Assignment I (20 pts)

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Assigned : March the 4th, 00h00
Due : March the 13th, 23h55

Q1 (10 pts). Design deterministic finite automaton (DFA) that recognizes the language

$$\mathcal{L} := \{w \mid w \text{ begins and ends with the same letter} \wedge |w| > 1\}$$

defined over the alphabet $\Sigma = \{a, b, c, d, e\}$.

Q2 (6 pts). Design deterministic finite automaton (DFA) that recognizes the language

$$\mathcal{L} := \{w \mid w \text{ contains “}bbba\text{” as substring }\}$$

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

Q3 (4 pts). Design deterministic finite automaton (DFA) that recognizes the set of strings $\{a\}^*$ whose length is divisible by either 3 or 8.

Important Notice:

- Collaboration is strictly and positively prohibited; lowers your score to 0 if detected.
- Any submission after 23h55 on March the 13th will NOT be accepted. Please beware and respect the deadline!
- All handwritten answers should somehow be scanned into a single PDF file, and only then submitted. Make sure that your handwriting is decent and readable.