Lab – 4.1

1)

Imagine the same publishing company that markets both book and audiocassette versions of its works. As in that exercise, create a class called publication that stores the title (a string) and price (type float) of a publication. From this class derive two classes: book, which adds a page count (type int); and tape, which adds a playing time in minutes (type float). Each of the three classes should have a getdata() function to get its data from the user at the keyboard, and a putdata() function to display the data. Write a main() program that creates an array of pointers to publication. In a loop, ask the user for data about a particular book or tape, and use new to create an object of type book or tape to hold the data. Put the pointer to the object in the array. When the user has finished entering the data for all books and tapes, display the resulting data for all the books and tapes entered, using a for loop and a single statement such aspubarr[j]->putdata();to display the data from each object in the array.

Now, add a member function of type bool called isOversize() to the book and tape classes. Let's say that a book with more than 800 pages, or a tape with a playing time longer than 90 minutes (which would require two cassettes), is considered oversize. You can access this function from main() and display the string "Oversize" for oversize books and tapes when you display their other data. If book and tape objects are to be accessed using pointers to them that are stored in an array of type publication, what do you need to add to the publication base class? Can you instantiate members of this base class?

Design a Class Template for Doubly linked list that permits creation of list with int, float and char type elements. The template should permit insertion at front/end, deletion at front/end, deletion of a node with specific value, and display all the elements in the list.