设a [ k ] [ i ] 代表长度为k时第k位是 i 的序列种数，那么 a [ k ] [ i ] = ∑ a [ k-1 ] [ j -1 ] ( j <= i )

边界条件：a[ 1 ] [ i ]＝１

最后将所有的 a[ N ] [ i ] 相加则是总和。时间复杂度是 O ( N × M2 )

参考程序如下所示：

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29 | //选数统计  #include<iostream>  #include <stdlib.h>  using namespace std;  int T,k,i,j,t,N,M,p;  long long a[11][2001],ans;  int main()  {  freopen("ChoiceNum.in","r",stdin);  freopen("ChoiceNum.out","w",stdout);  scanf("%d%d",&N,&M);  memset(a,0,sizeof(a));  for (i=1;i<=M;i++)  a[1][i]=1;  p=1;  for (k=2;k<=N;k++)  {  for (i=p\*2;i<=M;i++)  for (j=p;j<=i/2;j++)  a[k][i]+=a[k-1][j];  p\*=2;  }  ans=0;  for (i=p;i<=M;i++)  ans+=a[N][i];  printf("%I64d\n",ans);  return 0;  } |