# GUESS WHO

Create a Python program to simulate a (simplified) game of Guess Who…

Guess Who.. is a game featuring 24 characters / caricatures. Each character has distinctive traits (Name, Gender, Hair color, Hair length, Glasses, Hat, Mustache, Beard, Bald).

The goal of the game is to guess the character chosen by the opponent by asking a series of questions to which the opponent can answer with "YES" or "NO".

The program to be implemented involves playing a simplified game, in which the player is supposed to win if, after filtering the characters with a series of questions, there is only one character left.

In particular, the program must:

1. Read character characteristics from the `characters.txt` file and memorize them. This file contains the individual fields separated by a ";" and contains a first header row, useful for identifying the fields reported for each personage.

2. Read the user's questions from a second file (for example, "questions1.txt" or "questions2.txt"). The file of questions contains, one per line, the questions asked by the user, in the format

   ```
   feature_name = feature_value
   ```

(for example, Beard = YES, or Hair length = Short).

3. print all the characters present and related information on the screen

4. show, following each question, the characters who respond to that characteristic and to the previous ones (e.g., if the question is "Hair color = Blond", only blond characters will be shown), by printing the number of the question and the question, followed by the list of characters

5. print the final result on the screen: in particular, if at the end of the questions there is only one character left, the player won. Otherwise, the player has lost. Whether you win or lose, the program will print a message on the screen in which he communicates the outcome of the game.

Note: As the player asks questions, the set of characters shrinks more and more. For example, if the player selects first the blond characters, then the ones with glasses, the remaining characters will be blond and with glasses (not with brown, red hair, etc.).

## Example of program execution with the file "questions1.txt":

```
Game characters:
Alex - Gender: Male, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
```

Alfred - Gender: Male, Hair color: Red, Hair length: Long, Glasses: NO, Hat: NO, Mustache: Y
Anita - Gender: Female, Hair color: Blond, Hair length: Long, Glasses: NO, Hat: NO, Mustache
Anne - Gender: Female, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache
Bernard - Gender: Male, Hair color: Brown, Hair length: Short, Glasses: NO, Hat: YES, Mustac
Bill - Gender: Male, Hair color: Red, Hair length: Short, Glasses: NO, Hat: NO, Mustache: NO
Charles - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: NO, Hat: NO, Mustach
Claire - Gender: Female, Hair color: Red, Hair length: Short, Glasses: YES, Hat: YES, Mustac
David - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Eric - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: NO, Hat: YES, Mustache:
Frans - Gender: Male, Hair color: Red, Hair length: Short, Glasses: NO, Hat: NO, Mustache: N
George - Gender: Male, Hair color: White, Hair length: Short, Glasses: NO, Hat: YES, Mustach
Herman - Gender: Male, Hair color: Red, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: YES, Hat: NO, Mustache:
Maria - Gender: Female, Hair color: Brown, Hair length: Long, Glasses: NO, Hat: YES, Mustach
Max - Gender: Male, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache: Y
Paul - Gender: Male, Hair color: White, Hair length: Short, Glasses: YES, Hat: NO, Mustache:
Peter - Gender: Male, Hair color: White, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Philip - Gender: Male, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache
Richard - Gender: Male, Hair color: Brown, Hair length: Short, Glasses: NO, Hat: NO, Mustach
Robert - Gender: Male, Hair color: Brown, Hair length: Short, Glasses: NO, Hat: NO, Mustache
Sam - Gender: Male, Hair color: White, Hair length: Short, Glasses: YES, Hat: NO, Mustache:
Susan - Gender: Female, Hair color: White, Hair length: Long, Glasses: NO, Hat: NO, Mustache
Tom - Gender: Male, Hair color: Black, Hair length: Short, Glasses: YES, Hat: NO, Mustache:


Step 1 - question: Hair color = Blond
Selected characters:
Anita - Gender: Female, Hair color: Blond, Hair length: Long, Mustache: NO, Beard: NO, Bald:
Charles - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald
David - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Eric - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: YES, Bald:
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: YES, Beard: NO, Bald: N

Step 2 - question: Hair length = Short
Selected characters:
Charles - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald
David - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Eric - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: YES, Bald:
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: YES, Beard: NO, Bald: N

Step 3 - question: Glasses = YES
Selected characters:
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: YES, Beard: NO, Bald: N

Congratulations, you win! Character selected:
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: YES, Beard: NO, Bald: N

## Example of program execution with the file "questions2.txt":

```
Game characters:
Alex - Gender: Male, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Alfred - Gender: Male, Hair color: Red, Hair length: Long, Glasses: NO, Hat: NO, Mustache: Y
Anita - Gender: Female, Hair color: Blond, Hair length: Long, Glasses: NO, Hat: NO, Mustache
Anne - Gender: Female, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache
Bernard - Gender: Male, Hair color: Brown, Hair length: Short, Glasses: NO, Hat: YES, Mustac
Bill - Gender: Male, Hair color: Red, Hair length: Short, Glasses: NO, Hat: NO, Mustache: NO
Charles - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: NO, Hat: NO, Mustach
Claire - Gender: Female, Hair color: Red, Hair length: Short, Glasses: YES, Hat: YES, Mustac
David - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Eric - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: NO, Hat: YES, Mustache:
Frans - Gender: Male, Hair color: Red, Hair length: Short, Glasses: NO, Hat: NO, Mustache: N
George - Gender: Male, Hair color: White, Hair length: Short, Glasses: NO, Hat: YES, Mustach
Herman - Gender: Male, Hair color: Red, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Glasses: YES, Hat: NO, Mustache:
Maria - Gender: Female, Hair color: Brown, Hair length: Long, Glasses: NO, Hat: YES, Mustach
Max - Gender: Male, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache: Y
Paul - Gender: Male, Hair color: White, Hair length: Short, Glasses: YES, Hat: NO, Mustache:
Peter - Gender: Male, Hair color: White, Hair length: Short, Glasses: NO, Hat: NO, Mustache:
Philip - Gender: Male, Hair color: Black, Hair length: Short, Glasses: NO, Hat: NO, Mustache
Richard - Gender: Male, Hair color: Brown, Hair length: Short, Glasses: NO, Hat: NO, Mustach
Robert - Gender: Male, Hair color: Brown, Hair length: Short, Glasses: NO, Hat: NO, Mustache
Sam - Gender: Male, Hair color: White, Hair length: Short, Glasses: YES, Hat: NO, Mustache:
Susan - Gender: Female, Hair color: White, Hair length: Long, Glasses: NO, Hat: NO, Mustache
Tom - Gender: Male, Hair color: Black, Hair length: Short, Glasses: YES, Hat: NO, Mustache:


Step 1 - question: Gender = Male
Selected characters:
Alex - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald: Y
Alfred - Gender: Male, Hair color: Red, Hair length: Long, Mustache: NO, Beard: NO, Bald: YF
Bernard - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: YES, Bal
Bill - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: NO,
Charles - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Balc
David - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Eric - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: YES, Bald:
Frans - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: NC
George - Gender: Male, Hair color: White, Hair length: Short, Mustache: NO, Beard: YES, Balc
Herman - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: N
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: YES, Beard: NO, Bald: N
Max - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald: YF
Paul - Gender: Male, Hair color: White, Hair length: Short, Mustache: YES, Beard: NO, Bald:
Peter - Gender: Male, Hair color: White, Hair length: Short, Mustache: NO, Beard: NO, Bald:
```

Philip - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Richard - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: NO, Bald
Robert - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: NO, Bald
Sam - Gender: Male, Hair color: White, Hair length: Short, Mustache: YES, Beard: NO, Bald: N
Tom - Gender: Male, Hair color: Black, Hair length: Short, Mustache: YES, Beard: NO, Bald: N

Step 2 - question: Hair length = Short
Selected characters:
Alex - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald: Y
Bernard - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: YES, Bal
Bill - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: NO,
Charles - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald
David - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Eric - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: YES, Bald:
Frans - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: NO
George - Gender: Male, Hair color: White, Hair length: Short, Mustache: NO, Beard: YES, Bald
Herman - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: N
Joe - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: YES, Beard: NO, Bald: N
Max - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald: YE
Paul - Gender: Male, Hair color: White, Hair length: Short, Mustache: YES, Beard: NO, Bald:
Peter - Gender: Male, Hair color: White, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Philip - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Richard - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: NO, Bald
Robert - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: NO, Bald
Sam - Gender: Male, Hair color: White, Hair length: Short, Mustache: YES, Beard: NO, Bald: N
Tom - Gender: Male, Hair color: Black, Hair length: Short, Mustache: YES, Beard: NO, Bald: N

Step 3 - question: Beard = YES
Selected characters:
Bill - Gender: Male, Hair color: Red, Hair length: Short, Mustache: NO, Beard: NO, Bald: NO,
David - Gender: Male, Hair color: Blond, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Philip - Gender: Male, Hair color: Black, Hair length: Short, Mustache: NO, Beard: NO, Bald:
Richard - Gender: Male, Hair color: Brown, Hair length: Short, Mustache: NO, Beard: NO, Bald

Too bad, you lose.