You are required to submit the code, sample data, results, a one page report, and instructions for executing the code to the TA

Write a program to extend the Rabin-Karp method to handle the problem of looking for a given \( m \times m \) pattern in an \( n \times n \) array of characters. (The pattern may be shifted vertically or horizontally, but it may not be rotated). Use another method, for example, a variation of the KMP algorithm or a method from a research paper, or your own method and compare the results with those of the Rabin-Karp extension.

a. Set_1 – \( n = 64, m = 4, 8 \) and 16
b. Set_2 – \( n = 256, m = 4, 16 \), and 64
c. Set_3 – \( n = 1024, m = 4, 16 \), and 64

Please note that your programs will be tested with different data sets as well

Presentation of Results: Measure CPU time, compare results and present using tables or plots.