```cpp
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#include <iostream>
#include <fstream>
#include <string>

using namespace std;

class Computer
{

private:
    string id;
    double temps[32];
    int malfunctionCount;

    void processTemp(int idx, double t)
    {
        if (t < 0)
        {
            temps[idx] = -1;
            malfunctionCount++;
        }

        else
        {
            temps[idx] = t;
        }
    }

public:
    Computer()
    {
        id = "";
        malfunctionCount = 0;
        for (int i = 0; i < 32; i++)
        {
            temps[i] = -1;
        }
    }


    void loadData(string compID, ifstream &fin)
    {
        id = compID;
        malfunctionCount = 0;
```

```
47:         double t;
48:
49:         for (int i = 0; i < 32; i++)
50:         {
51:             fin >> t;
52:             processTemp(i, t);
53:         }
54:     }
55:
56:     string getID() const
57:     {
58:         return id;
59:     }
60:
61:     double getAverage() const
62:     {
63:         double sum = 0;
64:         for (int i = 0; i < 32; i++)
65:         {
66:             sum += temps[i];
67:         }
68:
69:         double average_sum = sum / 32.0;
70:
71:         return average_sum;
72:     }
73:
74:     bool isHeavilyLoaded() const
75:     {
76:         bool isComputerHL = getAverage() > 50;
77:         return isComputerHL;
78:     }
79:
80:     string getCondition() const
81:     {
82:         if (malfunctionCount == 0)
83:         {
84:             return "normal";
85:         }
86:
87:         else if (malfunctionCount <= 5)
88:         {
89:             return "marginal";
90:         }
91:
92:         else
```

```
 93:         {
 94:             return "malfunctioning";
 95:         }
 96:     }
 97: };
 98:
 99: int main()
100: {
101:     Computer comps[15];
102:
103:     ifstream fin("computers.txt");
104:
105:     if (!fin) {
106:         cout << "Sorry! Couldn't open/locate the requested file.";
107:         return 1;
108:     }
109:
110:     for (int i = 0; i < 15; i++)
111:     {
112:         string cid;
113:         fin >> cid;
114:         comps[i].loadData(cid, fin);
115:     }
116:
117:     fin.close();
118:
119:     int heavy = 0;
120:     for (int i = 0; i < 15; i++)
121:     {
122:         if (comps[i].isHeavilyLoaded())
123:         {
124:             heavy++;
125:         }
126:     }
127:
128:     cout << "No.of heavily loaded computers: " << heavy << endl << endl;
129:
130:     for (int i = 0; i < 15; i++)
131:     {
132:         cout << comps[i].getID() << ": " << comps[i].getCondition() <<
    endl;
133:     }
134:
135:     return 0;
136: }
137:
```

```
/*

OUTPUT:

No.of heavily loaded computers: 12

6FQPU6: marginal
PYBBEN: marginal
0UBZNF: normal
O1598U: normal
BKU9CF: malfunctioning
NCLK3F: normal
3GTR95: normal
HX6BD2: normal
PZ2ZRR: normal
N6ZP8U: normal
U8KPXR: normal
UJOL27: normal
OK7NPD: normal
JMMRZA: normal
BZ5BR6: normal

--------------------------------
Process exited after 0.06666 seconds with return value 0
Press any key to continue . . .

*/
```