CS-1004 Object Oriented Programming Spring-2024

Question: In a particular stationery store, to hold the article and container information, Container structure is used. The shopkeeper wants to maintain a chain of article containers so that it's easier to perform different operations. Implement the Shop Class member functions, please use the correct input parameters and return types.

```cpp
struct Container
{
 char *name;
int containerno;
 Container* link;
}
class Shop {
Public:
 Container* start;
 // Default constructor
 Shop() { start = NULL; }

 //Copy Constructor
 Shop(const Shop& other);


 void add_Container( char *name,int containerindex); /*This member function will  take the name and
 containerindex of Article as input parameter. It creates the  Container instance. If the new Container
 instance is the first in the chain then  the pointer "start" will point to it. Otherwise a new instance is attached
 at the end of the existing chain.*/

 void print_Shop(); //It prints all the articles with their container number in the chain.

 void delete_Chain( int containerindex); /* This member function will take the containerindex of
 Article as input parameter. It deletes the mentioned containerindex from the chain of Shop
 instance. And rejoins the remaining chain.*/

 void Sort_Chain(); //It sort all the elements in the chain based upon their  containerindex.

 void update_name_at_containernumber(int containerindex, char * name);

  void remove_Duplicate(); //It removes all the containers with same  article in the chain.

 void findContainer (int containerindex);// It prints article name in the selected container.

 void findContainer (int containerindex1, int containerindex2);// It prints  article name in the container
 number range. The range is inclusive

 ~Shop()

};
```