

KOtourSEYGO

A script that generates the Start Table (Rounds 1-2) of a KO tournament with $n > 1$ players. It is written in `sage` and, with minimal modifications, it runs in `python`, also.

Install and run

Needs to have `sage` installed. Unzip in a directory and run `sage` in a terminal in that directory.

Runs from the file KOtourSEYGO.sage (comment/uncomment lines or introduce other code, as you need).

```
sage: runfile KOtourSEYGO.sage
```

or run from the command line:

```
sage: load('KOtourSEYGOdefinitions.sage') # load definitions
sage: GenerateR1R2(PLAYERS) # generates the StartTable reading the list of players from a file.
```

See more commands in *screenshots* directory.

Python version

```
$ python KOtourSEYGO.py
```

or

```
$ python3 KOtourSEYGO.py
```

Documentation and test-runs embeded-commented in the scripts.

Input/Output

Given a list of $n > 1$ players, it returns the first 1-2 rounds of a KO tournament.

A player is a list [string, int], where string contains the name of the player and int is its rank (which can be a number – GOR from eurogodatabase or 1000+rank for dan players, 100+rank for dan players, 100-rank for kyu players).

The list has to be ordered decreasingly.

The list can be introduced directly in the sage file, inline, or in a file with a player on each line.

For test runs, a TestStartList can be generated automatically.



Other results can also be obtained using the definitions/functions/methods from the .sage files.

Algorithm

- The list of players is appended with dummy players, till its length is the first power of 2.
- A tree-list is created
 - Players 1 and 2 are placed on the top and on the bottom of the output table, respectively. (generation).
 - Players 5-8 are intercalated (the 3rd generation), and so on.
 - The number of players is doubled with each new generation.
 - A new player is inserted before or after a player from the previous generation in the opposite way as its ancestor was introduced in the list.
- The players from the input list are repositioned according to the places of the same index in the tree-list.
- In successive steps, the positions of the no dummy players introduced in the same generation are randomized.
- In the output table, dummy players are not displayed and the corresponding pairing (containing just one player) is displayed indented in round 2.
- The seed-favorite number is displayed in the final output for a fourth of the players.