

## 04BIG DATA COMPUTING 2019-20 – HOMEWORK 3 – GROUP 04

### Required Tests (Java)

Dataset	K	L	num-executors	Init	T1	T2	AvgDist
Glove2M300d.txt	100	16	16	21690	17289	19242	29.04073384782192
Glove2M300d.txt	100	16	8	32978	29811	19350	29.04073384782192
Glove2M300d.txt	100	16	4	56114	46917	20881	29.04073384782192
Glove2M300d.txt	100	4	4	52307	46084	1173	29.029582748194713

### Observations

We have run 4 experiments:

- `.cache()` inside initialization + `.repartition(L)` inside Round1: only for this we weren't be able to run the 4<sup>th</sup> test due to errors 52 and 413 that cause Out of Memory.
- `.cache()` at the end of Round 1 + `.repartition(L)` inside Round1: slower T1, faster and constant T2
- `.cache()` at the end of Round 1 + `.repartition(L)` inside initialization: slower Init, Faster T1 and constant T2.
- `.cache()` inside initialization + `.repartition(L)` inside initialization: slower T2.

So the best times are the 2<sup>nd</sup> and 3<sup>rd</sup> experiments. Between these two the fastest is the 3<sup>rd</sup> that we reported in the above table.

We also report the other 3 experiments table below as reference.

#### 1) Cache Init

Dataset	K	L	num-executors	Init	T1	T2	AvgDist
Glove2M300d.txt	100	16	16	15886	26700	36390	29.04073384782192
Glove2M300d.txt	100	16	8	22481	34677	42817	29.04073384782192
Glove2M300d.txt	100	16	4	41284	74432	65456	29.04073384782192
Glove2M300d.txt	100	4	4	<i>You will not be able to run this test</i>			

#### 2) Cache end Round 1

Dataset	K	L	num-executors	Init	T1	T2	AvgDist
Glove2M300d.txt	100	16	16	14527	34806	19763	29.04073384782192
Glove2M300d.txt	100	16	8	21402	57782	19275	29.04073384782192
Glove2M300d.txt	100	16	4	31642	87786	19255	29.04073384782192
Glove2M300d.txt	100	4	4	31613	90222	1154	29.029582748194713

#### 4) Repartition+Cache Init. NO cache Round1

Dataset	K	L	num-executors	Init	T1	T2	AvgDist
Glove2M300d.txt	100	16	16	23636	14044	43658	29.04073384782192
Glove2M300d.txt	100	16	8	35719	28239	53100	29.04073384782192
Glove2M300d.txt	100	16	4	56890	42189	59072	29.04073384782192
Glove2M300d.txt	100	4	4	56981	49107	48130	29.038756561329237