second Assignment

- We will talk about pattern matching algorithms .

1. Naive algorithm this algorithm compares a given pattern with all substring of the text in case of mismatch make shift by one position until find all pattern in text the time complexity of this algorithm O(mn) .

2. Knuth-Morris-Pratt (KMP) algorithm is proposed in 1977 to speed up the procedure of exact pattern matching by improving the lengths of the shifts . we compares the characters from left to right of pattern . The time complexity of preprocessing phase is O(m) and of searching phase is O(nm).

3. Boyer-Moore Horspool (BMH) did not use the shifting as Boyer-Moore algorithm used . it used only the occurrence to maximize the length of the shifts . time complexity is O(mn) .

4. Quick Search (QS) algorithm perform comparisons from left to right order, it's shifting criteria is by looking at one character right to the pattern and by applying bad character shifting rule . The worst case time complexity of QS is same as Horspool algorithm but it can take more steps in practice.

5. Boyer-Moore Smith (MBS) sometimes maximize the shifts than QS shifts . It uses the bad character shifting rule of BMH and QS bad character rule to shift the pattern . time complexity is O(mn) preprocessing time complexity is $O(m+|\sum|)$.