

Exercises

1. A plain text file “in.txt” contains lines indicating unit price of fruit, fruit name, and availability status code:

```
1.99 mangoes Y
0.99 banans Y
3.49 pineapples N
.....
```

Write a C++ program that reads in this text file, creates two linked lists of “Fruit” objects, one whose prices are less than or equal to a specified amount, p, and those with prices above p. Include a display function so that the user can display each list.

2. Modify the above program so that the lists created sort the fruits according to increasing price. In other words, for each list created, the first element of the list should be the least expensive item in that list, and the next item should be the next least expensive one, and so on.

3. A Doubly Linked List is a data structure consisting of nodes that have a pointer to the next object in the list as well as a pointer to the previous object.

```
class A{
public:
    ..... //Data
    A* next;
    A* previous;
    .....
}
```

Write a program to create a doubly linked list of nodes that hold an int and a char values as data.

4. Suppose a struct is defined as:

```
struct NODE {
    int i; //Data
    Node* int; //Pointer to next node
}
```

Write a function *insert(NODE* p, int pos)* that inserts the NODE pointed to by p at the position pos in the list. (Note: pos=0 means insert at the beginning, pos=1 means insert after the first item, pos=4 means insert after the Node that is currently fourth from the beginning.)