Answer the following:

Question 1:

Some of the characteristics of a book are the title, author(s), publisher, ISBN, price, and year of publication. Design a **class** bookType that defines the book as an ADT.

   i.   Each object of the **class** bookType can hold the following information about a book: title, up to four authors, publisher, ISBN, price, and number of copies in stock. To keep track of the number of authors, add another member variable.

   ii.   Include the member functions to perform the various operations on objects of type bookType. For example, the usual operations that can be performed on the title are to show the title, set the title, and check whether a title is the same as the actual title of the book. Similarly, the typical operations that can be performed on the number of copies in stock are to show the number of copies in stock, set the number of copies in stock, update the number of copies in stock, and return the number of copies in stock. Add similar operations for the publisher, ISBN, book price, and authors. Add the appropriate constructors and a destructor (if one is needed).

Write the definitions of the member functions of the **class** bookType.

Write a program that uses the **class** bookType and tests various operations on the objects of the **class** bookType. Declare an array of 100 components of type bookType. Some of the operations that you should perform are to search for a book by its title, search by ISBN, and update the number of copies of a book.

Question 2:

a) Store the bookType objects in a vector. List the books entered. Identify the 5 methods of the vector class and demonstrate the same.

b) Repeat the same for the STL stack and STL queue.