```
 1: // $Id: str2int.cpp,v 1.2 2013-01-08 17:02:53-08 - - $
 2:
 3: //
 4: // NAME
 5: //     str2int - print out argv elements that are ints
 6: //
 7: // SYNOPSIS
 8: //     str2int [string...]
 9: //
10: // DESCRIPTION
11: //     Prints out its arguments that are ints, and errors if not.
12: //     Implement str2int function via iterator.
13: //
14:
15: #include <cstdlib>
16: #include <iostream>
17: #include <locale>
18: #include <sstream>
19: #include <stdexcept>
20: #include <string>
21:
22: using namespace std;
23:
24: int str2int (const string &number) {
25:    invalid_argument invalid_int ("invalid int: " + number);
26:    int value = 0;
27:    bool negative = false;
28:    string::const_iterator itor = number.begin();
29:    const string::const_iterator end = number.end();
30:    if (itor == end) throw invalid_int;
31:    if (*itor == '-') negative = true, ++itor;
32:    if (itor == end) throw invalid_int;
33:    for (; itor != end; ++itor) {
34:       if (! isdigit (*itor)) throw invalid_int;
35:       value = value * 10 + *itor - '0';
36:    }
37:    if (negative) value = -value;
38:    return value;
39: }
40:
41: //
42: // For each element of argv, convert to integer and print,
43: // else catch an exception and print an error message.
44: //
45: int main (int argc, char **argv) {
46:    for (int argi = 1; argi < argc; ++argi) {
47:       string arg = argv[argi];
48:       cout << "\"" << arg << "\"";
49:       try {
50:          int value = str2int (arg);
51:          cout << " = " << value << endl;
52:       }catch (invalid_argument &exn) {
53:          cout << ": " << exn.what() << endl;
54:       }
55:    }
56:    return EXIT_SUCCESS;
57: }
58:
59: /*
60: //TEST// runprogram.perl -x str2int.lis ./str2int \
61: //TEST//      1024 56foobar -45 68.9 testing 007777 0x48 2147483648
62: //TEST// mkpspdf str2int.ps str2int.cpp* str2int.lis
63: */
64:
```

```
1: @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ mkc: starting str2int.cpp
2: str2int.cpp: $Id: str2int.cpp,v 1.2 2013-01-08 17:02:53-08 - - $
3: g++ -g -O0 -Wall -Wextra -std=gnu++0x str2int.cpp -o str2int -lm
4: rm -f str2int.o
5: @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ mkc: finished str2int.cpp
```

```
   1:
   2: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
   3: log: str2int.log
   4: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
   5:
   6:      1  Script  : /afs/cats.ucsc.edu/courses/cmps012b-wm/bin/runprogram.perl
   7:      2  limit c :     0 max core file size (KB)
   8:      3  limit f : 4194303 max output file size (KB)
   9:      4  limit t : 4294967295 max CPU time (sec)
  10:      5  stdin   : /dev/null
  11:      6  stdout  : str2int.out
  12:      7  stderr  : str2int.err
  13:      8  log     : str2int.log
  14:      9  listing : str2int.lis
  15:     10  Command : ./str2int 1024 56foobar -45 68.9 testing 007777 0x48 214748364
8
  16:     11  starting: pid 20330: 19:43:44.00
  17:     12  finished: pid 20330: 19:43:44.00, real 0.00, user 0.00, sys 0.00
  18:     13  pstatus: 0x0000 EXIT STATUS = 0
  19:
  20: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  21: stdin: /dev/null
  22: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  23:
  24:
  25: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  26: stdout: str2int.out
  27: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  28:
  29:      1  "1024" = 1024
  30:      2  "56foobar": invalid int: 56foobar
  31:      3  "-45" = -45
  32:      4  "68.9": invalid int: 68.9
  33:      5  "testing": invalid int: testing
  34:      6  "007777" = 7777
  35:      7  "0x48": invalid int: 0x48
  36:      8  "2147483648" = -2147483648
  37:
  38: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  39: stderr: str2int.err
  40: ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
  41:
```