

Top 100 chess players

In this assignment, you write a program that reads in a list of the top 100 highest rated chess players in the world and prints out a different view of the data.

The input file, *chess-top-100.csv*,

has the following format: **Rank; Name; Country; Rating; B-Year**. A semi-colon is the separator between fields. The name of the chess player consists of *last name, first name*.

For example, the following shows the first 10 lines in the file:

```
1; Carlsen, Magnus; NOR; 2839; 1990
2; Caruana, Fabiano; USA; 2827; 1992
3; Mamedyarov, Shakhriyar; AZE; 2820; 1985
4; Ding, Liren; CHN; 2804; 1992
5; Aronian, Levon; ARM; 2780; 1982
6; Giri, Anish; NED; 2780; 1994
7; Vachier-Lagrave, Maxime; FRA; 2780; 1990
8; Kramnik, Vladimir; RUS; 2779; 1975
9; So, Wesley; USA; 2776; 1993
10; Anand, Viswanathan; IND; 2771; 1969
```

A part of the requirement (even though we will not implement it in this assignment) is that your program should later be able to look up a given chess player in an effective manner and displays his/her attributes (rank, country, rating, birth year).

Part I

In the first part, the purpose of the program is to display another view of the data, i.e. by grouping the data by country. The output should look like the following:

Players by country:

```
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ARG (1) (2653.0):
    Sandro Mareco      2653
ARM (3) (2710.3):
    Levon Aronian      2780
    Gabriel Sargissian 2691
    Hrant Melkumyan    2660
AUT (1) (2690.0):
    Markus Ragger      2690
AZE (6) (2722.3):
    Shakhriyar Mamedyarov 2820
    Teimour Radjabov      2751
    Arkadij Naiditsch     2721
    Rauf Mamedov          2699
    Eltaj Safarli         2676
    Gadir Guseinov        2667
BLR (1) (2664.0):
    Vladislav Kovalev    2664
CHN (9) (2718.7):
    Liren Ding           2804
    Yangyi Yu            2765
```

Yi Wei	2742
Hao Wang	2722
Xiangzhi Bu	2712
Chao b Li	2708
Yue Wang	2681
Hua Ni	2676
Yifan Hou	2658

...

The number in parenthesis are the number of players in each group and the average chess ratings in each group. When printing the chess player name and rating, use this format string: `{>40}{:>10d}`

In addition to the above requirement, you should make sure that your program can easily look up a given chess player and displays his/her attributes (rank, country, rating, birth year), even though that functionality is not part of the current requirements.

Part III

In the second part, we add another view of the data, i.e. grouping by birth year. The output should look like the following:

Players by birth year:

```
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1968 (1) (2701.0):
           Boris Gelfand      2701
1969 (2) (2740.5):
           Viswanathan Anand  2771
           Vassily Ivanchuk  2710
1971 (1) (2712.0):
           Michael Adams     2712
1974 (3) (2670.3):
           Matthew D Sadler   2693
           Gata Kamsky        2666
           Sergei Rublevsky   2652
1975 (2) (2759.5):
           Vladimir Kramnik   2779
           Veselin Topalov    2740
1976 (3) (2708.3):
           Peter Svidler      2756
           Zoltan Almasi      2702
           Liviu-Dieter Nisipeanu 2667
1977 (2) (2659.5):
           Evgeniy Najer      2663
           Alexander Morozevich 2656
1979 (3) (2671.0):
           Peter Leko         2690
           Rustam Kasimdzhanov 2662
           Alexander Motylev  2661
```

1980 (1) (2661.0):	Vladimir Malakhov	2661
1981 (1) (2672.0):	Krishnan Sasikiran	2672
1982 (3) (2715.3):	Levon Aronian	2780
	Francisco Vallejo Pons	2713
	Lazaro Bruzon Batista	2653
1983 (7) (2707.1):	Alexander Grischuk	2769
	Dmitry Jakovenko	2752
	Pavel Eljanov	2703
	Gabriel Sargissian	2691
	Ruslan Ponomariov	2681
	Etienne Bacrot	2678
	Hua Ni	2676

...