

```

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

```

```

79 {
80     sortarray ( a , size ) ;
81     return a [size / 2 ] ;
82 }
83
84 // Mode
85
86 int modearray (int a [] , int size )
87 {
88     int modesofar = a [0] ;
89     int maxfrequencysofar = 0 ;
90     for (int index = 0 ; index < size ; index ++ )
91     {
92         int currentelement = a [index] ;
93         int counter = 0 ;
94         for (int j = index ; j<size ; j++ )
95         {
96             if( a [j] == currentelement )
97                 counter ++ ;
98         }
99         if (counter >= maxfrequencysofar )
100         {
101             maxfrequencysofar = counter ;
102             modesofar = currentelement ;
103         }
104     }
105     cout << "Max frequency " << maxfrequencysofar << endl << "Mode is ";
106     return modesofar ;
107 }
108
109 }
110
111 int main ()
112 {
113     const int size = 10 ;
114     int x[size] = {6,5,7,3,1,7,2,4 ,7,7} ;
115     cout << "Array average = "<< arrayaverage ( x , size )<<endl ;
116     cout << "minimum = " << minarray(x , size) << endl ;
117     cout << "maximum = " << maxarray(x , size) << endl ;
118     printarray ( x , size ) ;
119     sortarray ( x , size ) ;
120     printarray ( x , size ) ;
121     cout << "Median = " << medianarray (x , size ) << endl ;
122
123     cout << modearray(x , size ) << endl ;
124     return 0;
125 }
126

```