**RABIN KARP ALGORITHM**

String: bbacdbbdbacdeda

n=14

Pattern: acdb

m=4

Using the alphabets with values,

a-1

b-2

c-3

d-4

e-5

Hash function for the following list= 1\*5^3 + 3\*5^2 + 4\*5^1 + 2\*5^0

= 125+75+20+2= 222(hash value)

General function:

(p[1]\*5^(m-1)+p[2]\*5^(m-2)+p[3]\*5^(m-3)+p[4]\*5(m-4))%2^32

#include <bits/stdc++.h>

using namespace std;

int Hash(char str[], int length) {

int h = 0;

for (int i = 0; i < length; i++) {

h = h + pow(65 - str[i], length - 1 - i);

}

return h;

}

void search(char pat[], char txt[]) {

int M = strlen(pat);

int N = strlen(txt);

int p = Hash(pat, M);

int t = Hash(txt, M);

for (int i = 0; i <= N - M; i++) {

if (p == t)

bool match = true;

for (int j = 0; j < M; j++) {

if (txt[i + j] != pat[j]) {

match = false;

break;

}

}

if (match) {

cout << "Pattern found at index " << i << endl;

}

}

if (i < N - M) {

t = t - pow(65 - txt[i], M - 1);

t = t \* (1 / pow(65 - txt[i], 1));

t = t + pow(65 - txt[i + M], 0);

}

}

}

int main() {

char txt[] = "An apple a day keeps the doctor away";

char pat[] = "doctor";

search(pat, txt);

return 0;

}

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