending order using only Bubble Sort and display the outcome.

      (10 marks)

   d. Sort the Publisher in descending order using Selection Sort and display the outcome.

      (10 marks)

   e. Exit the program.

      (1 mark)