CISC 462 Assignment 3 Postmortem

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   This question was done quite well. Students came up with some interesting variations on matches!
   A few students mistakenly thought of dominoes as fractions, and tried to perform mathematical operations such as simplifying the strings (e.g., “reducing” \([\frac{\text{aa}}{\text{aab}}]\) to \([\frac{1}{b}]\)). This isn’t how the Post Correspondence Problem works. You cannot modify the given dominoes to find a match.

2. Parts (a) and (c): 4 marks. Part (b): 2 marks.
   Some students thought part (a) was true. This is not the case, since we can reduce a string of the form \(a^n b^n\) to a string of the form \(a^* b^*\), and strings of the first form are nonregular.
   Parts (b) and (c) were done well.

3. 1 mark per part.
   Most students got all 10 parts of this question correct, which made marking easy.
   I saw a few troubling mistakes with asymptotic notation. It’s important to be very comfortable with how this notation works; you’ve had at least two years of working with it thus far!

4. 3 marks for union and complement proofs. 4 marks for concatenation proof.
   This question was done quite well. The only common issue was a lack of detail in the proofs.
   Some students confused concatenation with the set intersection operation.

5. 1 mark per table entry.
   This question, much like question 3, was easy to mark because most students got all table entries correct.
   Minor mistakes were usually caused by misreading the given string \(w\).

6. 10 marks total. −5 marks if answer was incorrect.
   Many students answered this question incorrectly. \(B\) is actually decidable! The solutions contain the proof of decidability, so I omit it here.
   If you incorrectly answered this question, I only deducted half marks. I also strongly encourage you to review the proof in the solutions.

Questions/comments? Feel free to stop by my office hours or send me an email at tsmith [at] cs [dot] queensu [dot] ca.