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1: #include <iostream>
2: #include <vector>
3: using namespace std;
4:
5: // Topic 10 >> Containers, e.g., vector
6: class Point
7: {
8: private:
9:     int x, y;
10:
11: public:
12:     Point(int _x = 0, int _y = 0) : x(_x), y(_y) {}
13:     void set(int _x, int _y)
14:     {
15:         x = _x;
16:         y = _y;
17:     }
18:     int getX() const { return x; }
19:     int getY() const { return y; }
20: };
21:
22: int menu()
23: {
24:     cout << endl;
25:     cout << "1. Add point" << endl;
26:     cout << "2. Remove last point" << endl;
27:     cout << "3. Edit point" << endl;
28:     cout << "4. Print list" << endl;
29:     cout << "5. Exit" << endl;
30:     cout << endl;
31:     cout << "Choose an operation from 1 to 5 => ";
32:
33:     int choice;
34:     cin >> choice;
35:
36:     cout << endl;
37:
38:     return choice;
39: }
40:
41: int main()
42: {
43:     vector<Point> list;
44:     list.push_back(Point(1, 2));
45:     list.push_back(Point(31, 2));
46:     list.push_back(Point(13, 32));
47:
48:     int c = menu();
49:     int x, y;
50:     int index;
51:
52:     while (c != 5)
53:     {
54:
55:         switch (c)
56:         {
57:             case 1: // add a new item at the back of the list
58:                 cout << "Enter x and y => ";
59:                 cin >> x >> y;
60:

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61:         list.push_back(Point(x, y));
62:         cout << "Number of items in the list now is " << list.size() << endl;
63:         break;
64:
65:     case 2: // Remove the Last item from the List
66:         list.pop_back();
67:         cout << "Number of items in the list now is " << list.size() << endl;
68:         break;
69:
70:     case 3: // Edit the item at index
71:         cout << "Enter item's index to edit => ";
72:         cin >> index;
73:         cout << endl;
74:
75:         cout << "Current x and y: " << list[index].getX() << " , " <<
list[index].getY() << endl;
76:         cout << "Enter new x and y => ";
77:         cin >> x >> y;
78:         list[index].set(x, y);
79:         break;
80:
81:     case 4: // Print all items in the list
82:         // for (int i=0; i<list.size(); i++)
83:         //     cout << (i+1) << ".\t x=" << list[i].getX() << ", y=" <<
list[i].getY() << endl;
84:
85:         vector<Point>::iterator i;
86:
87:         for (i = list.begin(); i != list.end(); i++)
88:             cout << ".\t x=" << i->getX() << ", y=" << i->getY() << endl;
89:
90:         cout << endl;
91:
92:         break;
93:
94:     } // switch
95:
96:     c = menu();
97: } // while
98:
99: system("pause");
100: return 0;
101: }

```