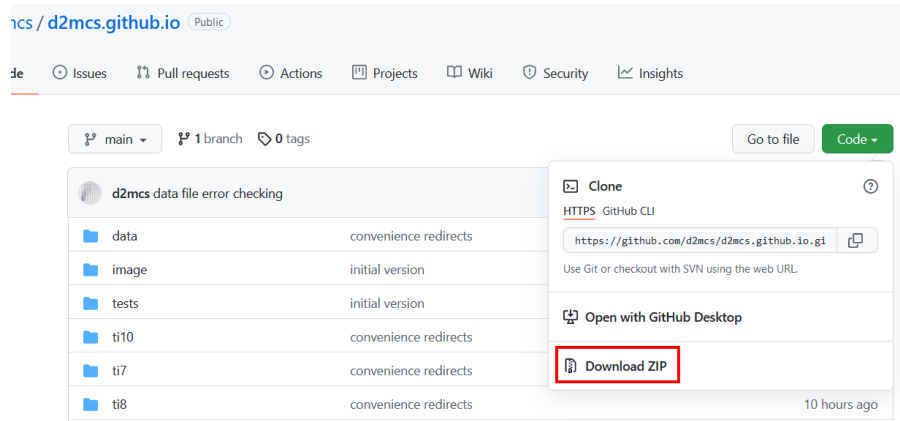


D2MCS Step-by-Step Instructions (Windows)

Setup

First, pull the code from <https://github.com/d2mcs/d2mcs.github.io>. If you're unfamiliar with git/github you can just select Code → Download ZIP then unzip the downloaded folder.



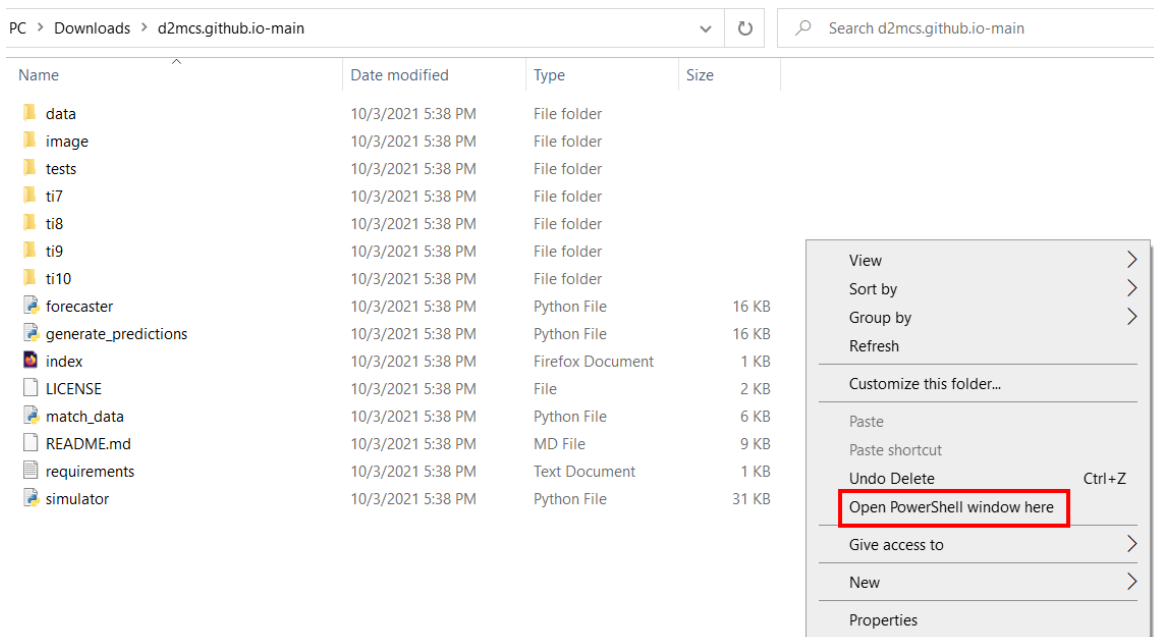
To run the code, you will need Python version 3.6 or greater. You can download python from <https://www.python.org/>. When installing make sure to select the checkbox for “add Python to PATH.”



Otherwise the default installation options are fine (you do not need to disable the PATH length limit).

Finally, you'll need to install the required python packages. Open a powershell window in the folder containing the D2MCS source code by shift+right clicking the folder and selecting “Open PowerShell window here.” Make sure you're doing this in the folder containing the code – if you don't the commands won't work.

Update: source code is now contained a folder titled “src”. Make sure to navigate to the src folder before opening a PowerShell window.



Run the command “`pip install -r requirements.txt`” (without the quotes). You should see pip installing the required packages. Once this is complete you can generate predictions using “`python generate_predictions.py 10000`”.

```
PS C:\Users\...\Downloads\d2mcs.github.io-main> python generate_predictions.py 10000
100%|...| 10000/10000 [00:04<00:00, 2187.77it/s]
Output saved to ti10/output.html
PS C:\Users\...\Downloads\d2mcs.github.io-main>
```

The number at the end controls the number of simulations to run. 10000 is enough to get reasonable estimates, but you’ll want to run more if you want accurate probabilities. The output report will be saved to the ti10 folder. To view it open the ti10 folder and double click on “output.html”. You should see something like this:

The International 10 Predictions

10000 samples *
Updated 2021-10-04 00:40 UTC

CUP A

Bracket Probabilities

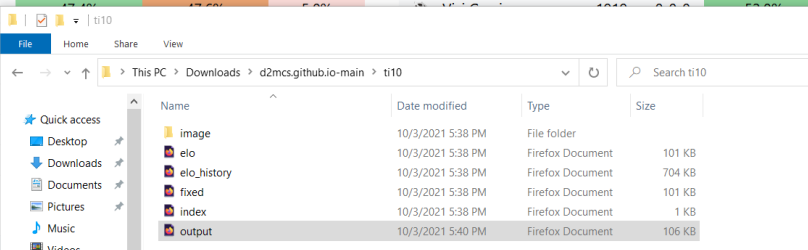
	Rating	Record	Upper Bracket	Lower Bracket	Eliminated
PSG.LGD	2082	0-0-0	93.7%	6.3%	<0.1%
Team Spirit	1989	0-0-0	72.4%	26.5%	1.1%
OG	1942	0-0-0	55.6%	41.1%	3.3%
Elephant	1923	0-0-0	44.4%	55.6%	0.0%
T1	1903	0-0-0	33.3%	66.7%	0.0%
Alliance	1887	0-0-0	22.2%	77.8%	0.0%
Quincy Crew	1884	0-0-0	11.1%	88.9%	0.0%
Fnatic	1833	0-0-0	0.0%	100.0%	0.0%
SG esports	1760	0-0-0	0.0%	100.0%	0.0%

Match Probabilities

GROUP B

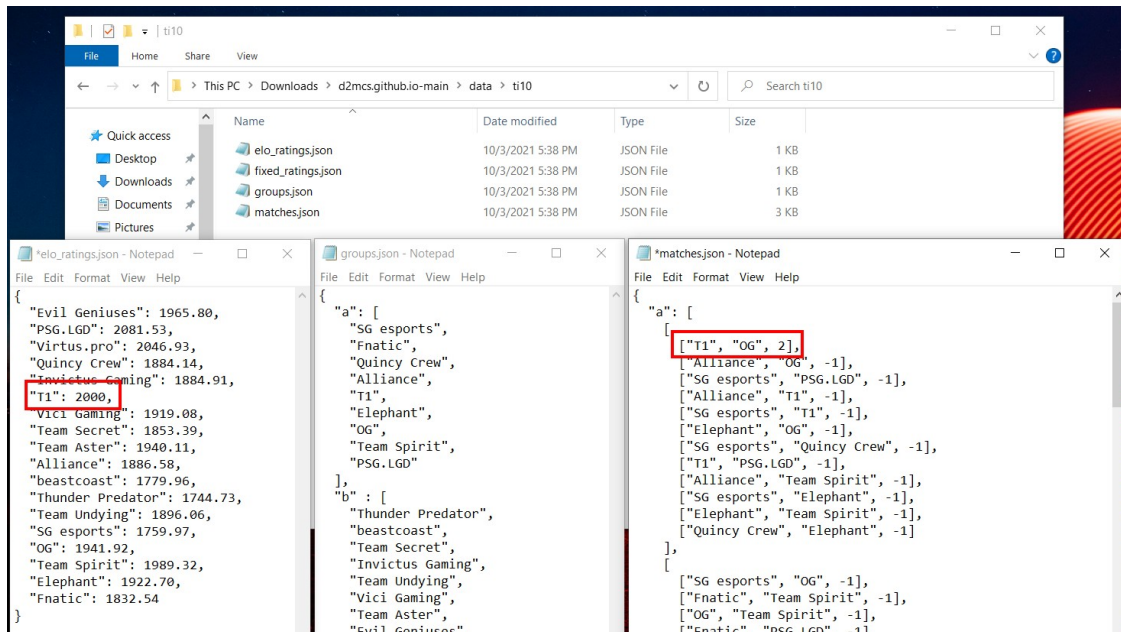
Bracket Probabilities

	Team	Rating	Record	Upper Bracket
1	Virtus.pro	2047	0-0-0	90.3%
2	Evil Geniuses	1966	0-0-0	70.0%
3	Team Aster	1940	0-0-0	60.5%



Changing Team Ratings and Match Results

There are three plain-text JSON files that can be edited to alter predictions. All three files are contained in the data/ti10 folder and can be edited using any text editor (e.g., notepad). Team ratings can be controlled with **elo_ratings.json**, groups can be controlled with **groups.json**, and matches can be controlled with **matches.json**. For example, in the following image I manually change T1's rating to 2000 then change the match result between T1 and OG to be a 2-0:



Upon running the code again, the report will look like this:

GROUP A

Bracket Probabilities

Team	Rating	Record	Upper Bracket	Lower Bracket	Eliminated
PSG.LGD	2082	0-0-0	96.3%	3.7%	-
T1	2000	1-0-0	90.8%	9.2%	<0.1%
Team Spirit	1989	0-0-0	76.7%	22.9%	0.4%
Elephant	1923	0-0-0	42.1%	54.8%	3.1%
OG	1942	0-0-1	35.4%	61.2%	3.4%
Alliance	1887	0-0-0	24.8%	67.9%	7.3%
Quincy Crew	1884	0-0-0	23.7%	69.3%	6.9%
Fnatic	1833	0-0-0	8.5%	71.7%	19.9%
SG esports	1760	0-0-0	1.7%	39.3%	59.0%

Match Probabilities

Day 1			
	2-0	1-1	0-2
T1 (2)	34%	49%	17%
Alliance	18%	49%	34%
SG esports	2%	22%	75%
OG (0)			
PSG.LGD			

GROUP B

Bracket Probabilities

Team	Rating
Virtus.pro	2047
Evil Geniuses	1966
Team Aster	1940
Vici Gaming	1919
Team Undying	1896
Invictus Gaming	1885
Team Secret	1853
beastcoast	1780
Thunder Predator	1745

Match Probabilities

Day 1	
Team Secret	
Thunder Predator	
Team Aster	

Match results should either be 2 (2-0), 1 (1-1), 0 (0-2) or -1 (match hasn't been played yet). So, for example, if I wanted the result to be a 2-0 in favor of OG instead I would use a 0 instead of a 2.