Extend the system you have developed for Assignment 1, where a user can specify her privacy constraints and the system can enforce them on the social network.

**Scenario:** Consider the famous two-body problem, where a married couple (say Alice and Bob) decides to relocate in a new country (say France) and is looking for jobs there. Both of them are using your online social network to find a job. Both of them have their own personal privacy constraints but these constraints are not necessarily independent of each other and possibly be conflicting. Here are some possible scenarios:

- Alice thinks it’s best to publicly announce that she is looking for a job so that employers can find her, whereas Bob does not want his current boss or colleagues to know about their job search. When Alice shares the information, it will be inferred that Bob is also relocating to France.

- Alice is applying for a job that requires her to hold a driving license, whereas Alice does not hold one. Bob wants to share various pictures of them on a bus, metro, etc.

**Technical Details:** You are to develop an agent that will help each user in the system to manage their privacy and resolve conflicts if any. The agents can use various agreement technologies for deciding on what to do.

- In addition to the above two scenarios, have at least two more scenarios that depict (potential) conflict among Alice and Bob.

- Decide on an access model that you will use to represent the user’s privacy requirements. Pick an actual language to represent them (such as XACML). You can continue to use the same one as the previous assignment.

- Set up a toy social network where you have at least 10 users that are connected to each other with various relations (e.g., colleague, manager, and so on).

- Have a system that will ask a user to enter her privacy constraints and allow your users to share content with other users. Show how the information is shared with others, emphasizing how agents reach a conclusion.

You will give a demo of your system on the due date and hand in a detailed report as hard-copy. Be prepared to show all aspects of your project. Prepare a short presentation that outlines your contribution as well as your use cases. For each case, state how you handle it. **You are responsible for facilitating the demo so make sure you have the necessary software.**