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1 // /----- ↗
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2 //Name Sai Chaitanya Kilambi
3 //Course CPSC 131 Data Structures, Fall, 2022
4 //Assignment No.4 question:3
5 //Due date 09/21/2022
6 // Purpose:
7 // This program generates 13 random numbers<100 and stores them in an ↗
   array, compute their average and sort them into two
8 // vector depending on if they are > avg or < avg
9 // ↗
   ----- ↗
   -----
10 // list of libraries
11 //
12 //importing the required libraries
13
14 #include <iostream>
15 #include<vector>
16
17
18 int main()
19 {
20
21     int num[13];
22
23     //generating 13 random numbers less than 100
24     for (int i = 0; i < 13; i++)
25     {
26
27         num[i] = rand() % 100;
28
29     }
30
31     for (int i = 0; i < 13; i++)
32     {
33
34         std::cout << num[i] << " ";
35
36     }
37
38     std::cout << std::endl;
39
40
41     //computing Average
42     double avg = 0;
```

```
46
47     for (int i = 0; i < 13; i++)
48     {
49
50         avg += num[i];
51     }
52
53     avg = avg / 13.0;
54
55     //storing the numbers in vLess and vAbove
56     std::vector<int> vLess, vAbove;
57
58     for (int i = 0; i < 13; i++)
59     {
60
61         if (num[i] < avg)
62             vLess.push_back(num[i]);
63
64         else
65             vAbove.push_back(num[i]);
66
67     }
68
69     //printing vLess vector
70     for (int i = 0; i < vLess.size(); i++)
71     {
72
73         std::cout << vLess[i] << " ";
74     }
75
76     std::cout << std::endl;
77
78     //printing vAbove vector
79     for (int i = 0; i < vAbove.size(); i++)
80     {
81
82         std::cout << vAbove[i] << " ";
83     }
84
85 }
```

```
95     std::cout << std::endl;
96
97     return 0;
98
99 }
100
```