#include <stdio.h>

#define Min(a, b) ((a)<(b)?(a):(b))

#define Max(a, b) ((a)>(b)?(a):(b))

int t[1000010];

int main()

{

char ch;

int n, m, p, q, c, d, k, l, i;

scanf("%d%d", &n, &m);

getchar();

t[0] = 1;

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

t[i] = (t[i-1]<<1)%m;

p = q = c = d = 0;

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

{

ch = getchar();

c++;

if (ch == 'P')

{

k = Min(p, c);

l = Max(q, c);

if (l-k == 2)

if (c == k || c == l)

d = (d+t[(n-i)>>1])%m;

else

d = (d+t[(n-i+1)>>1])%m;

if (l-k == 1)

d = (d+t[(n-i)>>1]+t[(n-i+1)>>1]-1+m)%m;

c -= 2;

}

p = Min(p, c);

q = Max(q, c);

}

printf("%d\n", (d+1)%m);

return 0;

}