```cpp
/*
280
Arrays
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 */

#include "pch.h" //Why is this default in VS? Without it it won't compile, but I don't use it either.
#include <iostream>
#include <iomanip>
#include <limits>

using namespace std;

void load(int x[], int y)
{
    for (int i = 1; i <= y; i++) {
        cout << "enter integer " << i << ": ";
        cin >> x[i - 1];
        cout << endl;
    }
}//load
void display(int x[], int y)
{
    cout << "\nNumbers in the array: ";
    for (int i = 1; i <= y; i++) {
        cout << x[i - 1] << "  ";
    }
    cout << endl;
}//display
int get(int x[], int y)
{
    return x[y-1];
}//get
void set(int x[], int y, int z)
{
    x[y - 1] = z;
}//set
void deleet(int x[], int &y, int z)
{
    int hold;
    for (int i = y; i > z; i--) {
        hold = x[i - 2];
        x[i - 2] = x[y - 1];
        x[y - 1] = hold;
    }
    x[y-1] = 0;
    y--;
}//delete
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49  void insert(int x[], int &y, int z, int t)
50  {
51      int hold;
52      int flag = 0;
53      for (int i = z; i <= y+1; i++) {
54          if (flag == 0) {
55              hold = x[z - 1];
56              x[i - 1] = t;
57              flag = 1;
58          }
59          else {
60              int a = x[i-1];
61              x[i - 1] = hold;
62              hold = a;
63          }
64      }
65      y++;
66  }//insert
67  double findAve(int x[], int y)
68  {
69      int total = 0;
70      for (int i = 1; i <= y; i++) {
71          total = total + x[i - 1];
72      }
73      return ((1.0*total) / (1.0*y));
74  }//Find Average
75  int findMin(int x[], int y)
76  {
77      int current;
78      int flag = 0;
79      for (int i = 1; i <= y; i++) {
80          if (flag == 0) {
81              current = x[i - 1];
82              flag = 1;
83          }
84          if (x[i - 1] < current) {
85              current = x[i - 1];
86          }
87      }
88      return current;
89  }//Find Min
90  void sort(int x[], int y)
91  {
92      int check = 1;
93      do {
94          check = 0;
95          for (int i = 1; i < y; i++) {
96              if (x[i - 1] > x[i]) {
97                  int a = x[i];
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 98                  x[i] = x[i - 1];
 99                  x[i - 1] = a;
100              }
101          }
102          for (int i = 1; i < y; i++) {
103              if (x[i - 1] > x[i]) {
104                  check = 1;
105              }
106          }
107      } while (check == 1);
108  }//Sort
109  int main()
110  {
111      int theList[10]{ 0,0,0,0,0,0,0,0,0,0 };
112      int count = 0;
113      char leave = 'n';
114      int choice = 0;
115
116      do {
117
118
119          cout << "Choose options from the menu below\n\n " << endl;
120          cout << left;
121
122          //Sets gives options to work with the array
123          cout << setw(6) << "1" << "load" << endl;
124          cout << setw(6) << "2" << "display" << endl;
125          cout << setw(6) << "3" << "get" << endl;
126          cout << setw(6) << "4" << "set" << endl;
127          cout << setw(6) << "5" << "delete" << endl;
128          cout << setw(6) << "6" << "insert" << endl;
129          cout << setw(6) << "7" << "findMin" << endl;
130          cout << setw(6) << "8" << "findAve" << endl;
131          cout << setw(6) << "9" << "sort" << endl;
132          cout << setw(6) << "10" << "exit" << endl << endl;
133
134          cout << "option: ";
135          cin >> choice;
136
137          //Implements the options
138          if (choice == 1) {
139              cout << "How many integers do you want in the function? (10
                    integers max)  ";
140              cin >> count;
141              load(theList, count);
142          }//load
143          else if (choice == 2) {
144              display(theList, count);
145          }//display
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146         else if (choice == 3) {
147             int temp;
148             cout << "which element would you like to get? ";
149             cin >> temp;
150             if (temp > count || temp < 1) {
151                 cout << "Element " << temp << " does not exist in the array" << endl;
152             }
153             else {
154                 cout << "Element " << temp << " in the array is " << get(theList, temp) << endl;
155             }
156         }//get
157         else if (choice == 4) {
158             int temp;
159             cout << "Which element in the array would you like to change? ";
160             cin >> temp;
161             cout << endl;
162             if (temp > count || temp < 1) {
163                 cout << "That is not a valid element in the array" << endl;
164             }
165             else {
166                 int change;
167                 cout << "what would you like to change element " << temp << " to? ";
168                 cin >> change;
169                 set(theList, temp, change);
170                 display(theList, count);
171             }
172         }//set
173         else if (choice == 5) {
174             int temp;
175             cout << "Which element would you like to delete? ";
176             cin >> temp;
177             cout << endl;
178             if (temp > count || temp < 1) {
179                 cout << "That is not a valid element in the array" << endl;
180             }
181             else {
182                 deleet(theList, count, temp);
183             }
184             display(theList, count);
185         }//delete
186         else if (choice == 6) {
187             if (count < 10) {
188                 int temp;
189                 cout << "Where would you like to insert an element? ";
190                 cin >> temp;
191                 cout << endl;
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192                 if (temp > count+1 || temp < 1) {
193                     cout << "That is not a valid position in the array." <<
                        endl;
194                 }
195                 else {
196                     int replace;
197                     cout << "What would you like to put in element " << temp <<
                         "? ";
198                     cin >> replace;
199                     cout << endl;
200                     insert(theList, count, temp, replace);
201                     display(theList, count);
202                 }
203             }
204             else {
205                 cout << "The array is full, you may not insert any elements."
                      << endl;
206             }
207 
208         }//insert
209         else if (choice == 7) {
210             cout << "The minimum value in the array is: " << findMin(theList,
                  count) << endl;
211         }//Find Min
212         else if (choice == 8) {
213             cout << "The average value in the array is: " << findAve(theList,
                  count) << endl;
214         }//Find Average
215         else if (choice == 9) {
216             sort(theList, count);
217             display(theList, count);
218         }//Sort
219         else if (choice == 10) {
220             leave = 'y';
221         }//Exit
222 
223         system("pause");
224         cout << "\n\n\n\n\n" << endl;
225 
226 
227     } while (leave != 'y');
228 }
229 
```