

Exercises Social Software, Lecture 4

Exercise 1 *Is it possible for p to be common knowledge, while Jan does not know p ?*

Exercise 2 *Is it possible for p to be common belief, while p is not true?*

For the next exercises, assume the following scenario is common knowledge among Alice and Bob:

- Alice and Bob are each going to be told a natural number; these numbers will be one apart.
- The numbers are then whispered into Alice's and Bob's ears.

Suppose Alice privately hears 3 and Bob privately hears 4.

Exercise 3 *Draw a possible worlds model for the situation.*

Exercise 4 *Do both Alice and Bob individually know that the numbers are smaller than 6?*

Exercise 5 *Do Alice and Bob have common knowledge that the numbers are smaller than 6?*

Exercise 6 *Do Alice and Bob have common knowledge that the numbers are smaller than 1,000,000?*