

## Can Computers Think?

### Week 2 Homework

#### Due Thursday January 17

1. Read “Can Machines Think?” by Daniel Dennett and “Minds, Brains, and Programs” by Frances Searle. You can download the articles from the course website at <http://antipasto.union.edu/~striegnk/courses/cancomputersthink>. What are Dennett's and Searle's positions with respect to the Turing Test? What are their positions with respect to the question whether computers can or will ever be able to think?

For each article, prepare two questions and bring them to class on Thursday.

#### Due Tuesday January 22

2. Imagine you wanted to write a program that allows a human user to play tic-tac-toe against the computer. Come up with a list of subproblems such a program would have to deal with. Then, based on this list of subproblems, specify what functions you would need. Choose a name, say how many and what kinds of parameters they would expect, and what their return value would be. You don't have to specify the algorithms for the functions, just describe what their purpose would be.
3. After having read and discussed the papers by Turing, Searle and Dennett, what's your view on the Turing test? Is it a good test for determining whether a machine is intelligent/can think or not? Why or why not? Write a short paper explaining your position. (I don't expect you to write more than half a page to a page.)
4. The debate surrounding the Turing test and whether or not computers can think, is actually *much* larger than the three papers that we have read. *Mapping Great Debates* (<http://www.macrovu.com/CCTGeneralInfo.html>) is a project that presents the history of this debate in the form of maps. Starting with Turing, these maps show the different positions in this debate and how they relate to each other. You can access online renditions of these maps by clicking on the pictures of the maps at <http://www.macrovu.com/CCTGeneralInfo.html>, or you can go to Olin 110 if you prefer to look at hardcopies of the maps. They are hanging on the walls in Olin 110; you should be able to access the room using your Union ID card. Have a look at the maps and pick one aspect of the debate that you find interesting and that we haven't really talked about much in class. Explain why you agree or disagree with the positions presented in this branch of the debate. Again don't write more than half a page to a page.
5. And for some programming practice: Zelle, p. 229, no. 5 and 7.

## CodeLab

Do the second batch of CodeLab exercises by Thursday January 24th. There are quite a lot of CodeLab exercises for this week. Get started early, so that you have enough time to do them all.

## Reading

**Zelle Chapters 6 and 7.** In Chapter 6, you can skip page 179 until the end of subsection 6.5.1 and page 165 until the end of subsection 6.5.2. There are some other places in this chapter where Zelle refers to the material on graphical output which he talks about in Chapter 5. Don't worry if you don't understand all of the code that he is discussing – you can understand the important points by skipping those pieces of code and just reading the text. In Chapter 7, you can skip subsection 7.4.

See the web site for further material.