Full Solution: $N \leq 20$

Do dynamic programming on subsets. The DP state for a subset $S = \{c_1, c_2, \ldots, c_n\}$ of the cowphabet is $\min_p (\text{evaluate}(p))$ over all $n!$ permutations p of S. The DP transition for all nonempty S is as follows:

$$\text{dp}[S] = \min_{c_j \in S} \left(\text{dp}[S \setminus \{c_j\}] + \sum_{c_k \in S} (\#\text{ occurrences of } c_j c_k) \right)$$

\	补集	$A \setminus B$表示所有属于A但不属于B的元素的集合。	$\{1,2,3,4\} \setminus \{3,4,5,6\} = \{1,2\}$
	减；除去		
∁	集合论	（有的地方记作$\complement_A B$）	$\complement_U A = \{x \mid x \in U \text{ and } x \notin A\}$

0	1	2	3	4	5	6	7	8	9
m	i	l	d	r	e	d	r	e	e

```
occ[m->m] -> occ[m][m]  occ[20][20]
```

```
occ[m->m]=0   occ[d->m]=0
occ[m->i]=1   occ[d->r]=2
occ[m->l]=0   occ[d->e]=0
...           ...
```

0	1	2	3	4	5	6	7	8
m	i	l	d	r	e			

```
dp[m]      =dp[000001]
dp[mi]     =dp[000011]
...
dp[me]     =dp[100001]
...
dp[dre]    =dp[111000]
...
dp[mil]    =dp[000111]
...
dp[mildre]=dp[111111]
```

dp[0]=1表示不做任何组合的时候答案是1

2^5

ans

```
dp[m]=dp[0]+occ[m->m]

dp[i]=dp[0]+occ[i->i]

dp[mi]=min { dp[i]+(occ[m->m]+occ[m->i])
           { dp[m]+(occ[i->m]+occ[i->i])

...
```

缺少**m**的集合

m的所有情况

```
ans=dp[mildre]
   =min { dp[ildre]+(occ[m->m]+occ[m->i]+occ[m->l]+occ[m->d]+occ[m->r]+occ[m->e])
        { dp[mldre]+(occ[i->m]+occ[i->i]+occ[i->l]+occ[i->d]+occ[i->r]+occ[i->e])
        { dp[milre]+(occ[d->m]+occ[d->i]+occ[d->l]+occ[d->d]+occ[d->r]+occ[d->e])
        { dp[milde]+(occ[r->m]+occ[r->i]+occ[r->l]+occ[r->d]+occ[r->r]+occ[r->e])
        { dp[mildr]+(occ[e->m]+occ[e->i]+occ[e->l]+occ[e->d]+occ[e->r]+occ[e->e])
```

缺少**e**的集合

e的所有情况