# Assignments

Due to：19th (Wed.) December, 2018

Use A4 sheets and drop your sheets into the "Report Box" in Building No.8

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Let the alphabet $\Sigma = \{a, b\}$.

1. Enumerate all strings which a pattern $x\,ab\,xy$ matches <u>and</u> whose length is equal to 6.

2. Assume the following positive examples and negative examples datasets.

   Positive examples：abaabbab, aaabb, babba

   Negative examples: aabbb, aaa, aaaaab

   (a) Give the longest pattern which matches all of the positive examples, with explaining how you found it. Show that it matches none of the negative examples.

   (b) Enumerate all patterns which matches all of the positive examples <u>and</u> whose length is less than or equal to 3. Draw the Hasse diagram consisting of all of the patterns. Show that every pattern match at least one of the negative examples.

3. Let $S$ be the EFS consisting of the following clauses:

   $$p(a\,x\,b) \leftarrow p(x)$$
   $$p(yz) \leftarrow p(y), p(z)$$
   $$p(ab) \leftarrow$$

   Enumerate all such strings $w$ that $p(w)$ can be proved with $S$ and the length of $w$ is equal to 8.