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## CSCI203 Algorithms and Data Structures

### Assignment 3

### July Session 2019

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### Objectives

- To apply pattern matching algorithm concepts.
- To write the program to represent a Karp-Rabin method

### Problem

You are to implement the Karp-Rabin string search algorithm. Your program will prompt for the name of an input file and then read and process the data contained in this file.

The file contains two sequences of characters. The first is the target sequence, T, the second is the search sequence S. Read both strings and find all occurrences of sequence S in sequence T using the Karp-Rabin algorithm.

For each matched sequence, print the location of the first matched character in T.

For example, if the test data looked like this:

ACGTACGTACCAGTA

AC

The output should be:

0, 4, 8

Notes:

1. The sequence T is no longer than 500 characters
2. The sequence S is no longer than 10 characters

### Submission

Upload **ZIP/RAR** document titled **yourname\_W15\_A3** into the correct submission folder in **Moodle before 11pm** Malaysian time. Late submission will not be accepted.

Your document should contain your source code, screen shots and other necessary files. Show your code and output during lab to receive your marks.

### Marking Criteria

Correctness (4 marks)

Efficiency (2 marks)

Validation (2 marks)

Output presentation (2 marks)