Assignment 1: Using ImpCore
CS - 456 – Programming Languages

September 3, 2014

General Information

- Due Date: 09/10/2014 by midnight.

- Submission: An assignment will be created on BlackBoard. Multiple submissions are possible before the deadline. Only the last one will be considered.

- Assignments are *individual*.

- Use Piazza for Q&A.

Assignment

- Solve **exercises 3 to 8 from Chapter 2** of Ramsey's book (pg. 54).

- You are **not allowed to use while** loops. While loops will be disabled when evaluating your assignment. You *must use recursion* instead.

- You are **not allowed to use global variables**. Global variables will be disabled for evaluation.

- You are allowed to define auxiliary functions.

General Evaluation Criteria

- Code Functionality: 50%

- Code clarity: Documentation, Form, Naming and Structure 50%.
  - Documentation: Document your code. For each function, and data structure with non-obvious behavior explain the intended behavior and the way it is carried out.

- Form: Indent and structure your code to make it readable and easy to fix/inspect.

- Naming: Give sensible names to variables and functions that relate to their functionality (except if their meaning is absolutely obvious from the context).

- Structure: The structure of your code text should reveal the structure of the program.

- Test your code. Test cases will not be provided. The functionality of your code will largely be evaluated through test cases.

Submission

- Put the solutions to all the exercises *in order* in a single file with the format {your lastname}-hw1.imp. Precede each solution with a comment indicating to which exercise it corresponds.

- Only the declarations need to be added to the solutions file. You can submit your test cases in a separate file with the format {your lastname}-hw1-test.imp. This file is not a requirement.

- You can optionally submit a README file with format {your lastname}-README-hw1 if you think it is necessary.

- If you submit multiple files bundle them in a directory with the formal {your lastname}-hw1.

- It is your responsibility to check the integrity of the uploaded files. If your submission is corrupted it will be considered as not submitted.

- Your submission must be *valid impcore* code. You must be able to execute `$./impcore -q < solution.imp > /dev/null` without producing any errors.

Some Useful Commands

- You might find `rlwrap` useful to work with the impcore REPL.

- You can run the contents of a file using `./impcore < file.imp`. You can avoid the prompts running `./impcore -q < file.imp`.

- You can put your tests in a file other than your solution, and then run them by calling `cat file.imp mytests | ./impcore -q`.

- You can put the solutions to different exercises in different files, and then create a single submission file with `cat ex1.imp ex2.imp ex3.imp > lastname-hwX.imp`.