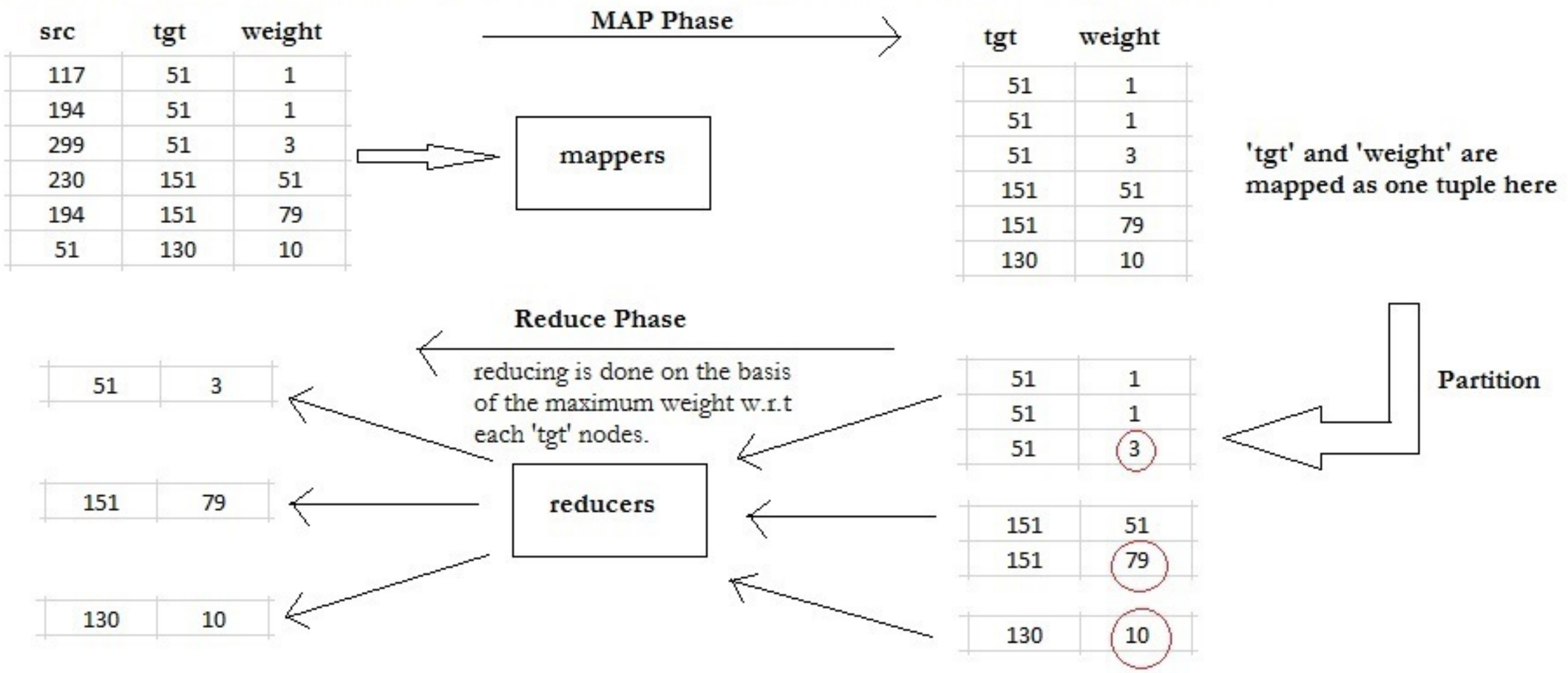
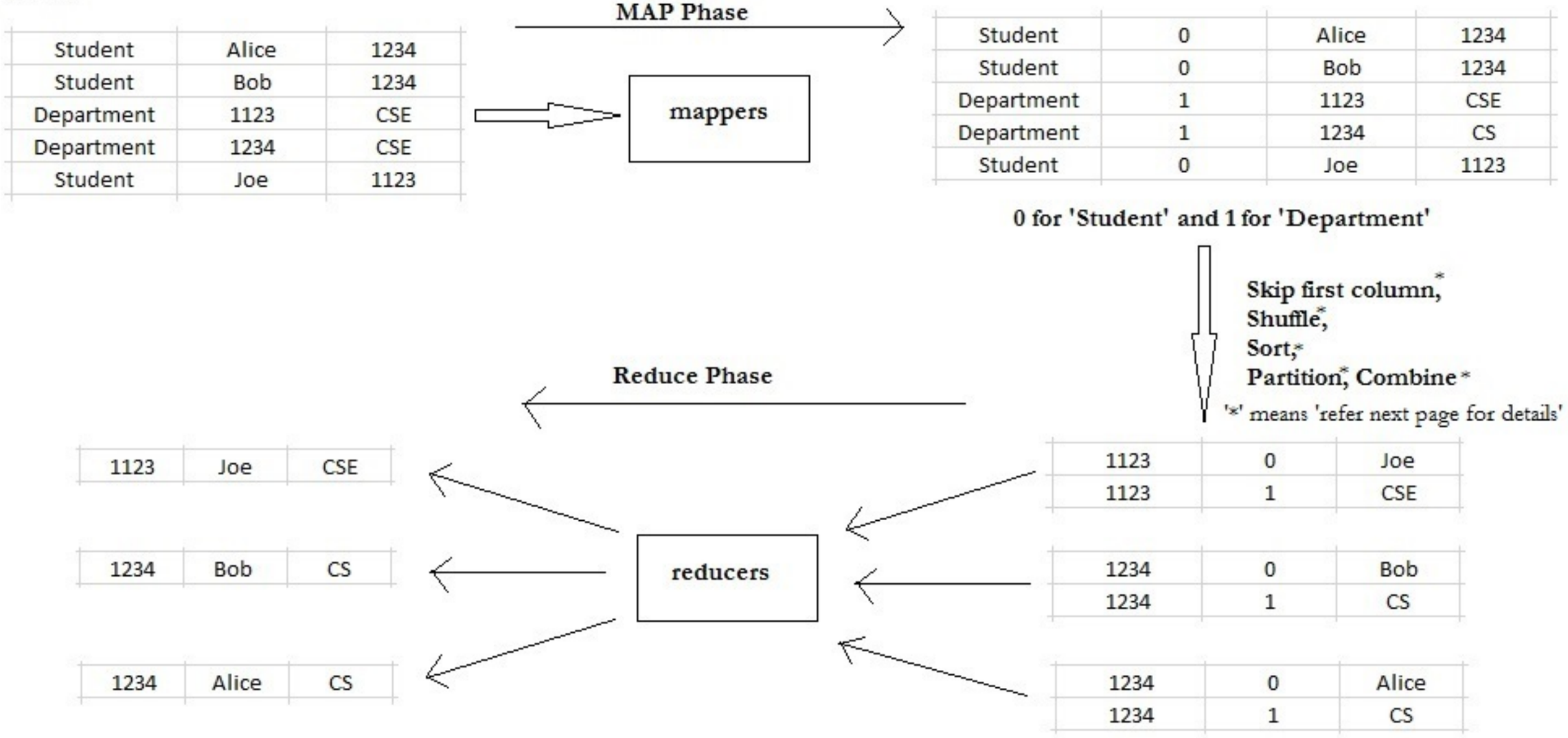
1.a. 'src' is skipped and we focus on 'tgt' and corresponding 'weight's. We use the toy example for demo.



1.b. We implement Side join algorithm on the given small data. The flowchart of the MapReduce Algorithm for the task is as explained below:



Skip first column:

Student	0	Alice	1234
Student	0	Bob	1234
Department	1	1123	CSE
Department	1	1234	CS
Student	0	Joe	1123

0	Alice	1234
0	Bob	1234
1	1123	CSE
1	1234	CS
0	Joe	1123

Shuffle:

1	1123	CSE
1	1234	CS

1	CSE	1123
1	CS	1234

0	Alice	1234
0	Bob	1234
1	CSE	1123
1	CS	1234
0	Joe	1123

1234	0	Alice
1234	0	Bob
1123	1	CSE
1234	1	CS
1123	0	Joe

Sort:

1234	0	Alice
1234	0	Bob
1123	1	CSE
1234	1	CS
1123	0	Joe

1123	0	Joe
1123	1	CSE
1234	1	CS
1234	0	Bob
1234	0	Alice

Partition:

1123	0	Joe
1123	1	CSE
1234	1	CS
1234	0	Bob
1234	0	Alice

1123	0	Joe

1123	1	CSE

1234	1	CS

1234	0	Bob

1234	0	Alice

Combine:

1123	0	Joe

1123	1	CSE

1234	1	CS

1234	0	Bob

1234	0	Alice

1123	0	Joe
1123	1	CSE

1234	0	Bob
1234	1	CS

1234	0	Alice
1234	1	CS