

```

1  #include <iostream>
2  #include <math.h>
3  using namespace std;
4  void printarray (int a [] ,int size )
5  {
6      cout << "printing .... " << endl ;
7      for (int i = 0 ; i < size ; i ++ )
8      {
9          cout << a [i] << " " ;
10     }
11     cout << endl ;
12 }
13 float arrayaverage (int a [] , int size )
14 {
15     int sum = 0 ;
16     for (int i=0 ; i< size ; i ++ )
17     {
18         sum+=a[i] ;
19     }
20     return sum *1.0 / size ;
21 }
22 int maxarray (int a [] , int size )
23 {
24     int max = a [0] ;
25     for (int i = 0 ; i < size ; i++)
26     {
27         if (a [i] > max )
28             max = a [i] ;
29     }
30     return max ;
31 }
32
33 int minarray (int a [] , int size )
34 {
35     int min = a [0] ;
36     for (int i = 0 ; i < size ; i++)
37     {
38         if (a [i] < min )
39             min = a [i] ;
40     }
41     return min;
42 }
43 void sortarray(int a[] , int size)
44 {
45     for (int i = 0 ; i < size-1 ; i ++ )    // Iterations
46     {
47         for (int j = 0 ; j<size-1 ; j ++ ) // comparison in each iteration , it can be also j<size -1 - i .
48         {
49             if (a [j] > a [j+1] )
50             {
51                 int temp = a[j] ; a[j] = a [j+1] ; a[j+1] = temp ;
52             }
53         }
54     }
55
56
57 }
58
59 int medianarray ( int a [] , int size )
60 {
61     sortarray ( a , size ) ;
62     return a [size / 2 ] ;
63 }
64 int modearray (int a [] , int size )
65 {
66     int modesofar = a [0] ;
67     int maxfrequencysofar = 0 ;
68     for (int index = 0 ; index < size ; index ++ )
69     {
70         int currentelement = a [index] ;
71         int counter = 0 ;
72         for (int j = index ; j<size ; j++ )
73         {
74             if( a [j] == currentelement )
75                 counter ++ ;
76         }
77         if (counter >= maxfrequencysofar )
78         {

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79         maxfrequencysofar = counter ;
80         modesofar = currentelement ;
81     }
82
83 }
84     cout << "Max frequency " << maxfrequencysofar << endl << "Mode is ";
85     return modesofar ;
86
87 }
88
89 int main ()
90 {
91     const int size = 10 ;
92     int x[size] = {6,5,7,3,1,7,2,4,7,7} ;
93     cout << "Array average = " << arrayaverage ( x , size ) << endl ;
94     cout << "minimum = " << minarray(x , size) << endl ;
95     cout << "maximum = " << maxarray(x , size) << endl ;
96     printarray ( x , size ) ;
97     sortarray ( x , size ) ;
98     printarray ( x , size ) ;
99     cout << "Median = " << medianarray (x , size ) << endl ;
100
101     cout << modearray(x , size ) << endl ;
102     return 0;
103 }
104

```