1. Given the following classes "person", "parent", "happyPerson", "marriedPerson", "malePerson" and the relation "hasChild". Represent the following in DL:

   - Father
   - Strange people are parents who have only married or happy kids
   - Retired people are happy people who have at least one happy married child
   - Brave parents are parents with exactly two children
   - Married men do not have children
   - Michael is a father with children named Alice and Bob.
   - Charlie is a married man.

2. The following ontology has been defined in DL:

   - instructor ≡ person ⊓ ∃teaches.(course ⊔ lab)
   - projectCourse ≡ course ⊓ lab
   - busyInstructor ≡ instructor ⊓ ∀teaches.projectCourse
   - john: busyInstructor
   - simulation: projectCourse

   Apply the tableaux algorithm to answer the following and show your steps:

   - Is this ontology consistent? If not, what has to change to make it consistent?
   - Does John teach simulation?
   - Is simuation a lab?

3. Add the following fact to the above ontology: Mary is a person who teaches the programming course. Again apply the tableaux algorithm to answer the following:

   - Is Mary an instructor?
   - Is programming a project course?
   - Is Mary a busy instructor?