

Script started on 2024-03-28 18:48:14-05:00 [TERM="xterm-256color" TTY="/dev/pts/0" COLUMNS="161" LINES="39"]

```
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ pwd
```

```
[?2004l
```

```
/home/jovyan/CS2/Projects/Project_5
```

```
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ ls -la
```

```
[?2004l
```

```
total 76
```

```
drwxr-sr-x 3 jovyan users 4096 Mar 28 18:48 [0m[01;34m.[0m
drwxr-sr-x 8 jovyan users 4096 Mar 23 00:19 [01;34m..[0m
drwxr-sr-x 2 jovyan users 4096 Mar 28 18:36 [01;34m.ipynb_checkpoints[0m
-rw-r--r-- 1 jovyan users 10551 Mar 23 00:20 long_ledger.dat
-rw-r--r-- 1 jovyan users 397 Mar 28 18:47 main.cpp
-rw-r--r-- 1 jovyan users 30860 Mar 23 00:20 medium_ledger.dat
-rw-r--r-- 1 jovyan users 0 Mar 28 18:48 Sabin_Project_5.log
-rw-r--r-- 1 jovyan users 45 Mar 23 00:20 sample.dat
-rw-r--r-- 1 jovyan users 337 Mar 23 00:19 short_ledger.dat
-rw-r--r-- 1 jovyan users 3023 Mar 28 18:45 Zentharian.cpp
-rw-r--r-- 1 jovyan users 745 Mar 28 18:12 Zentharian.h
```

```
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ cat -n Zentharian.h
```

```
[?2004l
```

```
1 #ifndef ZENTHARIAN_H
2 #define ZENTHARIAN_H_H
3 #include <array>
4 #include <fstream>
5
6 const int kMaxZen{1000};
7 const int kMaxCrystal{20};
8
9 class Zentharian{
10
11 private:
12     //Count for the Zen
13     int m_ZenCount{0};
14     //Count for the amount of Crystals that Zen has
15     int m_CrystalCount{0};
16     //Count for the total of the Crystals
17     int m_crystalTotal{0};
18     //File object
19     std::string m_inFileName{0};
20     //Array for the crystals then Zen has
21     std::array<int,kMaxCrystal> m_arrCrystals{};
22
23 public:
24     //open the file
25     bool open_file();
26     //Process the file
27     void process_file();
28     //Update the class members;
29     void display_info();
30     //Overloaded operator for comparison
31     bool operator > (Zentharian& rhs);
32 };
33
34 #endif[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ cat -n Zentharian.cpp
```

```
[?2004l
```

```
1 #include "Zentharian.h"
2 #include <iostream>
3 #include <fstream>
4 #include <string>
5 #include <array>
6
7
8 void Zentharian::process_file(){
9     std::array<int,kMaxCrystal> tempArr{};
10    //Count for num of Crystals
11    int tempNum {};
12    //Temp Variable for Crystal Total
13    int tempCrystalTotal{};
14    //Count for index
15    int tempCount{0};
16    //Temp variable for Get Line
17    std::string tempString{};
18    //Temp variable for Zen Count
19    int tempZenCount{};
20
21    std::ifstream inFile{m_inFileName};
22
23    while(std::getline(inFile, tempString)){
24        //Check to see if the file is empty
```

```

25     if(!tempString.empty()){
26         //convert string to int
27         tempNum = std::stoi(tempString);
28         //Count index = Num of Crystals
29         tempArr[tempCount] = tempNum;
30         //Increase index
31         tempCount++;
32         //Total of crystals increased by the crystal number
33         tempCrystalTotal += tempNum;
34     }else{
35         //Add one to the zen count
36         tempZenCount++;
37         //Compare the crystal totals
38         if(tempCrystalTotal > m_crystalTotal){
39             //Set the private data members of the class
40             m_ZenCount = tempZenCount;
41             m_CrystalCount = tempCount;
42             m_crystalTotal = tempCrystalTotal;
43             //copy the contents of the temp arr to the private array
44             for(int i{0}; i < tempCount; i++){
45                 m_arrCrystals[i] = tempArr[i];
46             }
47
48             //Reset the temp variables
49             for(int i{0}; i < kMaxCrystal; i++){
50                 tempArr[i] = 0;
51             }
52             tempCount = 0;
53             tempCrystalTotal = 0;
54         }else{
55             //Reset the temp variables
56             for(int i{0}; i < kMaxCrystal; i++){
57                 tempArr[i] = 0;
58             }
59             tempCount = 0;
60             tempCrystalTotal = 0;
61         }
62     }
63 }
64
65 }
66
67 //Print the contents
68 void Zentharian::display_info(){
69     std::cout << "Zentharian " << m_ZenCount << " has " << m_CrystalCount << " worth\n";
70     for(int i{0}; i < m_CrystalCount; i++){
71         std::cout << m_arrCrystals[i] << '\n';
72     }
73     std::cout << "fuel each. Totaling " << m_crystalTotal << " units.\n";
74 }
75
76
77
78
79 bool Zentharian::open_file(){
80     //Set variables
81     std::ifstream inFile{};
82     std::string fileName{};
83     bool boolTemp = false;
84
85     std::cout << "Enter ledger file: ";
86     std::cin >> fileName;
87     std::cout << '\n';
88     inFile.open(fileName);
89
90     //If you cant open the file, print an error message
91     if(!inFile){
92         boolTemp = true;
93         std::cout << "Your entered an invalid ledger..." << fileName << '\n';
94     } else{
95         m_inFileName = fileName;
96     }
97     return boolTemp;
98 }
99 bool Zentharian::operator > (Zentharian& rhs){
100     bool greatThan = false;
101     if(m_crystalTotal > rhs.m_crystalTotal)
102         greatThan = true;
103     return greatThan;
104 }[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ cat -n main.cpp
[?2004l
1  /*

```

```

2 Tyler Sabin
3 Section 004
4 Project 5
5 In this project, we will work with OOP and files.
6 Our goal is to see which Zen has the highest total of crystals
7 Using arrays, classes, overloaded operators and more
8 */
9 #include <iostream>
10 #include "Zentharian.h"
11
12 int main(){
13     Zentharian zen;
14
15     if(zen.open_file()){
16         return 0;
17     }
18     zen.process_file();
19     zen.display_info();
20
21     return 0;
22 }[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ g++ Wa[K[K-Wall -Wextra -Werror main.cpp Zentharian.cpp -o fuel
[?2004l
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ ./fuel
[?2004l
Enter ledger file: sample.dat

```

```

Zentharian 4 has 3 worth
700
830
910
fuel each. Totaling 2440 units.
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ ./fuel
[?2004l
Enter ledger file: long_ledger.dat

```

```

Zentharian 22 has 15 worth
5026
5406
2517
5628
4392
5195
5548
4046
2982
4444
4603
4139
5917
4623
5650
fuel each. Totaling 70116 units.
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ ./fuel
[?2004l
Enter ledger file: medium_ledger.dat

```

```

Zentharian 385 has 18 worth
28894
195618
188
15146
39077
19271
16271
4387
33914
24635
43799
43127
30385
42622
467190
428521
39192
41473
fuel each. Totaling 1513710 units.
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m$ ./fuel
[?2004l

```

Enter ledger file: short_ledger.dat

Zentharian 3 has 15 worth

24957
45758
30393
44487
30857
33760
49874
36116
8040
27794
44500
18749
36396
12779
10348

fuel each. Totaling 454808 units.

[?2004h(base)]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m\$./fuel
[?2004l
Enter ledger file: empty.daty

Your entered an invalid ledger...empty.dat

[?2004h(base)]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_5[01;32mjovyan@jupyter-tes4j[00m:[01;34m~/CS2/Projects/Project_5[00m\$ exit
[?2004l
exit

Script done on 2024-03-28 18:50:06-05:00 [COMMAND_EXIT_CODE="0"]