CENG 424

Logic For Computer Science

Fall '2019-2020

Assignment 6

Regulations

1. Due date is 06 January 2020. Late submission is not allowed.

2. Submissions will be via OdtuClass, do not send your homework via e-mail, or do not bring any hardcopy.

3. You can use any typesetting tool (LaTex, Word, etc.) or handwriting while writing the homework. However, you must upload the homework as a pdf file. Other formats will not be considered for grading.

4. Send e-mail to cseylan@ceng.metu.edu.tr if you need to get in contact.

5. This is an individual homework, which means you have to answer the questions on your own. Any contrary case will be considered as cheating and university regulations about cheating will be applied.

1   Question

Following axioms are given:

1. All cryprocurrencies are high-risk investments.

2. Anyone who invests on any commodity does not invest on any foreign currency.

3. People having anxiety are not interested on high-risk investments.

4. Alan invests on either a commodity or a cryptocurrency.

According to the axioms above, conclude that:

> If Alan has anxiety, then Alan does not invest on any foreign currency.

While reaching the conclusion, do the following:

1. Write down the sentences as relational logic sentences.

2. Convert them into clausal form.

3. Reach the conclusion by using resolution and show each step clearly.

4. Use the following formalism:

- $CRY(x)$: x is a cryptocurrency.
- $COM(x)$: x is a commodity.
- $FRC(x)$: x is a foreign currency.
- $HR(x)$: x is a high-risk investment.
- $ANXIETY(x)$: x has anxiety.
- $INVEST(x, y)$: x invests on y.