

```
1  #include <iostream>
2  #include "A3-functions.cpp"
3
4
5  int main() {
6      unsigned l, n;
7
8      std::cout << "Number of intervals: ";
9      std::cin >> l;
10
11     std::cout << "Size of dataset: ";
12     std::cin >> n;
13
14     // An array of size n has to be created at runtime...
15     // Old compilers would allow the following, but NOT Visual Studio
16     // (Which I've used for these assignments).
17
18     // int v[n];
19
20     // Alternatives:
21
22     // C-STYLE: malloc
23     // unsigned * v = (unsigned*)malloc(n*sizeof(unsigned));
24     // This allocated memory must be freed when not needed any longer.
25
26     // C++ STYLE: Dynamic allocation.
27     // Also in this case v must be freed when no longer needed.
28     unsigned * v = new unsigned[n];
29
30     std::cout << "Input data: ";
31
32     for (auto i = 0; i < n; i++)
33         std::cin >> v[i];
34
35     // FIND MAXIMUM ELEMENT
36     // m = dumbMax(v , n);
37     int M = smartMax(v , n);
38
39     // COMPUTE INTERVALS
40     compute_intervals(v, n, l, M);
41
42     //free(v);
43     delete[] v;
44     return 0;
45 }
```