GP - GEB Problem Set: Recurion, RTNs, and More!

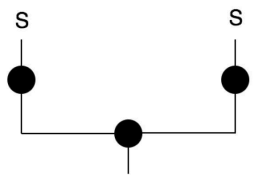
What's It All About?

This is a problem set that is based primarily on Chapter 5 of Hofstadter's GEB. Just a bit of Chapter 7 comes into play, as well.

Task

Craft a nicely formatted document consisting of both the questions that you see below, and, immediately following each question, your answer to the question. Please format your work on this problem set in just the same way that you were asked to format the Post production system problem sets. And, as always, please save your document as a **pdf** file.

1. Hofstadter writes about recursion in a very informal way in the first three sections of Chapter 5. Please write down five easily articulable ideas about recursion that he expresses in those sections of this chapter, ideas that resonate with you in a meaningful way.
2. In a paragraph or two, without providing any explicit examples, describe "recursive transition networks". Please say something about (1) what they are used for, (2) what elements they are composed of, and (3) their relationship to context free grammars.
3. Faithfully mimicking Hofstadter's representation of RTNs, draw a **set of recursive transition networks** which defines the "English Like Language" that was featured in the CFG/CFG assignment. That is, draw a set of recursive transitions that correspond in a faithful manner to the CFG provided for the "English Like Language".
4. Please read the first page and a half of Chapter 7 "The Propositional Calculus". Draw a **set of recursive transition networks** for **Hofstadter's particular variant** of WFFs, as presented in the first page and a half of Chapter 7.
5. Consider Diagram S shown below, which I constructed in the spirit of Diagram G and Diagram H that Hofstadter presented in the chapter.



Please:

   (a) Draw Diagram S yourself.

   (b) Draw Diagram S, once expanded.

   (c) Draw Diagram S, twice expanded.

Further Instructions

As previously mentioned, please save your document as a **pdf** file. Only files in the **pdf** format will be accepted. Then, please respond to my email soliciting your work with respect to this assignment, just one time, being sure to attach your **pdf** file. **Please note: This is not an email for you to respond to with questions or comments. Just the pdf file containing your work with respect to this assignment.**

Due date

Friday, April 1, 2022. Any time of the day will do.