

## Tutorial 6 for COMP 526 – Applied Algorithmics, Winter 2020

### Problem 1 (Suffix trees and friends)

Consider the text  $T = \text{abbabbaa}\$$ .

What is  $n$  here? (exactly follow the convention from the lecture!)

Construct/Draw the

1. standard (not compacted) trie of all suffixes of  $T$ ,
2. suffix tree of  $T$  (human version) with string labels on edges and leaves,
3. suffix tree of  $T$  (computer version) as it is stored, i.e., offsets in nodes, starting index in leaves, first characters on edges,
4. suffix array  $L[0..n]$  of  $T$ ,
5. the inverse suffix array  $R[0..n]$ , and
6. the LCP array.
7. Annotate the internal nodes in the suffix tree with their string depth. Explain the connection between string depths and the LCP array.
8. Use the above structures to find the longest repeated substring in  $T$ .