CS200 - Programming Assignment 1

Please read the sections of the syllabus on programming assignments and honor code before starting this homework. I would also recommend reading the rubric for programming grading, so that you know how we will be grading this assignment.

Write a program in python or java that takes as input a list of strings that contain logical predicates. The predicates should be formed from variables that are denoted using capital letters, and the operators 'and', 'or', and 'not', as well as parentheses. Your program should output a list of assignments of the variables such that all predicates in the input list are true.

In other words, your program should act like a deduction or proof machine, that proves new true statements, given a set of existing true statements. For example, in the example given below, we can deduce that if all of the input predicates are true, then A is True and D is false.

You may use any functions or packages that you find useful (for example, in python `eval` and `itertools` are especially helpful) but you may not use code that implements the solution.

Here is a sample output:

```
>>> deduce(["(A and C) or not D","(B or C) and (D or  A)",...
"(not C and B) or (not D and not B)"])

A C D B
--------
T T F F
T F F T
```

Put a multi-line comment at the beginning of your program. It should contain:

- Your name
- "Programming Assignment 1"
- The name of anyone you worked with
- Sample output from your program
- The amount of time (approximately) that you spent on this assignment