Logic and Computability WS14,
Assignment 0

October 13, 2014

Note: This assignment is different from subsequent assignments. It has fewer, mostly motivational tasks. The first regular class meeting on October 13 is mainly dedicated to getting to know each other and familiarization with the class’ procedures such as STicS and in-class presentations.

Presentation Guidelines

Before we ask you to do presentations in class, we would like to give you a few helpful tips and guidelines about what constitutes a good presentation in context of our class. While these guidelines aim to be general, not all of them might be applicable in each individual scenario. Use your own best judgement and common sense.

- Start a presentation with re-stating (in your own words!) the problem you had to solve. Write down the important facts/formulas on the blackboard.

- Next, give a brief outline of your solution. State which steps you are going to take, and what intermediate results you will get.

- Then, give your actual solution in detail. Write down as many intermediate steps as are necessary to illustrate what you are doing.

- If there are many similar/repetitive steps, skip ahead after explaining one or two instances. When in doubt, check with your tutor whether or not it is okay to skip ahead.
• In the end, clearly explain the final result and draw conclusions from it. Summarize once more the most important steps in your solution, pointing at the respective intermediate results you have written down.

• While presenting, speak loudly, clearly, and slowly. This is of particular importance while you face the blackboard to write.

• When writing something, read it out aloud as you write it. Not everybody might have a perfect view of the blackboard.

• Write in a reasonable size. Do not write too small, as people in the back will have a hard time reading it. But do not waste blackboard space either.

• Watch your audience. If you see puzzled faces, slow down or re-explain what you are doing. Be prepared to answer questions on interruption.

• If a problem can be solved in multiple ways, clearly indicate where you chose to take a particular step, versus where you had to take a particular step. Hint at possible alternatives, even if you have not taken them yourself.

We will try to show you how to put these guidelines into practice, by giving you a demo presentation for the following task. Note that you do not need to solve this task yourself, but it would be good if you gave it some thought before coming to class nevertheless.

**Demo Task**

Consider the following statement: “In the city of Springfield, the barber shaves exactly those Springfield men who do not shave themselves.”

Assume that the city of Springfield and its barber exist, and satisfy the above statement. Now think about the question “Who shaves the barber of Springfield?”

A. Which of the following statements is true?

• The statement quoted above is a contradiction. A “model” that satisfies this statement does not exist.
A “consistent model” that satisfies the restrictions put forth in the above-quoted statement does exist.

B. Provide reasons for your answer to the previous question. If you said that the first answer is true, clearly show the contradiction that makes it impossible to find a “model”. If you said that the the second answer is true, describe what a “consistent model” would look like, and what additional properties have to hold for Springfield, its men, and its barber.

Tasks to Solve

1. [1 point] State a sentence (in natural English language) that has (at least) two different meanings. Explain the different meanings.

2. [1 point] Explain the logical fallacy in the following reasoning (which is known as Politician’s Syllogism).

   i. Something must be done.
   ii. This plan is something.
   iii. Therefore, this plan must be done.

3. Find a peer-reviewed research paper, published no longer than 5 years ago, that uses or builds upon one of the classical questions of logic. Upload a PDF copy of the paper you chose to STicS.

   (a) [1 point - Bonus] State the authors, title, and place of publication of the paper you choose. Explain how you found the paper, and which of the classical questions it refers to.

   (b) [3 points - Bonus] Briefly summarize in your own words how the paper builds upon the classical question.