**Problem 2 – Hogwarts Sorting**

Do you remember that sorting hat from Harry Potter? It turns out that the hat needed some rest, so it took a vacation (here is where you imagine a hat lying on the beach \*WHAT?!\*). So Hogwarts had to come up with something which will help them sort all newcomers while the hat is absent. They decided to keep it as simple as possible – the algorithm is such, that it **takes all the letters from the student’s name and sums their ASCII codes**. Then the **sum is divided by 4** and depending on the **reminder**, the student is sorted in one of the houses – **Gryffindor** (if **reminder** = **0**), **Slytherin** (if **1**)**, Ravenclaw** (if **2**) and **Hufflepuff** (if **3**). What is more, for greater efficiency, they plan to introduce a system of faculty numbers, which are composed by **the sum**, followed by the **initials of the names** of the student. Great algorithm, but they needed someone to **write a program** which sorts the students with the given algorithm, so they asked you. You will be **given the number of newcomers** and then **their names, each on a separate line. You just have to do the magic!**

**Input**

* On the first line you will receive the number **N** – the number of newcomers.
* On the next **N** lines you will receive valid names of the students

**Output**

* For each student you have to print on a separate line the house in which he is sorted and his faculty number, separated by a space
* Then on the next 4 separate lines you print the name of each house and the count of students sorted there.  
  ***Example: “Gryffindor: 5”***

**Constraints**

* **N** is an integer in range [1 … 30]
* The **names of the student** will be valid strings, composed of first and last name.
* Allowed memory: 16 MB
* Allowed time: 0.1s

### Examples

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| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 3  Harry Potter  Draco Malfoy  Hermione Granger | Gryffindor 1156HP  Slytherin 1105DM  Slytherin 1533HG  Gryffindor: 1  Slytherin: 2  Ravenclaw: 0  Hufflepuff: 0 | **72** (H) + **97** (a) + **114** (r) + **114** (r) + **121** (y) + **80** (P) + **111** (o) + **116** (t) + **116** (t) + **101** (e) + **114** (r) = **1156**.  1156 / 4 = 289(0) **🡪** Gryffindor  Faculty number: **1156HP** |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  Ivan Petrov  Pesho Programist  Leliya Vanya  Dedo Gosho | Ravenclaw 1038IP  Hufflepuff 1575PP  Hufflepuff 1119LV  Gryffindor 892DG  Gryffindor: 1  Slytherin: 0  Ravenclaw: 1  Hufflepuff: 2 |