# DSC 190 - Discussion 07

**Problem 1.**

Draw a trie representing the following collection of strings:

{"friend", "frog", "frob", "fun", "glob", "glarb", "glow", "guard"}

**Problem 2.**

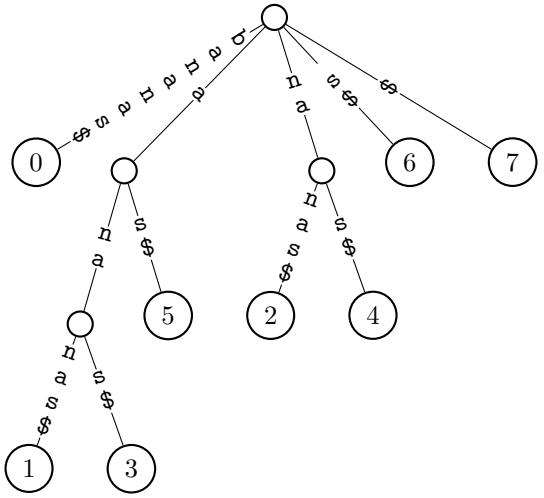
Draw the suffix tree for the following strings:

**a)** "mississippi"

**b)** "aaaa"

**Problem 3.**

Each edge in a suffix tree for $s$ is associated with one or more characters. For instance, the edges in the suffix tree for "bananas" represent the strings "bananas$", "nas$", "na", "a", etc.




**a)** Suppose the suffix tree is implemented by storing the string associated with each edge explicitly in memory. In other words, the string "nas$" will be stored somewhere in memory, "na" will be stored, etc. How much memory is used in the worst case to stored these strings in terms of $|s|$?

Hint: in the worst case, the string $s$ has no repeated characters.

**b)** Describe a way of storing the suffix tree so that only $\Theta(|s|)$ memory is used for storing strings. In other words, how can we know what string is associated with each edge without actually storing that string?