**Rabin Carp**

#include <bits/stdc++.h>

using namespace std;

vector<int> stringMatch(string &str, string &pat) {

int n = pat.size();

// Prefix array

vector<int> prefix(n, 0);

for (int i = 1; i < n; i++) {

int j = prefix[i - 1];

while (j > 0 && pat[i] != pat[j])

j = prefix[j - 1];

if (pat[i] == pat[j])

j++;

prefix[i] = j;

}

vector<int> matches;

int i = 0, j = 0;

while (i < str.size()) {

if (str[i] == pat[j]) {

i++;

j++;

} else {

if (j != 0)

j = prefix[j - 1];

else

i++;

}

if (j == pat.size()) {

matches.push\_back(i - pat.size());

j = prefix[j - 1];

}

}

return matches;

}