CSN - Second Lab

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Introduction

The aim of this lab project is to analyze a degree distribution and select a theoretic model that best fits it. There are three sequences of which we can work on:

1. Undirected degree sequence.
2. In-degree sequence.
3. Out-degree sequence.

In our case, we have chosen to work with the out-degree one for 10 different languages.

The first step on the analysis is to compute different metrics for each language, such as the length of the sequence (N) and the maximum degree, among others.

Additionally, to make our computations easier we have added a couple of metrics that we were not required in Table 1, which are M' and C.

The resulting table is the following:

Language	N	M	Maximum Degree	M/N	N/M	MP	C
Arabic	15678	70589	4896	4.502424	0.2221026	12530.413	165907.83
Basque	6188	25876	2097	4.181642	0.2391405	4231.383	54154.09
Catalan	24727	204095	6622	8.253933	0.1211544	29926.062	561322.53
Chinese	23946	185013	7537	7.726259	0.1294287	24832.108	549519.06
Czech	41912	262218	12671	6.256394	0.1598365	41038.656	721024.15
English	17775	200041	7040	11.254065	0.0888568	23919.120	657764.54
Greek	9280	44768	2737	4.824138	0.2072909	8938.332	91074.93
Hungarian	25534	107178	1020	4.197462	0.2382392	21493.722	177186.08
Italian	12285	56829	1671	4.625885	0.2161748	11701.853	104228.03
Turkish	15287	47186	4488	3.086675	0.3239732	8162.505	108443.77

Results

Having computed the basic metrics, we now proceed onto compute the most likely parameters for the different given distributions.

Discussion

Methods