

CSC 425/525 Homework #4 (Chapter 7)

Due: Wednesday, February 15

Word process all answers. Figures may be hand drawn. Undergraduates, answer question 1 and four others. Graduate students answer all six questions.

1. Consider the following
 - Plants are alive that grow in the ground
 - Fruit is a plant that grow on trees
 - Fruit is edible, has a rind which is not edible and has seeds which are not edible
 - To eat something with an inedible rind, you must remove the rind first
 - Bananas are yellow fruit with no seeds
 - Apples are red fruit, have an edible rind and have small seeds
 - Peaches are yellow-orange fruit
 - Strawberries are red fruit, have no rind, and the seeds are small
 - Seeds are not edible but small seeds may be swallowed without harm
 - Grapes are either green or purple fruit and grow on a vine (not a tree) and have an edible rind
 - Cherries are red fruit with small seeds that should not be swallowed but the rind is edible
 - a. Create an appropriate semantic network
 - b. Explain how you can use your semantic network to answer the following questions (don't answer the questions, explain how you would obtain the answers).
 - i. Are there fruits that do not grow on trees?
 - ii. What fruit rinds can you swallow?
 - iii. What small seeds should you not swallow?
 - iv. What fruits are yellow or contain the color yellow?
2. Create a series of frames to represent the following classes and instances. Decide what attributes you feel are most significant for each of the classes. Use inheritance as much as possible.
 - a. Student
 - b. Undergraduate student
 - c. Undergraduate computer science student
 - d. Undergraduate data science student
 - e. Undergraduate computer information technology student
 - f. Student who works
 - g. Student who works in the field
3. Do problem 3 (first two sentences only, "Jane" and "Basketball") on page 273.
4. Do problem 5 on page 273-4.
5. Create a script (like the restaurant script) for going to a rock concert. Include props, roles, entry conditions and results and scenes but do not fill in any of the details of the scenes themselves.
6. Research the semantic web and select one application that you find interesting. Answer the following: What problem are they solving? Who is doing the research? Is the research on-going or over? Did the researchers use an ontology for their knowledge and if so, what domain(s)? How many agents are involved (if this information is available)? You may add more detail if you wish.