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...ssignments\131_Assignment_8\Question_2\Question_2.cpp 1
1 // Question_2.cpp : This file contains the 'main' function. Program ➤
  execution begins and ends there.
2 //// / ➤
  ----- ➤
  -----
3 //Name                Sai Chaitanya Kilambi
4 //Course              CPSC 131 Data Structures, Fall, 2022
5 //Assignment          No.8 question:2
6 //Due date            10/26/2022
7 // Purpose:
8 // This program stores the data in ordered linked list from a text file ➤
  and displays the data in order
9 //----- ➤
  -----
10 // list of libraries
11 //
12 //importing the required libraries
13
14
15 #include <iostream>
16 #include<string>
17 #include<fstream>
18
19 using namespace std;
20 template <class T>
21 class ORDER
22 {
23 private:
24     struct node
25     {
26         T info;
27         node* next;
28     };
29     node* order;
30 public:
31     ORDER() { order = NULL; } // constructore
32     bool emptyOrder()
33     {
34         return (order == NULL) ? true : false;
35     }
36     void pushOrder(T x)//
37     {
38         //insert x in the list and keep the list sorted
39         node* r = new node; r->info = x;
40         r->next = NULL;
41         //find the insertion place;
42         node* p = order; node* q = order;
43         if (order == NULL)
44             order = r;

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45     else
46     {
47         while (p != NULL && x > p->info)
48         {
49             q = p; p = p->next;
50         }
51         if (p == q)
52         { //insert in front
53             r->next = p; order = r;
54         }
55         else
56         { //insert at the rear
57             r->next = p; q->next = r;
58         }
59     }
60 }
61 void displayOrder()
62 {
63     node* p = order;
64     while (p != NULL)
65     {
66         cout << p->info << "-->"; p = p->next;
67     }
68     cout << "NULL\n";
69 }
70 T popOrdere()
71 {
72     //return the info of the first node and then
73     //delete that node
74     T poppedElement;
75     node* p = order;
76     poppedElement = p->info;
77     order = p->next;
78     delete p;
79     return poppedElement;
80 }
81 };
82 int main()
83 {
84     string presidents[6];
85     std::fstream f;
86     //opening the file to only read
87     f.open("data.txt", std::ios::in);
88
89     // copying the file data into an array
90     for (int i = 0; i < 6; i++) {
91         f >> presidents[i];
92     }
93     //display a in sorted form
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94     ORDER<string> ord;
95     for (int i = 0; i < 6; ++i)
96         ord.pushOrder(presidents[i]);
97     //display the list
98     cout << "This is the ordered list\n";
99     ord.displayOrder();
100 }
```