

Total Playtime by Genre

The input is song name, singer name, genre, and time of the song. Your task is to implement a program which receives genres of songs as input then calculates total playtime of all genres and displays the top 3 longest genres of songs.

Input

The first line is number of songs.

The next lines are filled with name, singer-name, genre and time of the song as in examples.

Output

3 longest genres of the songs with their total playtime sorted from large to small. One line per genre. If there are less than 3 genres, show them all. Hint: assume that total time are different for all genres.

Example

Input (from keyboard)	Output (on screen)
9 Shake It Off, Taylor Swift, Pop, 3:39 Rolling In The Deep, Adele, Pop, 3:48 Chandelier, Sia, Pop, 3:36 Roar, Katy Perry, Pop, 3:42 Hotel California, Eagle, Rock, 6:30 We Are the Champions, Queen, Rock, 2:59 Hello Dolly, Louis Armstrong, Jazz, 2:27 Bohemian Rhapsody, Queen, Rock, 5:55 Coward of the County, Kenny Rogers, Country, 4:02	Rock --> 15:24 Pop --> 14:45 Country --> 4:02