Assignment 0

CSI 4336

Due August 28, 2018

Preparing the written portion in LaTeX

For this assignment, and every other written assignment in this class, you will use LaTeX to prepare the written portion of the assignment you turn in. Therefore, you should download a LaTeX environment (if necessary) and get used to using it. This assignment will help in that. See the course website for pointers about LaTeX.

Submitting your assignment

All written portions of the assignment should be prepared in LaTeX.

Submit this assignment by the due date in two ways: by email (before class) and printed (at the beginning of class). Don't put any code in the printed copy. Proofread your document for style before submitting it.

Send the email to `hamerly@cs.baylor.edu` with the subject "CSI 4336 assignment X" (where X is the assignment number). The email should have one attachment (plain text, .zip, or .tar.gz format) containing:

- the .tex document you wrote named "lastname.tex" (where 'lastname' is your last name),
- a compiled .pdf from the .tex document named "lastname.pdf" (where 'lastname' is your last name),
- any additional files used in your LaTeX document, named "lastname_fig1.pdf" (or similar), and
- all source code used for any programs.

1   Summarize selected parts of chapters 0 and 1 (25 points)

Find each **definition, theorem, lemma, corollary**, and **claim** in chapters 0 and 1, and **write them up in the order given**. There are 23 such statements. Make sure they are labeled clearly so I may identify them, using the labels given in the book (e.g. "Theorem 0.20" is the first label you should use).

Then, choose one proof of a theorem in one of the chapters and replicate it.

Read the output and make sure it looks good. LaTeX is powerful, but it is meant for making *nice-looking* documents – so make sure it looks *nice*. Your document does not need to follow the book's formatting style.

It may help you to look at example LaTeX source. You can download the source for this assignment from `http://cs.baylor.edu/~hamerly/courses/4336_18f/assignments/assignment_00.tex`.

2   Sipser exercises (5 points each, 20 points total)

From the Sipser text, do exercises 0.1, 0.2, 0.5, 0.6.

Note that Sipser's definition of 'range' is what we defined in class as 'codomain'. When he asks for the 'range' for question 0.6, use our definition (i.e. the 'image' of the function).

3   Working with sets (20 points)

If you do not already have a Kattis account, create one at `https://baylor.kattis.com/` using your Baylor email address (so that I can identify you). If you already have a Kattis account, you may use that.

After you have a Kattis account, register for the *current semester* course offering at `https://baylor.kattis.com/courses/CSI4336`. Dr. Hamerly will give out the course registration password in class.

Finally, do the problem 'Set operations', listed under the first problem group. This means to submit to Kattis a version which passes all the tests. You do not need to submit your code in your printed homework. Your work for this problem should be in C, C++, or Java, and you should construct the set operations yourself rather than rely on existing library functions.