

```

1  #include <iostream>
2  using namespace std;
3
4  // implementing the static List ADT using array
5  // operations to be implemented: read, write/modify
6
7  class List{
8
9      private:
10         int *array;
11
12     public:
13         List(int size){
14             array = new int[size];
15         }
16
17         void write(int index, int data){
18             array[index] = data;
19         }
20
21         int read(int index){
22             return array[index];
23         }
24
25 };
26
27 int main(){
28
29     int listSize;
30
31     cout << "Enter list size: ";
32     cin >> listSize;
33
34     List integerList(listSize);
35
36     for (int i = 0; i < listSize; i++){
37
38         int value;
39         cout << "Enter element # " << i << " : ";
40         cin >> value;
41
42         integerList.write(i, value);
43     }
44
45     // to read an element at a particular index (before modify)
46
47     int readIndex;
48     cout << "Enter an index to read (before modify): ";
49     cin >> readIndex;
50     cout << "Value at " << readIndex << " is: " << integerList.read(readIndex) << endl;
51
52     // to modify an element at a particular index
53
54     int modifyIndex;
55     cout << "Enter an index to modify: ";
56     cin >> modifyIndex;
57     int modifyValue;
58     cout << "Enter the new value for index " << modifyIndex << " : ";
59     cin >> modifyValue;
60     integerList.write(modifyIndex, modifyValue);
61
62
63     // to read an element at a particular index (after modify)
64

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65     cout << "Enter an index to read (after modify): ";
66     cin >> readIndex;
67     cout << "Value at " << readIndex << " is: " << integerList.read(readIndex) << endl;
68
69     return 0;
70 }
```

```
Enter list size: 5
Enter element # 0 : 12
Enter element # 1 : 45
Enter element # 2 : 78
Enter element # 3 : 55
Enter element # 4 : 99
Enter an index to read (before modify): 1
Value at 1 is: 45
Enter an index to modify: 2
Enter the new value for index 2 : 33
Enter an index to read (after modify): 2
Value at 2 is: 33
```