Source File: `~/1337/35/lab35.(C|CPP|cpp|c++|cc|cxx|cp)`
Input: Under control of `main` function
Output: Under control of `main` function
Value: 2

The purpose of this assignment is to write two different versions of the same function. The description and prototype of each of the functions can be found in the `main` function shown in Figure 1. A sample execution sequence is shown in Figure 2. To use the `Makefile` as distributed in class, add a target of `lab35` to `targets2srcfiles`.

```
1  #include <iostream>
2  #include <cstdlib>
3
4  using namespace std;
5
6  // sumUsingIndexing:  receives an n-element integer array and returns
7  // the sum of the elements; the function uses indexing
8  int sumUsingIndexing(const int array[], int n);
9
10 // sumUsingPointers:  receives an n-element integer array and returns
11 // the sum of the elements; the function uses pointers
12 int sumUsingPointers(const int *array, int n);
13
14 // printArrayUsingIndexing:  prints the n-element integer array to
15 // output stream os; the function uses indexing
16 void printArrayUsingIndexing(const int array[], int n, ostream& os);
17
18 int main()
19 {
20   int i;
21   int array[100];
22
23   i = 0;
24   while (i < 100 && cin >> array[i])
25     i++;
26
27   if (i == 0)
28     cout << "No data" << endl;
29   else
30   {
31     printArrayUsingIndexing(array, i, cout);
32     cout << "Sum Using Indexing = " << sumUsingIndexing(array, i) << endl;
33     cout << "Sum Using Pointers = " << sumUsingPointers(array, i) << endl;
34   }
35
36   return EXIT_SUCCESS;
37 }
38
```

Figure 1. `/usr/local/1337/src/lab35main.C` (Part 1 of 2)

```
39 void printArrayUsingIndexing(const int array[], int n, ostream& os)
40 {
41   int i;
42
43   if (n > 0)
44   {
45     os << "array" << endl << '{' << endl;
46     for (i = 0; i < n; ++i)
47       os << "  [" << i << "] = " << array[i] << endl;
48     os << '}' << endl;
49   }
50 }
```

Figure 1. `/usr/local/1337/src/lab35main.C` (Part 2 of 2)

```
1  newuser@csunix ~> cd 1337
2  newuser@csunix ~/1337> mkdir 35
3  newuser@csunix ~/1337> cd 35
4  newuser@csunix ~/1337/35> cp /usr/local/1337/data/35/* .
5  newuser@csunix ~/1337/35> cp /usr/local/1337/src/lab35main.C .
6  newuser@csunix ~/1337/35> cp /usr/local/1337/src/Makefile .
7  newuser@csunix ~/1337/35> touch lab35.cpp
8  newuser@csunix ~/1337/35> # Edit Makefile and lab35.cpp
9  newuser@csunix ~/1337/35> make lab35
10 g++ -g -Wall -std=c++11 -c lab35main.C -I/usr/local/1337/include -I.
11 g++ -g -Wall -std=c++11 -c lab35.cpp -I/usr/local/1337/include -I.
12 g++ -o lab35 lab35main.o lab35.o -L/usr/local/1337/lib -lm -lbits
13 newuser@csunix ~/1337/35> cat 01.dat
14 6 2 6
15 newuser@csunix ~/1337/35> cat 01.dat | ./lab35
16 array
17 {
18   [0] = 6
19   [1] = 2
20   [2] = 6
21 }
22 Sum Using Indexing = 14
23 Sum Using Pointers = 14
24 newuser@csunix ~/1337/35> cat 01.dat | ./lab35 > my.out
25 newuser@csunix ~/1337/35> diff 01.out my.out
26 newuser@csunix ~/1337/35> cat 02.dat | ./lab35 > my.out
27 newuser@csunix ~/1337/35> diff 02.out my.out
28 newuser@csunix ~/1337/35> cat 03.dat | ./lab35 > my.out
29 newuser@csunix ~/1337/35> diff 03.out my.out
30 newuser@csunix ~/1337/35>
```

Figure 2. Commands to Compile, Link, & Run Lab 35