

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

## D. Unix Tree

time limit per test: 1 second  
memory limit per test: 256 megabytes  
input: tree.in

Yahya graduated from the faculty of pharmacy a while ago, but he recently found out he had a big passion for computer science and development which drove him to flip his career around and dive in a field he very much likes. He joined 1337 and started solving new kinds of puzzles and learning everything there is about programming and software development. He discovered something called 'The Holy Graph' where students choose a path and keep solving assignments on that path, popular assignments involved rewriting Linux commands from scratch.

The one he has been stuck on for 2 weeks now is the Linux `tree` command which prints in a tree-like pattern the structure of a given directory (*cf.* example output). He needs your help to complete the assignment and continue his path in the Holy Graph.

You are given a file system description and a starting directory and you need to print the tree-like pattern starting from that directory.

The separator is a pipe character '|' either followed by an underscore '\_' if the line corresponds to the last element of the current directory, or a dash '-' otherwise. The separation between each level is 3 space characters. Refer to the sample output for a better understanding of the format.

### Input

The first line of input contains the starting directory name. The next line contains an integer  $1 \leq N \leq 2000$ , the number of following lines describing the filesystem.

$N$  lines follow. Each line will contain two strings composed of lowercase alphanumeric characters only, `parent child` respectively representing the parent directory and the child, which could be a directory or a file. If an element is the parent of no other element, it's considered to be a file. Otherwise, it's a directory.

Assume that the starting directory always exists in the input, the given file system does not contain any cycles and that there are at least one folder and one file in the filesystem.

### Output

On the first line output the tree structure as described above. On the second line, output a sentence describing the count of the directories and files seen during the traversal of the underlying filesystem of the starting directory in the following form:

<dirs> directories, <files> files

All directories and files in each level must be printed in lexicographical order, *i.e* alphabetical order.

### Examples

input

Copy

home  
9  
home hacker42  
hacker42 downloads  
hacker42 desktop  
hacker42 labs  
downloads movie.mp4  
downloads book.pdf  
labs 1337  
1337 libstd.c  
1337 printf.c

output

Copy

home  
|\_\_ hacker42  
|\_\_ -- desktop  
|\_\_ -- downloads  
|\_\_ |\_\_ book.pdf  
|\_\_ |\_\_ movie.mp4  
|\_\_ labs  
|\_\_ 1337  
|\_\_ |\_\_ libstd.c  
|\_\_ |\_\_ printf.c  
  
5 directories, 5 files

input

Copy

home  
1  
home hello.c

output

Copy

home  
|\_\_ hello.c  
  
1 directories, 1 files

### ACPC Scientific Committee Archive

#### Private

#### Participant



#### → About Group

https://www.youtube.com/@MoamenAhmed98/play

[Group website](#)

#### → Group Contests

- Tunisian Collegiate Programming Contest (2017)
- Azhar Collegiate Programming Contest 2019
- The 2018 Menofia University Collegiate Programming Contest
- ICPC International Collegiate Programming Contest, Assiut Collegiate Programming Contest (2019)
- International Collegiate Programming Contest, GUC Collegiate Programming Contest (2019)
- International Collegiate Programming Contest, Aleppo University Collegiate Programming Contest(2018)
- The 2025 ICPC Egyptian Collegiate Programming Contest for Teens(Online Qualification)
- ECPC Qualifications 2021 - Day 4
- ACPC Kickoff 2025
- International Collegiate Programming Contest, Al-Baath, Tishreen, Aleppo and Damascus Collegiate Programming Contest (2021)

#### The 2020 Egyptian Collegiate Programming Qualification Contest Day 2

- OCPC 2025 (Qualification)
- OCPC 2025
- ACPC 2024 (Mirror)
- LCPC 2024 (Mirror)
- JCPC 2024 (Mirror)
- EthCPC (Mirror)
- PCPC 2024
- LyCPC 2024
- AOCPC 2024
- AOCPC 2023
- QCPC 2024 (Mirror)
- TCPC 2024 (Mirror)
- AICPC 2023
- SCPC 2024 (Mirror)
- SCPC 2024 For Teens (Mirror)
- ECPC 2024 (Mirror)
- ECPC Qualifications 2024 Day 6 (Mirror)
- ECPC Qualifications 2024 Day 5 (Mirror)
- ECPC Qualifications 2024 Day 4 (Mirror)

input

Copy

home

4

dev main.cpp

pictures me.jpeg

home dev

home pictures

output

Copy

home

|-- dev

|   |\_\_ main.cpp

|\_\_ pictures

|\_\_ me.jpeg

3 directories, 2 files

input

Copy

downloads

9

home hacker42

hacker42 downloads

hacker42 desktop

hacker42 labs

downloads movie.mp4

downloads book.pdf

labs 1337

1337 libstd.c

1337 printf.c

output

Copy

downloads

|-- book.pdf

|\_\_ movie.mp4

1 directories, 2 files

- [ECPC Qualifications 2024 Day 3 \(Mirror\)](#)
- [ECPC Qualifications 2024 Day 2 \(Mirror\)](#)
- [ECPC Qualifications 2024 Day 1 \(Mirror\)](#)
- [International Collegiate Programming Contest, Damascus University Collegiate Programming Contest\(2018\)](#)
- [International Collegiate Programming Contest, Al-Baath, Tishreen, Aleppo and Damascus Collegiate Programming Contest \(2021\)](#)
- [The 2023 ICPC Egyptian Collegiate Programming Contest \(Qualifications Day 2\)](#)
- [ACPC Girls 2024](#)
- [The 2023 ICPC Egyptian Collegiate Programming Contest \(Qualifications Day 6\)](#)
- [The 2023 ICPC Egyptian Collegiate Programming Contest \(Qualifications Day 1\)](#)
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- [SCPC 2020](#)
- [SCPC 2017](#)
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