

# 2016 Multi-University Training Contest 2

## 比赛情况

题号	A	B	C	D	E	F	G	H	I	J	K	L	M
状态	0	-	-	-	0	0	-	-	0	-	0	∅	-

0 在比赛中通过 ∅ 赛后通过! 尝试了但是失败了- 没有尝试

### 比赛时间

2020-05-27 13:00-18:00

### 提交记录

K: Accepted 2020-05-27 13:33:18

I: Accepted 2020-05-27 13:41:58

L: Time Limit Exceeded 2020-05-27 15:09:42

F: Wrong Answer 2020-05-27 15:56:01

F: Accepted 2020-05-27 16:24:15

E: Accepted 2020-05-27 17:30:56 (这个E写不过来了)

## 题解

### K-Keep on Movin

有  $n$  种字符，每种字符有  $a_i$  个，用所有字符组成多个回文串，问最短的回文串的最大值。

贪心的构造尽量少的回文串然后让长度尽可能平均，容易发现最少的回文串的个数等于个数为奇数的字符数，然后尽可能平均分配每个回文串即可。

```
#include<bits/stdc++.h>
#define ll long long
#define pii_ pair<int,int>
#define mp_ make_pair
#define pb push_back
#define fi first
#define se second
#define rep(i,a,b) for(int i=(a);i<=(b);i++)
#define show1(a) cout<<#a<<" = "<<a<<endl
#define show2(a,b) cout<<#a<<" = "<<a<<" "; cout<<#b<<" = "<<b<<endl
using namespace std;
const ll INF = 1LL<<60;
```

```
const int inf = 1<<30;
const int maxn = 2e5+5;
inline void fastio() {ios::sync_with_stdio(false);cin.tie(0);cout.tie(0);}
int n,a[maxn];
int main()
{
    fastio();
    int _;
    for(cin>>_;;_--){
        cin>>n;
        rep(i,1,n) cin>>a[i];
        int cnt = 0;
        ll sum = 0,tot = 0;
        rep(i,1,n){
            if(a[i]&1) cnt++;
            sum += (ll)a[i]/2;
            tot += a[i];
        }
        if(cnt<=1){
            cout<<tot<<endl;
            continue;
        }
        ll ans = 1 + (sum/cnt)*2LL;
        cout<<ans<<endl;
    }
    return 0;
}
```

## L-La Vie en rose

给两个长度分别为  $n$  和  $m$  的串  $s, p$  问对于  $1 \leq i \leq n, 1 \leq j \leq m$  在经过某种变换之后是否能完全匹配  $s_i s_{i+1} \dots s_{i+m-1}$  这种变换定义为，任选  $1, 2, \dots, m$  中  $k$  个不相邻的下标  $i_k$  交换  $p_{i_k}$  和  $p_{i_k+1}$

本来暴力  $nm=5e8$  可以过的，好像这个赛后加强了数据，得用 `bitset` 优化一下才能过。

```
#include<bits/stdc++.h>
#define ll long long
#define pii_ pair<int,int>
#define mp_ make_pair
#define pb push_back
#define fi first
#define se second
#define rep(i,a,b) for(int i=(a);i<=(b);i++)
#define show1(a) cout<<#a<<" = "<<a<<endl
#define show2(a,b) cout<<#a<<" = "<<a<<" "; cout<<#b<<" = "<<b<<endl
using namespace std;
const ll INF = 1LL<<60;
```

```

const int inf = 1<<30;
const int maxn = 1e5+5;
inline void fastio() {ios::sync_with_stdio(false);cin.tie(0);cout.tie(0);}

bitset<maxn> dp[2][3],f[30];
char s[maxn],p[5005];
int n,m;

int main()
{
    fastio();
    int _;
    for(cin>>_;;_--){
        cin>>n>>m;
        cin>>s>>p;
        rep(i,0,26) f[i].reset();
        rep(i,0,2) dp[0][i].reset(),dp[1][i].reset();
        rep(i,0,n-1) f[s[i]-'a'][i] = 1;
        dp[0][1] = f[p[0]-'a'];
        if(m>1) dp[0][2] = f[p[1]-'a'];
        int now = 0;
        rep(i,1,m-1){
            now ^= 1;
            dp[now][0] = (dp[now^1][2]<<1) & f[p[i-1]-'a'];
            dp[now][1] = ((dp[now^1][1] | dp[now^1][0])<<1) & f[p[i]-'a'];
            if(i<m-1) dp[now][2] = ((dp[now^1][0] | dp[now^1][1])<<1) &
f[p[i+1]-'a'];
        }
        rep(i,0,n-1){
            if(dp[now][0][i+m-1] || dp[now][1][i+m-1]) cout<<1;
            else cout<<0;
        }
        cout<<endl;
    }
    return 0;
}

```

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