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This exercise is based on the Fredriksson's paper<sup>1</sup> on subset-matching queries.

- 1. List the members of your group below. Underline your name.
- 2. Provide, in your own words, definitions of *string* and *simple string* that are consistent with those used by the paper. Provide illustrative examples.

3. Provide illustrative sample inputs and desired outputs for Problems 1 and 2 defined in the introduction.

 $<sup>^1</sup>$ Kimmo Fredriksson, "On building minimal automaton for subset matching queries," Information Processing Letters 110/24 (2010).

4. Describe how a path-compressed trie may be used to solve Problems 1 and 2. Depict the trie for the problem instances of Question 3. Outline the actions of the algorithms for building the trie and answering the queries.

5. Explain why the algorithm of section 2.2 initializes L'(q) to  $\{0,\ldots,n-1\}$ .

6.	For the instance	of Question 3	, provide a	few	illustrative	examples	of s	states	u :	and	v
	such that $u \equiv_n v$	. Explain you	r answer.								

- 7. Provide concrete examples of states u and v such that
  - (a)  $u \equiv_p v$  and  $\mathcal{L}(u) = \mathcal{L}(v)$ ; (b)  $u \equiv_p v$  and  $\mathcal{L}(u) \neq \mathcal{L}(v)$ .

Explain your answer.