Home Work 3

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```
1: procedure NAIVE(On input S[1,..m])
2:     n ← |T|
3:     m ← |S|
4:     for s=0 to n-m do
5:         if P[1,..m] = T[s+1...s+m] then
6:             print("pattern found")
```

Question 1

The string matching problem is defined as: "Given a text $T = T_1...T_n$ which is stored as array $T = T[1, ..., n]$, and a pattern $P = P_1...P_m = P[1...m]$ with $m < n$, where both are strings over the same alphabet Σ ;decide whether S is a substring of T.

Algorithm 1 is the so-called naive-pattern finding algorithm. Use Algorithm 1 to construct a Finite State Automata(deterministic or non-deterministic) for solving the matching problem.

Question 1.4.2

Alice said that any finite union of string of the same length is a string alphabet. Is Alice right?