<Report 2018-26190 유성욱>

- Environment

Window 10 Education

Intel Core i3-4150 CPU 3.50GHz

RAM 8.00GM 64 bit

Ubuntu 16.04 (using vmware)

- Brief Description

```
* Hw 1-1
2 step operation
map 1
    for each line, emit {id1 , one}, {id2, one}
reduce 1
    write {id1, sum(follower)} into temp file

map 2
    from the temp file, sort by value and then, emit the sorted list {id, follower}
    => non decreasing order for each line
reduce 2
    rank top k and output the ranked list into file


* HW 1-2
map
    emit {{smaller id, larger id}, one}
reduce
    {smaller id, larger id}, sum(values)}
    if sum =1
        write the context
    else
        drop it

```

- Detailed Process

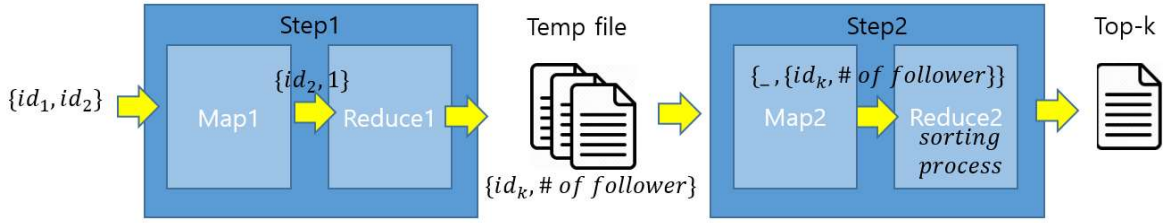
Hw1-1 …

Social Network dataset consists of $\{id_1, id_2\}$ pairs. It means id_1 follows id_2.

So, # of id1's follower ++, if there exist id1 another's id in a line.

In this situation, we have to find $\{id_k$, # of id_k's follower$\}$

I will show the whole process that finds outputs



Hw1-2 …

Non symmetric friendship dataset consists of $\{\mathrm{id}_1,\ \mathrm{id}_2\}$ pairs. It means id_1 follows id_2.

If a relationship becomes a symmetric friendship,

there must be $\{\mathrm{id}_1, \mathrm{id}_2\}$ and $\{\mathrm{id}_1,\ \mathrm{id}_2\}$ in the dataset.

So, in the mapper, if it emits $\{(\mathrm{Id}_{\mathrm{smaller}},\ \mathrm{Id}_{\mathrm{larger}}],\ 1\}$,

In the Reducer, if there is a symmetric friendship, values is [1, 1]

Therefore, if the sum(values) = 1, the relationship is non symmetric.

I will show the whole process that finds outputs