# Exam "Fundamentals of programming with C#" – 21 January 2018

## Problem 2. Rainbow Raindrop

## History

Somewhere out there, in a parallel universe, there is a different way in which the rainbow raindrops are formed. Your job is to **count the raindrops that can reflect light in such a way that they can be a part of a rainbow** **and the ones that can’t**. Unfortunately, you can’t travel to this parallel universe, but you have a very good friend which will send you all the information he gathers in real time. Be careful because the connection may be poor.

## Description

You must read all the lines of input until you receive the special termination command “**End**” (**case-sensitive**). Before the termination command, the input lines **may** contain information about a raindrop which you **must** gather. The way you can tell if a line of information is about a raindrop is the **format**. It should be as follows:

**“{volume} {red color value} {green color value} {blue color value}”**

You don’t need to validate the data types, just **make sure that there are 4 fragments separated by a single space**. **Skip** the input line **if** it **doesn’t contain** raindrop information.

A raindrop **color values** **must** be **between** **0** and **255 inclusive**. If a color value is **not in** the given **range** **set** it **to 0**.

There is special type of raindrop called “**rainbow raindrop” which is formed** when it has **only one** colorvalue **greater than 200** and **two color values less than 100.** You must **collect only the rainbow raindrops** and **print a report** in a strict **format** which is described in the **Output section.**

### Input

Each raindrop information input line contains:

* **Volume** – the volume of the raindrop – **floating-point number in range** **[0.20 ... 100.00]**
* **Red color value** – the amount of red light it can reflect – **integer number in range** **[-2,147,483,648 … 2,147,483,647]**
* **Green color value** – the amount of green light it can reflect – **integer number in range** **[-2,147,483,648 … 2,147,483,647]**
* **Blue color value** – the amount of blue light it can reflect – **integer number in range** **[-2,147,483,648 … 2,147,483,647]**

### Output

The **rainbow** **raindrops must be numbered from 1 to N** and must be **ordered by their volume (ascending)**. The **volume must be rounded to two digits** after the decimal separator.

Rainbow Raindrops: {Count of rainbow raindrops}

1. V:{Volume} -> R:{Red Color Value} G:{Green Color Value} B:{Blue Color Value}
2. V:{Volume} -> R:{Red Color Value} G:{Green Color Value} B:{Blue Color Value}

…

### Example

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Description** |
| 3.1381 40 109 107  66.0125 280 176 294  76.3311 201 88 130  3.2415 109 151 202  71.312 37 78 103  28.2557 48 95 212  32.5235 213 128 10  5.9957 46 -1 164  95.948 -3 44 180  67.0745 226 19 107  End | Rainbow Raindrops: 1  1. V:28.26 -> R:48 G:95 B:212 | **There is only one rainbow raindrop because its blue color value is greater than 200 and the other two color values are less than 100.**  **Raindrop number 5 has Red Color Value and Blue Color Value set to 0 because they were not in the given range.** |
| **Input** | **Output** |
| 3.1381 40 109 107  66.0125 280 176 294  76.3311 201 88 130  3.2415 6 51 202  non-raindrop-info-input-line  28.2557 48 95 212  32.5235 213 128 10  end  95.948 -3 44 180  67.0745 226 19 107  End | Rainbow Raindrops: 2  1. V:3.24 -> R:6 G:51 B:202  2. V:28.26 -> R:48 G:95 B:212 |
| **Input** | **Output** |
| 3.1381 40 109 107  3.2415 214 51 2  4.215 26 251 20  2.255 48 201 0  28.2557 248 95 4  67.0745 226 19 107  End | Rainbow Raindrops: 4  1. V:2.26 -> R:48 G:201 B:0  2. V:3.24 -> R:214 G:51 B:2  3. V:4.22 -> R:26 G:251 B:20  4. V:28.26 -> R:248 G:95 B:4 |