Assignment 1

Given $\sum = \{0,1\}$:

1. Consider a RE = 1*(0|111*)*1* that represents all strings that do not contain 010
   (Try to figure out why the RE achieves so, this is not for grading)
   1. Using Thompson Algorithm to construct a finite automaton (20 mark)
   2. Converting NFA to DFA if the FA obtained in 1.1 is nondeterministic (20 mark)
   3. Determine whether the DFA obtained in 1.2 is minimized. If not, please minimize the DFA (20 mark)
2. The number of character '0' in each string is a multiple of three (including zero)
   1. Provide the RE with reasoning (10 mark)
   2. Construct the corresponding DFA (30 mark)

Submission

- A single PDF file with any form
  - Student number_name_asg1.pdf (no space), e.g., 123456_张三_ asg1.pdf
  - clear photos and screenshots are acceptable
- Submit your PDF to https://yunbiz.wps.cn/c/collect/cVuFlsg4lzQ by 2024.03.31