# Final Exam Preparation – 26 November 2021

## World Tour

**Link:** [**https://judge.softuni.bg/Contests/Practice/Index/2518#0**](https://judge.softuni.bg/Contests/Practice/Index/2518#0)

*You are a world traveller and your next goal is to make a world tour. In order to do that, you have to plan out everything first. To start with, you would like to plan out all of your stops where you will have a break.*

On the **first line** you will be given a string containing all of your **stops**. Until you receive the command **"Travel"**, you will be given some commands to **manipulate** that initial string. The **commands can be**:

* **Add Stop:{index}:{string}** – **insert** the given **string** at that **index** only if the index **is valid**
* **Remove Stop:{start\_index}:{end\_index}** – **remove** the elements of the string from the **starting index** to the **end index** (**inclusive**) if **both** indices are **valid**
* **Switch:{old\_string}:{new\_string}** – if the **old string** is in the initial string, **replace** it with the **new one**. (all **occurrences**)

***Note: After each command print the current state of the string***

After the **"Travel"** command, print the following: **"Ready for world tour! Planned stops: {string}"**

### Output

* Print the proper output messages in the proper cases as described in the problem description

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Hawai::Cyprys-Greece  Add Stop:7:Rome  Remove Stop:11:16  Switch:Hawai:Bulgaria  Travel | Hawai::RomeCyprys-Greece  Hawai::Rome-Greece  Bulgaria::Rome-Greece  Ready for world tour! Planned stops: Bulgaria::Rome-Greece |
| Albania:Bulgaria:Cyprus:Deuchland  Add Stop:3:Nigeria  Remove Stop:4:8  Switch:Albania: Azərbaycan  Travel | AlbNigeriaania:Bulgaria:Cyprus:Deuchland  AlbNaania:Bulgaria:Cyprus:Deuchland  AlbNaania:Bulgaria:Cyprus:Deuchland  Ready for world tour! Planned stops: AlbNaania:Bulgaria:Cyprus:Deuchland |

## Emoji Detector

**Link:** [**https://judge.softuni.bg/Contests/Practice/Index/2302#1**](https://judge.softuni.bg/Contests/Practice/Index/2302#1)

Your task is to write program which extracts emojis from a text and find the threshold based on the input.

You have to get your **cool threshold**. It is obtained by **multiplying all** the digits found in the input. The cool threshold could be a **very big number**, so be mindful.

An emoji is valid when:

* Is surrounded by either :: or \*\* (exactly 2)
* Is **at least 3** characters long (**without** the surrounding symbols)
* **Starts** with a **capital letter**
* Continues with **lowercase** letters **only**

Examples of valid emojis**:** ::Joy::, \*\*Banana\*\*, ::Wink::

Examples of invalid emojis: ::Joy\*\*, **::fox:es:**, **\*\*Monk3ys\*\*, :Snak::Es::**

You need to count **all valid emojis** in the text and calculate their **coolness**. The coolness of the emoji is **determined** by summing all the **ASCII values of all letters** in the emoji.

Examples: ::Joy:: - 306, \*\*Banana\*\* - 577, ::Wink:: - 409

You need to print the result of cool threshold and after that to take all emojis out of the text, count them and print the **only the cool ones** on the console.

### Input

* On the single input you will receive a piece of string.

### Output

* On the first line of the output print the obtained Cool threshold in format:
* **Cool threshold: {coolThresholdSum}**

On the next line **print the** **count of all emojis** found in the text in format:

* {countOfAllEmojis} emojis found in the text. The cool ones are:
* {cool emoji 1}
* {cool emoji 2}
* {…}

If there are no cool ones, just don't print anything in the end.

### Constraints

There will always be at least one digit in the text!

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| In the Sofia Zoo there are 311 animals in total! ::Smiley:: This includes 3 \*\*Tigers\*\*, 1 ::Elephant:, 12 \*\*Monk3ys\*\*, a \*\*Gorilla::, 5 ::fox:es: and 21 different types of :Snak::Es::. ::Mooning:: \*\*Shy\*\* | Cool threshold: 540  4 emojis found in the text. The cool ones are:  ::Smiley::  \*\*Tigers\*\*  ::Mooning:: |
| **Comments** | |
| You can see all the valid emojis in green. There are various reasons why the rest are not valid, examine them carefully. The "cool threshold" is 3\*1\*1\*3\*1\*1\*2\*3\*5\*2\*1 = 540.  ::Smiley:: -> 83 + 109 + 105 + 108 + 101 + 121 = 627 > 540 -> cool  \*\*Tigers\*\* -> 84 + 105 + 103 + 101 + 114 + 115 = 622 > 540 -> cool  ::Mooning:: -> 77 + 111 + 111 + 110 + 105 + 110 + 103 = 727 > 540 -> cool  \*\*Shy\*\* -> 83 + 104 + 121 = 308 < 540 -> not cool  At the end we print the count of all valid emojis found and each of the cool ones on a new line. | |
| **Input** | **Output** |
| 5, 4, 3, 2, 1, go! The 1-th consecutive banana-eating contest has begun! ::Joy:: \*\*Banana\*\* ::Wink:: \*\*Vali\*\* ::valid\_emoji:: | Cool threshold: 120  4 emojis found in the text. The cool ones are:  ::Joy::  \*\*Banana\*\*  ::Wink::  \*\*Vali\*\* |
| **Input** | **Output** |
| It is a long established fact that 1 a reader will be distracted by 9 the readable content of a page when looking at its layout. The point of using ::LoremIpsum:: is that it has a more-or-less normal 3 distribution of 8 letters, as opposed to using 'Content here, content 99 here', making it look like readable \*\*English\*\*. | Cool threshold: 17496  1 emojis found in the text. The cool ones are: |
| **Comments** | |
| You can see \*\*English\*\* is a valid emoji, but the sum of ascii **is not** **bigger** than cool threshold, that's why we **don't** print anything in the end. | |

## Heroes of Code and Logic VII

**Link:** [**https://judge.softuni.bg/Contests/Practice/Index/2303#2**](https://judge.softuni.bg/Contests/Practice/Index/2303#2)

*You got your hands on the most recent update on the best MMORPG of all time – Heroes of Code and Logic. You want to play it all day long! So cancel all other arrangements and create your party!*

On the first line of the standard input you will receive an integer **n** – the number of heroes that you can choose for your party. On the next **n** lines, the heroes themselves will follow with their **hit points** and **mana points** separated by empty space in the following format:

{hero name} {HP} {MP}

* where HP stands for hit points and MP for mana points
* a hero can have a maximum of 100 HP and 200 MP

After you have successfully picked your heroes, you can start playing the game. You will be receiving different commands, each on a new line, separated by " – ", until the "End" command is given.

There are several actions that can be performed by the heroes:

CastSpell – {hero name} – {MP needed} – {spell name}

* If the hero has the required MP, he casts the spell, thus reducing his MP. Print this message:
  + "{hero name} has successfully cast {spell name} and now has {mana points left} MP!"
* If the hero is unable to cast the spell print:
  + "**{hero name} does not have enough MP to cast {spell name}!**"

TakeDamage – {hero name} – {damage} – {attacker}

* Reduce the hero HP by the given damage amount. If the hero is still alive (his HP is greater than 0) print:
  + "{hero name} was hit for {damage} HP by {attacker} and now has {current HP} HP left!"
* If the hero has died, remove him from your party and print:
  + "{hero name} has been killed by {attacker}!"

Recharge – {hero name} – {amount}

* The hero increases his MP. If a command is given that would bring the MP of the hero above the **maximum value** (**200)**, MP is increased to **200**. (the MP can’t go over the maximum value).
* Print the following message:
  + "{hero name} recharged for {amount recovered} MP!"

Heal – {hero name} – {amount}

* The hero increases his HP. If a command is given that would bring the HP of the hero above the **maximum value (100)**, HP is increased to **100** (the HP can’t go over the maximum value).
* Print the following message:
  + "{hero name} healed for {amount recovered} HP!"

### Input

* On the first line of the standard input you will receive an integer **n**
* On the next **n** lines, the heroes themselves will follow with their **hit points** and **mana points** separated by empty space in the following format
* You will be receiving different **commands**, each on a new line, separated by " – ", until the "End" command is given

### Output

* Print all members of your party who are **still alive**, sorted by their **HP in descending order**, then by their **name in ascending order**, in the following format (their HP/MP need to be indented 2 spaces):

"{hero name}

HP: {current HP}

MP: {current MP}

..."

### Constraints

* The starting HP/MP of the heroes will be valid, 32-bit integers, will never be negative or exceed the respective limits.
* The HP/MP amounts in the commands will never be negative.
* The hero names in the commands will always be valid members of your party. No need to check that explicitly

### Examples

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| --- | --- |
| **Input** | **Output** |
| 2  Solmyr 85 120  Kyrre 99 50  Heal - Solmyr - 10  Recharge - Solmyr - 50  TakeDamage - Kyrre - 66 - Orc  CastSpell - Kyrre - 15 - ViewEarth  End | Solmyr healed for 10 HP!  Solmyr recharged for 50 MP!  Kyrre was hit for 66 HP by Orc and now has 33 HP left!  Kyrre has successfully cast ViewEarth and now has 35 MP!  Solmyr  HP: 95  MP: 170  Kyrre  HP: 33  MP: 35 |
| **Comments** | | |
| These are examples of successful actions. The different colors denote the commands and their respective messages. | | |
| **Input** | **Output** |
| 4  Adela 90 150  SirMullich 70 40  Ivor 1 111  Tyris 94 61  Heal - SirMullich - 50  Recharge - Adela - 100  CastSpell - Tyris - 1000 - Fireball  TakeDamage - Tyris - 99 - Fireball  TakeDamage - Ivor - 3 - Mosquito  End | SirMullich healed for 30 HP!  Adela recharged for 50 MP!  Tyris does not have enough MP to cast Fireball!  Tyris has been killed by Fireball!  Ivor has been killed by Mosquito!  SirMullich  HP: 100  MP: 40  Adela  HP: 90  MP: 200 |
| **Comments** | | |
| Heal – SirMullich healed for 30 HP due to the HP max limit.  Recharge – Adela recharged for 50 MP due to the MP max limit.  CastSpell – Tyris does not have enough MP to cast the spell.  TakeDamage – Tyris`s HP is reduced by 99, thus becoming -5, which means that he is dead.  TakeDamage – Ivor`s HP is now -2, so he is dead too.  After the "End" command we print the remaining living heroes, sorted by their HP in reverse order. | | |