

```
1 //-----
2 // File List02.cpp
3 //-----
4 // Project p02 is comprised of the following files:
5 // File      Description
6 //
7 // p02.cpp    Processes command line arguments and directs the process
8 //            the Cartesian product.
9 //
10 // List02.h   Defines class List - a list of strings
11 //
12 // List02.cpp Implements class List
13 //
14 // p02make    Creates executable file p02 from files p02.cpp,
15 //            List02.cpp, and List02.h
16 //-----
17 //Author:     Ms. Petunia Perfect
18 //Student ID: *00000000
19 //Course:     CMSC 2123 - Discrete Structures
20 //CRN:        11786, Autumn, 2015
21 //Project:    p02
22 //Due:        September 18, 2015
23 //Account:    tt000
24 //-----
25 //Copyright September, 2015 by Thomas R. Turner.
26 //Do not reproduce without permission from Thomas R. Turner.
27 //-----
28 //C++ standard include files.
29 //-----
30 #include <cstdlib>
31 #include <cstring>
32 #include <iostream>
33 #include <string>
34 #include <fstream>
35 using namespace std;
36 //-----
37 //Application include files
38 //-----
39 #include "List02.h"
40 //-----
41 //-----
42 struct ListException {
43     ListException(const char* m)
44     {
45         cout << endl;
46         cout << "I am the List and I am " << m << ".";
47         cout << endl;
48     }
49 };
50 //-----
51 //Constructor
52 List::List(int sz):size(sz),count(0),cursor(0){L=new string[size];}
53 //-----
54 //Destructor
55 //-----
56 List::~List(){if (L) delete[] L;}
57 //-----
58 //-----
```

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59 bool List::isFull(void){return count>=size-1;}
60 //-----
61 //-----
62 bool List::isEmpty(void){return count<=0;}
63 //-----
64 //-----
65 void List::Insert(string v)
66 {   if (isFull()) throw ListException("full");
67     L[count++]=v;
68 }
69 //-----
70 //-----
71 void List::Scan(istream& i)
72 {   for (;;) {
73     string v;
74     i >> v;
75     if (i.eof()) break;
76     Insert(v);
77 }
78 }
79 //-----
80 //-----
81 void List::Print(ostream& o,const char* title)
82 {   o << endl << title;
83     o << "={";
84     for (int a=0;a<count;a++) {
85         if (a>0) o << ",";
86         o << L[a];
87     }
88     o << "}" << endl;
89 }

```