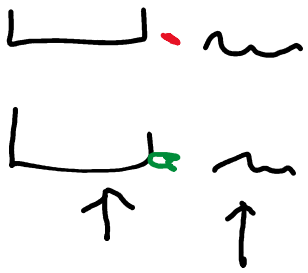
K16 - haszowanie

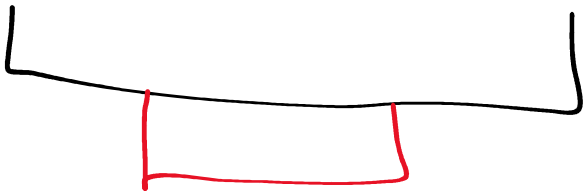
14 March 2025 18:41

$h(str) = int$



$s_0 + s_1 x + s_2 x^2 + \dots$

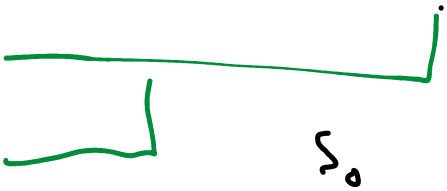
$h(z) = h(ac)$



$h(bc) = bx + c$

$h(bcagb) = bx^4 + cx^3 + ax^2 + gx + b$

$h(bcagb) - h(bc) \cdot x^3 = h(agb)$



$s_0 \quad x$

$s_0 x^3 + s_1 x^2 + s_2 x + s_3$

$(s_0 x + s_1) x^2 = s_0 x^3 + s_1 x^2$

```
LL SubstringHash(int a, int b) {
        return sufHash[a]-sufHash[b+1]*pwr27[b+1-a];
}
```

$MOD \cdot MOD < 2^{63}$

$MOD < 2^{31}$

```
LL calcHash(string s) {
    LL hash = 0;
```

```
    LL hash = 0;

    for(char I : s) {
        hash *= BASE;
        hash += I-'a'+1;
        hash %= MOD;
    }

    return hash;
}
```

$x \cdot MOD < 2^{63}$ $\varphi(MOD-1)$

10^{-x}

$x^a \equiv 1^b \quad a, b < n$

$(s_0 x + s_1) x + s_2$ ..... $b_i^a \ldots c_k^b \ldots$ . .... $c_i^a \ldots b_k^b \ldots$

$(s_0 x^2 + s_1 x + s_2) x + s_3$

$10^9 + 7$ faktor x

$109 + 6969$

```
dp[0] = true
for(int i=0 i<t.size() i++)
    if(dp[i])
        for(j=0 j<w.size() j++)
            if(subs(i, i+w[j].size()) == h[w[j]]
                dp[i+w[j].size()] = true
```

```
dp[0] = true;
for (int i = 0; i <= len; i++)
        if (dp[i]) {
                for (int j = 0; j < n; j++)
                        if ((i+words[j].second-1 <= len-1) && (SubstringHash(i, i+words[j].second-1) == words[j].first))
                                dp[i+words[j].second] = true;
        }

if (dp[len])
        printf("TAK\n");
else
        printf("NIE\n");
```

---

vector<int> perm(n)

iota(perm.beg(), perm.end(), 1)

do {

:

.

.

.

} while (next_permutation(perm.beg....

```
do {
    string w2 = w;

    for(int i = 0;i < w.length();++i) {
        w2[i] = w[per[i]];
    }
    cout << w2 << endl;

    LL wHash = calcHash(w2);
    for(int i = 0;i <= s.length()-w.length();++i)
        if(wHash == sHash[i])
            res++;

} while(next_permutation(per.begin(), per.end()));
```

m[h]+=1

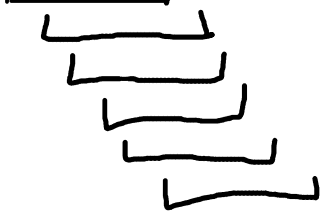
2

res+=m[wh]

ala

ma

alamaalama



$\sum_i v_i \cdot size_i = const$

$h(ala)x^2 + h(ma)$
$h(ma)x^3 + h(ala)$

$$\frac{n}{p} = \frac{10^5}{109} = \frac{1}{10^4}$$

$$\frac{n}{p_1} \cdot \frac{n}{p_2} = \frac{1}{10^8}$$

---

a b c d g
a b c d f

---

ala
ma

alamaalama

3

alama
maala