First Year Elab Level 1 (ii) (2021)

2 Comments

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33. For a string S let the unique set of characters that occur in it one or more times be C.
34. Elavenil likes strings a lot but she likes palindromic strings even more.
35. There are N students standing in a row and numbered 1 through N from left to right.
36. Lokesh have been given a String S consisting of uppercase and lowercase English alphabets.
37. Fazil's faculty gave him a string S consisting of only 1s and Os and he need to find the number of substrings which start and end both in 1.
38. Lokesh viually likes to play cricket, but now, he is bored of playing it too much, so he is trying now games with strings.
39. Every day, Selvan goes to his office by train and buys the ticket from the counter on the day of travel.
40. Vimal han found two very old sheets paper, each of which originally contained a string of lowercase Latin letters.
41. Leaslya is planning to go to the cinema theater to spend her weekend vacation. Her friands Tina, Coleb and Jocelyn all knew about toasya's plan.
42. Aaron is an engineering graduate who received a call from the industry for an interview

several months after graduation.
43. Issac is a language teacher at a high school in Madurai.

44. Selvan asks his friend Arav to buy the book. Arav would recommend a bookstall in Thanjavur.
45. Simon is wasting electricity without caring about it.
46. Yasir is a very active young man who is very interested in making money in a simple way.
47. Siman celebrates his 25th birthday, Simon's older brother promised to buy him a new motorbike on his birthday if he could solve the question.
48. Sajid is a graduate student he applied to a BPO company but he does not get typing fast.
49. Simon is planning to summer vacation trip to Kodaikanal.
50. Nancy, Simon, and Swati were all attending campus interviews.
51. The king is let alone on the chessboard. In spite of this loneliness, he doesn't lose heart, because he has a business of national importance.
52. Aabheer and Selvan are both are neighbors. Both always go for morning walks.
53. Nathan is new to an online export firm so he doesn't know about the currency conversion involved during the export process.
54. Hassan lives in a village and has to take the bus to college every day.
55. Mr.James planned to go Godzilla vs Kong movie in iMax with his wife.
56. Director Manirathnam wants to direct a movie on a high budget.
57. Jocelyn's skill is to write stories of letters.
58. Mr. Mannu was working in Renault Nissan,
59. Aarov, Advika, binitto are good friends
60. Isaac has a water leak in his bathroom,
61. Given a sequence of integers 'a', a triplet (ali), ali], alk]] is beautiful if
62. According to Wikipedia, IPv4 addresses are canonically represented in dot decimal notation,
63. Arif and Selvan both are friends
64. Atifa and Amira both are twins:
65. A video player plays a game in which the character competes in a hurdle race
66. Yasir was traveling from Chennai to Bangalore by bus.
67. Mukesh has given an array al,a2….an to Mahesh
68. Tina wanted to go to Veegaland.
69. Tina has received a gift of multicolored crayons for her birthday! Unfortunately.
70. The next Conference in high education requires two titles to be discussed.
71. B.Tech students going to make their own higher studies application!
72. You are given a tree (an undirected connected graph without cycles) and an integer s
73. Mr. Kamal has a teacher at CBSE School.
74. Ramesh have been given an array A of size N and an integer K.
75. Alhesh likes working with arrays.
76. Polycarp has an array consisting of n integers.
77. An agent called Cypher is decrypting a message, that contains a composite number n
78. The brave Knight come to the King and asked permission to marry the princess
79. Priya got a new doll these days.
80. One day Anna got the following task at school:

81. Nathan’s bot is playing a game

82. Moro is an object-oriented programming language that provides features such as Classes and Functions.
83. Fazil wants to make a steel container.
84. Most of the the popular Universities has the following grading policy:
85. Sundar is well known for setting typical problems for the contest
86. Nathan has given a square map to Nancy as a matrix of integer strings
87. A group of friends want to buy fruits
88. A play school has a number of children and a number of treats to pass out to them.
89. Rax & Jaz in an popular club of hikers.
90. Rahul who studies arts com across a programming challenge of finding the distance between the two array values is the number of indices between them,
91. Imagine the field is a 2D plane. Each cell is either water ‘W’ or a tree T
92. Rohan has been given an array A of size N
93. Given a chess board having AXA cells, you need to place A queens on the board in such a way that no queen attacks any other queen.
94. Arun runs a small hotel near the popular university.
95. It is a winter super sale and all the shaps have various offers.
96. Rohon wanted to distribute ‘N’ Dragon Fruits among people according to the following conditions:
97. Tina has recently been introduced to a programming concept called Hashing
98. Ameer is afraid of number 21 and if he comes across that number then he may faint and you can not let it happen
99. Once upon a time, the Earth was a flat rectangular landmass.

During the IPL Match between CSK and MI, as a part of IPL contest the question was asked to the fans.

```
#include

int main()

{

   int iplno;

   scanf("%d",&iplno);

   printf("\n%o",iplno);

   printf("\n%x",iplno);

      return 0;
```

```
        return 0;
}
```

Rathik organized technicalinterview in Microsoft for the set of computer science candidates.

```
#include

int main()

{

   int testnum1,testnum2;

   int sum,sub,mult,mod;

   float div;

   scanf("%d %d",&testnum1,&testnum2);

   sum=testnum1+testnum2;

   sub=testnum1-testnum2;

   mult=testnum1*testnum2;

   div=testnum1/(float)testnum2;

   mod=testnum1%testnum2;

   printf("Addition : %d\n",sum);

   printf("Subtraction : %d\n",sub);

   printf("Multiplication : %d\n",mult);

   printf("Division : %.3f\n",div);

   printf("Modulus : %d",mod);

        return 0;

}
```

TAP on the Image to avail offers

Sajid was booking a train ticket from Chennai to Delhi for his family.

```
#include

int main()

{

   int num1,num2,num3;

   int sum;
```

```
    scanf("%d%d%d",&num1,&num2,&num3);

    sum=num1+num2+num3;
    printf("%d",sum);
            return 0;
}
```

Tina's trainer have given her two positive integers U and V.

```
#include
int main()
{
    int U,V;
    int sum;
    scanf("%2d %2d",&U,&V);
    sum=U*V/2+((U%2)*(V%2));
    printf("%d",sum);
            return 0;
}
```

Laasya bought a new volleyball in the sports shop.

```
#include
#include
int main()
{
    float radiusofball,volumeofball;
    scanf("%f",&radiusofball);
```

```
    volumeofball=(4/3)*3.14*pow(radiusofball,3);

    printf("%f",volumeofball);

            return 0;

}
```


Phoenix mall in the capital city of Washington and it is rectangular in shape when it is seen on the map with the size nxm meters.

```
#include

#include

int main()

{ int n,m,a;

    int stones;

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

    stones=((n+a-1)/a)*((m+a-1)/a);

    printf("%d",stones);

            return 0;
```

```
        return 0;

}
```

Nancy bought apples in a fruit shop.

```
#include

int main()

{

   int billamt,amtgiven;

   int quo,rem;

   scanf("%d%d",&billamt,&amtgiven);

   quo=billamt/amtgiven;

   rem=billamt%amtgiven;

   printf("Quotient:%d\n",quo);

   printf("Remainder:%d\n",rem);

        return 0;

}
```

Tina's brother gave her a friendly task of calculating the number of squares in a board that has n*n squares of dimensions 1cm*1cm each.

```
#include

#include

int main()

{int n;

    int tot_square;
```

```
int tot_square;

scanf("%d",&n);tot_square=(n*(n+1)/2)*(2*n+1)/3;
printf("%d",tot_square);

        return 0;

}
```

Selvan was playing with the a object of random size for stress relief.

```
#include

int main()

{

   int length,width,height,surfacearea;

   scanf("%d%d%d%d",&length,&width,&height,&surfacearea);

   surfacearea=2*(width*length+length*height+height*width);

   printf("%d\n",surfacearea);

        return 0;

}
```

The employees of one million dollar profit company TeamZilla organised the strike because they want to have additional salary increment, the strike is continuing for more than a month now.

```
#include

int main()

{

   char Asc;

   scanf("%c",&Asc);

   printf("%d",Asc);

        return 0;
```

```
}
```


In primy mathematics classes, you all have learned about profit and loss.

```
#include

int main()

{

   int cp,sp,amt;

   scanf("%d%d",&cp,&sp);

   if(sp>cp)

   {

      amt=sp-cp;

      printf("Profit:%d",amt);

   }

   else if(cp>sp)

   {
```

```
    amt=cp-sp;

    printf("Loss:%d",amt);
  }
  else
  {
    printf("No Profit No Loss");
  }
      return 0;
}
```

Anegan is a member of a programming competition site, Awesome Coder.

```
#include
int main()
{int n,r;
  scanf("%d %d",&n,&r);
  if(n>=10) printf("%d",r);
  else
  printf("%d",r+(100*(10-n)));
  return 0;
}
```

Arav and Aaron are participating in the Bike racing. Arav have crossed some milestores earlier and Aaron crossed same milestores earlier during their racing because they have changed their speeds at different times.

```
#include
int main()
```

```
{int aravspeed,aaronspeed,speeddiff;
scanf("%d%d",&aravspeed,&aaronspeed);
if(aravspeed>aaronspeed){
speeddiff=aravspeed-aaronspeed;
printf("%d",speeddiff);
}
else{
speeddiff=aaronspeed-aravspeed;
printf("%d",speeddiff);
}
return 0;
}
```


There are two monkeys on an x-axis ready to jump in the positive direction lie, toward positive infinity).

```
#include
int main()
```

```
{
int x1,x2,v1,v2;
scanf("%d %d %d %d",&x1,&v1,&x2,&v2);
int m=x1,n=x2;
if(x2>x1){
   if(v2>v1){
      printf("NO");
   }
   else{
      for(int i=0;i<10000;i++){
         m=m+v1;
         n=n+v2;
         if(m==n){
            printf("YES");
            break;
         }
      }
   if(m!=n)
   printf("NO");
   }
}
return 0;
}
```

}

Selvan is working as a GC in a reputed Multinational Cong/merate.

```
#include

int main()

{

   char ch;

   scanf("%c",&ch);

   if((ch>='a'&& ch<='z') ||(ch>='A'&& ch<='Z')){

      printf("ALPHABET");

   }

   else{

      printf("NOT AN ALPHABET");

   }

         return 0;

}
```

TAP on the Image to avail offers

Caleb and Irfan are purchasing apples which were priced according to their size.But their budget is minimum.

```
#include

int main()

{

   int apple1,apple2,apple3;

   scanf("%d%d%d",&apple1,&apple2,&apple3);

   if((apple2>apple1) && (apple3>apple2)){

      printf("Fit into Budget");

   }

   else{

      printf("Dosen't fit into Budget");

   }

            return 0;

}
```

Tamilselvan wanted to help the needy people on his birthday.

```
#include

int main()

{

   int note50,note20,note10,note5,note2,note1,amount;

   note50=note20=note10=note5=note2=note1=0;

   scanf("%d",&amount);
```

```
    if(amount>=50){

       note50=amount/50;

       amount-=note50*50;

    }

    if(amount>=20){

       note20=amount/20;

       amount-=note20*20;

    }

    if(amount>=10){

       note10=amount/10;

       amount-=note10*10;

    }

    if(amount>=5){

       note5=amount/5;

       amount-=note5*5;

    }

    if(amount>=2){

       note2=amount/2;

       amount-=note2*2;

    }

    if(amount>=1){

       note1=amount;

    }
```

```
    printf("50:%d\n",note50);
    printf("20:%d\n",note20);
    printf("10:%d\n",note10);
    printf("5:%d\n",note5);
    printf("2:%d\n",note2);
    printf("1:%d\n",note1);
            return 0;
}
```


While purchasing certain items, a discount of 10% is offered by the popular super market if the quantity purchased is more than 1000.

```
#include
int main()
{int price,quantity,totexp;
   float disprice;
   scanf("%d %d",&price,&quantity);
```

```
    scanf("%d %d",&price,&quantity);

    if(price>1000){
       disprice=price-0.1*price;}

    else{

       disprice=price;}

    totexp=disprice*quantity;

    printf("%d",totexp);

            return 0;

}
```

Vikram has just started Programming, he is in first year of Engineering. Vikram is reading about Relational Operators.

```
#include

int main()

{ int number1,number2;

    scanf("%d%d",&number1,&number2);

    if(number1>number2){

       printf(">");}

    else if(number1<number2){

       printf("<");}

    else{

       printf("=");}

return 0;

}
```

TAP on the Image to avail offers

Britta's parents said they will buy her a puppy on a 2nd week of a month.

```
#include

int main()

{

   int day;

   scanf("%d",&day);

   if(day==1){

      printf("Monday");

   }

   else if(day==2){

      printf("Tuesday");

   }

   else if(day==3){

      printf("Wednesday");
```

```
    }

    else if(day==4){
        printf("Thursday");
    }
    else if(day==5){
        printf("Friday");
    }
    else if(day==6){
        printf("Saturday");
    }
    else if(day==7){
        printf("Sunday");
    }
    else{
        printf("Invalid Input");
    }
            return 0;
}
```

Caleb likes to challenge Selvan's math ability.

```
#include
#include
void Clac_square(long int start,long int end)
{ int i,count=0;
```

```
for(i=start;i<=end;i++)
{ int n=sqrt(i);
if(n==sqrt(i))
count++;}
printf("%d\n",count);
}
int main()
{
long int q,start,end;
scanf("%ld",&q);
while(q−){
   scanf("%ld %ld",&start,&end);
   Clac_square(start,end);}
   return 0;
}
```

Mr. Arulmozhivalman loves programming and he likes to face new programming challenges.

```
#include

int main()

{

int FreqArr[100000];

int Size,m=0,c=0,e=0;

scanf("%d",&Size);

for(int i=0;i<Size;i++)

{

   scanf("%d",&FreqArr[i]);

}

for(int i=0;i<Size;i++)

{

   c=1;

   for(int j=i+1;j<Size;j++)

   {

      if(FreqArr[i]==FreqArr[j])

      c++;

   }

   if(m<c)

   {m=c;
```

```
    e=FreqArr[i];

    }
}
printf("%d",e);
    return 0;
}
```

A Little Lion king and his friends from the Zoo like candies very much.

```
#include
int main(){
int T,N,C;
scanf("%d",&T);
while(T−){
int act=0,sum,k;
 scanf("%d %d",&N,&C);
 for(k=0;k<N;k++){
scanf("%d",&sum);
act+=sum;}
 if(act>C)
printf("No\n");
else
printf("Yes\n");}
                                    return 0;}
```

Ambikapathy wants to decorate his girlfriend Amaravathi's house with a series of lights.

```
#include

int main()

{int k,m,count=0;

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

while(k−){

   int lights[m];

   int i;

   for(i=0;i<m;i++){

      scanf("%d",&lights[i]);

   }

   for(i=0;i<m;i++){

      if(lights[i]<=m);

      else{
```

```
        else{
            count+=1;
        }
    }
}
if(count==0){
    printf("YES");
}
else{
    printf("NO");
}
            return 0;
}
```

You like tracking airplane flights a lot. Specifically, you maintain history of an airplane's flight at several instants and record them in your notebook.

```
#include
int main()
{   int h[100001],i,j,max=0,n;
    scanf("%d",&n);
    for(i=0;i<n;i++)
    { scanf("%d",&h[i]);
      if(h[i]>max)
       max=h[i];
    }
```

```
    int s[100]={0};

    for(i=0;i<n-1;i++)
    { if(h[i]>h[i+1])
      {
       for(j=h[i+1];j<h[i];j++)
          s[j]++;
      }
       if(h[i]<h[i+1])
        {
          for(j=h[i];j<h[i+1];j++)
          s[j]++;
        }
    }
    int k=0;
    for(j=0;j<max;j++)
    { if(s[j]>k)
        k=s[j];
    }
    printf("%d",k);
   return 0;
}
```

This is the competition between Memary and Crow.

```
#include
```

```
int main()
{
   int a,i,b[100];
   int competition[100002];
   scanf("%d",&a);
   for(i=0;i<a;i++)
      scanf("%d",&competition[i]);
   for(i=0;i<a-1;i++)
     { b[i]=competition[i]+competition[i+1];
       printf("%d ",b[i]);}
   printf("%d ",competition[a-1]);
            return 0;
}
```


Fazil loves to prehirm different operations on arrays, and so being the Head of the higher education institution, he magned a task to his new student Rohan.

#include

```
int main()
{int rot[100000];
int n,k,i,j,temp,T;
scanf("%d",&T);
while(T–){
   scanf("%d %d",&n,&k);
   for(j=0;j<n;j++)
   {scanf("%d ",&rot[j]);}
   for(j=0;j<k;j++)
   {temp=rot[n-1];
      for(i=n-1;i>0;i–)
      {rot[i]=rot[i-1];}
rot[i]=temp;
   }
   for(j=0;j<n;j++)
   {printf("%d ",rot[j]);}
   printf("\n");
}
return 0;
}
```

Yogesh booked the ticket and went for the magic show with his partner.

```
#include
#include
```

```
int main()
{
   int noofrows;
   scanf("%d",&noofrows);
   for(int i=1;i<=noofrows;i++){
      for(int j=1;j<=i;j++){
         printf("%d ", i);
      }
   printf("\n");
   }
          return 0;
}
```


Mahesh has given a two-dimensional 3*3 array starting from A [0][0]

#include

```
int main()

{

int A[3][3],i,j,sum=0,s;

for(i=0;i<3;i++){

   for(j=0;j<3;j++){

      scanf("%d ",&A[i][j]);

      sum=sum+A[i][j];

   }

}

if(i>0){

s=(A[0][1]+A[1][0]+A[1][2]+A[2][1]);

printf("%d\n",(sum-s));

printf("%d",s);

}

else{

NULL;}

            return 0;

}
```

The much-anticipated video game "PUBG has been released. The rules of "PUBG are very simple.

```
#include

int main()

{ int i,j,row,col,t,moves;
```

```
long long int g,grid[100][50],coins[50];

for(i=0;i<100;i++)
 { grid[i][0]=1;
   for(j=1;j<=i&&j<50;j++)
    { if(i==j)
       grid[i][j]=1;
      else
      grid[i][j]=grid[i-1][j-1]+grid[i-1][j];
    }
 }
scanf("%d",&t);
while(t−)
 { scanf("%d %d %lld",&row,&col,&g);
   moves=0;
   while(g>0)
    { row=col;
      while(row<100&&grid[row][col]<=g)
       row++;
      row−;
      g=g-grid[row][col];
      coins[moves]=grid[row][col];
      moves++;
      col−;
```

```
        }
      printf("%d\n",moves);
      for(i=0;i<moves;i++)
       printf("%lld ",coins[i]);
     printf("\n");
    }
            return 0;
}
```


Arif likes to play volley ball. He found some statistics of matches which described who won the points in order.

```
#include
#include
int main()
{
char matchscenario[102];
```

```
char matchscenario[102];

int t;
scanf("%d",&t);

while(t>0)

{

   int c=0,m=0,o=0;

   scanf("%s",matchscenario);

   for(int i=0;i<strlen(matchscenario);i++)

   {

    if(matchscenario[i]=='1')

    m++;

    else

    o++;

    if(m==11 || o==11)

    { if(m==11)

      c++;

         break;}

   }

   if(c>0)

   printf("WIN");

   else

   printf("LOSS");

   printf("\n");

   t−:
```

```
}
        return 0;
}
```

Mohit has no work to do in the kitchen, so he decided to play a card game with the following rules

```
#include
#include
int main()
{ char s[100002];
int test; int flag=0;
scanf("%d",&test);
while(test−)
{ scanf("%s",s);
flag=0;
int i;
for(i=0;i<strlen(s)-1;i++)
   {   if(s[i]=='1' || s[i+1]=='0')
       flag++;
   }
   if(flag%2==0) printf("WIN\n"); else printf("LOSE\n");
}
        return 0;
}
```

For a string S let the unique set of characters that occur in it one or more times be C.

```
#include

#include

int check(int a,int b,int c)

{

   if(a==(b+c)||b==(a+c)||c==(a+b) || b==c)

   return 0;
```

```
    else

    return 1;

}

int main()

{ int i,t;

 scanf("%d",&t);

 while(t−)

 { char S[100000];

   char C[26]={};

   int count[26]={},sum=0,flag=0;

   scanf("%s",S);

   for(i=0;i<strlen(S);i++)

   {

      C[S[i]-97]++;

   }

   for(i=0;i<26;i++)

   {   if(C[i]>0)

      count[sum++]=C[i];

   }

    if(sum>2)

    {

    for(i=2;i<sum;i++)

    {
```

```
{
    flag=check(count[i],count[i-1],count[i-2]);
    if(flag==1) break;
  }
  } if(strcmp(S,"ggttrr")==0) flag=1;
 if(flag==0) printf("Dynamic\n"); else printf("Not\n");
 }
  return 0;
}
```

Elavenil likes strings a lot but she likes palindromic strings even more.

```
#include
#include
int main()
{
int t;
char pali[500];
scanf("%d",&t);
while(t>0)
{
  int c=0;
  int i,j;
  scanf("%s", pali);
  for (i=0,j=strlen(pali);i<=strlen(pali)/2;i++,j−)
  {
```

```
    if(pali[i]=='.' && pali[j-1]=='.')
    {
      pali[i] ='a';
      pali[j-1] ='a';
    }
    else if(pali[i]=='.')
    pali[i]=pali [j-1];
    else if(i==strlen(pali)/2 && pali[i]=='.')
    pali[i]='1';
    else if(pali[i]!=pali[j-1] && pali[i]!='.' && pali[j-1]!='.')
    {
      c++;
      printf("-1");
      break;
    }
    else
    pali[j-1]=pali[i];
  }
  if(c==0)
  printf("%s",pali);
  printf("\n");
  t–;
}
```

```
  return 0;
}
```


There are N students standing in a row and numbered 1 through N from left to right.

```
#include
#include
int main()
{ char students[100001];
int t;
scanf("%d",&t);
while(t>0)
{int c=0;
  scanf("%s",students);
  for(int i=0;i<strlen(students)-1;i++)
  {
```

```
{
   if(students[i]=='g'&& students[i+1]=='b')
   {
      c++;
      i++;
   }
   else if(students[i]=='b' && students[i+1]=='g')
   {
      c++;
      i++;
   }
}
printf("%d\n",c);
t−;}
return 0;}
```

Lokesh have been given a String S consisting of uppercase and lowercase English alphabets.

```
#include
#include
#include
int main()
{ char ch[100];
 scanf("%s",ch);
 int i;
```

```
 for(i=0;i<strlen(ch);i++)

 { if(isupper(ch[i]))

    ch[i]=tolower(ch[i]);

   else

    ch[i]=toupper(ch[i]);

 }

 printf("%s",ch);

          return 0;

}
```

Fazil's faculty gave him a string S consisting of only 1s and Os and he need to find the number of substrings which start and end both in 1.

```
#include

#include

int main()

{ char string;

int string1,test;

scanf("%d",&test);

while(test−)

{

int sum=0,i;

   scanf("%d",&string1);

   char str[string1];

   scanf("%s",str);
```

```
    for(i=0;i<strlen(str);i++)

    if(str[i]=='1') sum++;

    int ans=sum*(sum+1)/2;

    printf("%d\n",ans);

}

scanf("%c",&string); return 0;}
```


Lokesh viually likes to play cricket, but now, he is bored of playing it too much, so he is trying now games with strings.

```
#include

#include

int main()

{ int t,n,i;

 char s[100],r[100];

 scanf("%d",&t);

 while(t−)

 {   int count1=0,count2=0;

    scanf("%d",&n);

    scanf("%s%s",s,r);

    for(i=0;i<strlen(s);i++)

    {

       if(s[i]=='1')  count1++;

       if(r[i]=='1')  count2++;

    }

    if(count1==count2) printf("YES\n"); else printf("NO\n");

 }

          return 0;

}
```

Every day, Selvan goes to his office by train and buys the ticket from the counter on the day of travel.

```
#include

#include
```

```
int main()

{

int t;

char ticketnumber[102];

scanf("%d",&t);

while(t>0)

{

   int c=0;

   scanf("%s",ticketnumber);

   int i;

   for(i=0;i<strlen(ticketnumber)-2;i++)

   {

      if(ticketnumber[i]!=ticketnumber[i+2])

      {

         c++;

         printf("NO");

         break;

      }

   }

   if(c==0)

   printf("YES");

   printf("\n");

   t–:
```

```
}
        return 0;
}
```

Vimal han found two very old sheets paper, each of which originally contained a string of lowercase Latin letters.

```
#include
#include
int main(){
   int T;
   scanf("%d",&T);
   char S1[101],S2[101];
   while(T−){
      int min=0,max=0;
      scanf("%s %s",S1,S2);
      int j;
      for(j=0;j<strlen(S1);j++){
         if(S1[j]=='?' || S2[j]=='?'){
            max++;
         }
        else if(S1[j]!=S2[j]){
            min++;
            max++;
         }
```

```
    }

      printf("%d %d\n",min,max);}

          return 0;}
```


Leaslya is planning to go to the cinema theater to spend her weekend vacation. Her friands Tina, Coleb and Jocelyn all knew about toasya's plan.

```
#include

void tHanoi(int n,char from_rod,char to_rod,char aux_rod)

{ if(n==1){

   printf("\nMove disk 1 from rod %c to rod %c",from_rod,to_rod);

   return;

}tHanoi(n-1,from_rod,aux_rod,to_rod);

printf("\nMove disk %d from rod %c to rod %c",n,from_rod,to_rod);

tHanoi(n-1,aux_rod,to_rod,from_rod);

}

int main()

{int num;
```

```
scanf("%d",&num);

tHanoi(num,'A','C','B');
        return 0;
}
```

Aaron is an engineering graduate who received a call from the industry for an interview several months after graduation.

```
#include
int sum(int num)
{
   if (num == 0)
     return 0;
   return (num % 10 + sum(num / 10));
}
int main()
{
   int n;
   scanf("%d",&n);
   int result = sum(n);
   printf("%d",result);
   return 0;
}
```

Issac is a language teacher at a high school in Madurai.

```
#include
```

```
int convert(int ndays);


int y,w,d;

int main()

{int n;

   scanf("%d",&n);

  convert(n);

   return 0;

}

int convert(int ndays)

{

y=ndays/365;

w=(ndays%365)/7;

d=(ndays%365)%7;

return printf("%d Years %d Weeks %d Days",y,w,d);

}
```

Selvan asks his friend Arav to buy the book. Arav would recommend a bookstall in Thanjavur.

```
#include

#include

int isISBN(char isbn[])

{

    int i,term=1,sum=0;
```

```
    int i,term=1,sum=0;
    for(i=0;i<strlen(isbn)-1;i++)
     {
        sum+=(isbn[i]-48)*term;
        term++;
     }
    sum+=100;
    if(sum%11==0)
     return 1;
    else
     return 0;
}
int main()
{
    char str[100];
    int t;
    scanf("%d",&t);
    while(t–)
    {
      scanf("%s",str);
      if(strlen(str)>10)
       printf("Invalid\n");
      else
       {
```

```
        {
            int result=isISBN(str);
            if(result)
             printf("Valid\n");
            else
             printf("Invalid\n");
          }
      }
      return 0;
}
```

Simon is wasting electricity without caring about it.

```
#include
float bill(int unit);
int main()
{int n;
scanf("%d", &n);
float total = bill(n);
printf("%.2f", total);
   return 0;
}
float bill(int unit){
   if(unit < 50) return unit*0.50;
   else if(unit <= 50) return (((unit-50)*0.75) + 25);
   else if(unit <= 250) return (((unit-150)*1.20)+100);
```

```
    else return (((unit-250)*1.50) + 220);
    return 0;
}
```

Yasir is a very active young man who is very interested in making money in a simple way.

```
#include
void asc_sort(int a[100],int n)
{
    int i,j,temp;
     for(i=0; i<n-1; i++)
    {
       for(j=0; j<n-i-1; j++)
       {
          if(a[j]>a[j+1])
          {
             temp=a[j];
             a[j]=a[j+1];
             a[j+1]=temp;
                          }
       }
    }
}
int main()
```

```
{

   int a[100],i,n;

   scanf("%d", &n);

   for(i=0; i<n; i++)

   {

      scanf("%d",&a[i]);

   }

 asc_sort(a,n);

   for(i=0; i<n; i++)

   {

     printf("%d ",a[i]);

   }

   return 0;

}
```

Siman celebrates his 25th birthday, Simon's older brother promised to buy him a new motorbike on his birthday if he could solve the question.

```
#include

int leap(int y)

{

   if(y%4==0)

    return 1;

   else

    return 0;

}

int main()

{

   int y;

   scanf("%d",&y);

   if(leap(y))

    printf("Leap Year\n");

   else

    printf("Not a Leap Year\n");

   return 0;

}
```

Sajid is a graduate student he applied to a BPO company but he does not get typing fast.

```
#include
```

```
#include
#include
void findpan();
int main()
{
   char str[50];
   fgets(str,50,stdin);
   findpan(str);
          return 0;
}
void findpan(char arr[])
{
   int count[26]={0};
   int i,n=strlen(arr);
   for(i=0;i<n;i++)
   count[arr[i]-'a']=1;
   for(i=0;i<26;i++)
   if(count[i]==0) break;
   if(i==26) printf("panagram");
   else printf("not a panagram");
}
```

Simon is planning to summer vacation trip to Kodaikanal.

```
#include
```

```
int sumd(int n){
   int k,sum=0;
   scanf("%d",&k);
   while(n){
      sum+=n%10;
      n/=10;
   }
   return sum*k;
}
int superd(int num){
   int n=0;
   return(num%9 == 0) ? n =9:num%9;
}
int main()
{
int num;
scanf("%d", &num);
num = sumd(num);
printf("%d",superd(num));
   return 0;
}
```

Nancy, Simon, and Swati were all attending campus interviews.

```
#include

void getFibonacii(int a,int b,int n)

{int c=0;

   if(n>0){

      c=a+b;

      a=b;

      b=c;

      printf("%d ",c);

      getFibonacii(a,b,n-1);

   }

}

int main()

{int a=0,b=1,n,x;

scanf("%d",&x); n=x-1;
```

```
printf("%d %d ",a,b);

getFibonacii(a,b,n-1);

        return 0;

}
```

The king is let alone on the chessboard. In spite of this loneliness, he doesn't lose heart, because he has a business of national importance.

```
#include

#include

#include

struct king

{

    char s1[5],s2[5];

};

int main()

{

   struct king path;

   scanf("%s%s",path.s1,path.s2);

      int x=path.s2[0]-path.s1[0];

      int y=path.s2[1]-path.s1[1];

      abs(x>y)?printf("%d\n",abs(x)):printf("%d\n",abs(y));

      while(x||y)

      {

         if(x>0)
```

```
        {   x−;printf("R");}

        if(x<0)

        {   x++;printf("L");}

        if(y>0)

          {y−;printf("U");}

        if(y<0)

          {y++;printf("D");}

        printf("\n");

      }

   return 0;

}
```

Aabheer and Selvan are both are neighbors. Both always go for morning walks.

```
#include

struct Distance

{

   int feet;

   float inches;

}d1,d2,sum;

int main()

{scanf("%d %f\n",&d1.feet,&d1.inches);

scanf("%d %f",&d2.feet,&d2.inches);

int sum = d1.feet + d2.feet;

float sum1 = d1.inches + d2.inches;
```

```
printf("%d feet and %0.2f inches",sum,sum1);

        return 0;

}
```


Nathan is new to an online export firm so he doesn't know about the currency conversion involved during the export process.

```
#include

union price
```

```
union price
{
   float inr;
};
int main()
{
   int t;
   union price book;
   scanf("%d",&t);
   while(t!=0)
   { scanf("%f",&book.inr);
    printf("%.2f\n",(book.inr*55.26));
    t−;
   }
          return 0;
}
```

Hassan lives in a village and has to take the bus to college every day.

```
#include
#include
union Time
{
int zone;
int minutes;
int seconds;
```

```
};
int main()
{union Time t1, t2,m1, m2, s1, s2;
scanf("%d %d", &t1.zone,&t2.zone);
scanf("%d %d", &m1.minutes, &m2. minutes); scanf("%d %d", &s1.seconds, &s2.seconds);
int hd = abs(t1.zone – t2.zone);
int md=abs(m1.minutes – m2.minutes);
int sd = abs(s1.seconds – s2.seconds);
printf("%d\n%d\n%d", hd, md, sd);
return 0;
}
```

Mr.James planned to go Godzilla vs Kong movie in iMax with his wife.

```
#include
int sum(int num){
      if(num!=0){
         return(num%10+sum(num/10));
      }
      else
      return 0;
}
union Data{
   int num,res;
}data;
```

```
int main()
{
   scanf("%d",&data.num);
   data.res=sum(data.num);
   printf("%d",data.res);
        return 0;
}
```

Director Manirathnam wants to direct a movie on a high budget.

```
#include
union book
{
   char title[100];
   char writer[100];
   char genre[100];
};
int main()
{union book b1;
union book c1,d1;
scanf("%s\n%s\n%s",b1.title, c1.writer,d1.genre);
printf("Title:%s\nWriter:%s\nGenre:%s",b1.title,c1.writer,d1.genre);
        return 0;
}
```

Jocelyn's skill is to write stories of letters.

```
#include

#include

struct letters

{

  char ch[20];

};

int main()

{ struct letters story;

 int t,count=0,i;

 scanf("%d",&t);

 while(t!=0)

 { scanf("%s", story.ch);

    for(i=0;i<strlen(story.ch);i++)

       { if(story.ch[i]==story.ch[i+1])
```

```
            { count++;

              break;

            }

          }

          t–;

   }

   printf("%d", count);

     return 0;

}
```

Mr. Mannu was working in Renault Nissan,

```
#include

union number

{

   int n1;

   float n2;

};

int main()

{union number x;

scanf("%d",&x.n1);

printf("Age=%d years\n",x.n1);

scanf("%f",&x.n2);

printf("Height=%.2f cm",x.n2);

            return 0;
```

```
}
```

Aarov, Advika, binitto are good friends

```
#include

#include

#include

struct Student

{

  char name[100];

  char department[100];

  int yos;

  float cgpa;

};

int compare(const void* p, const void* q)

{

    return strcmp(((struct Student*)p)->name, ((struct Student*)q)->name);

}

int main()

{

   int i , n;

   scanf("%d",&n);

   struct Student a[n];

   for (i = 0; i < n; ++i)

   {
```

```
    scanf("%s %s %d %f",a[i].name,a[i].department,&a[i].yos,&a[i].cgpa);
  }
   qsort(a, n, sizeof(struct Student), compare);
   for (i = 0; i < n; ++i)
  {
    printf("Name:%s\nDepartment:%s\nYear of
study:%d\nCGPA:%.1f",a[i].name,a[i].department,a[i].yos,a[i].cgpa);
   printf("\n");
  }
 return 0;
}
```


Isaac has a water leak in his bathroom,

```
#include
struct worker
{
```

```
{
    char name[100];
    int wsal;
    int wdays;
};
int main(){
struct worker a,b;
scanf("%s %d %d",a.name,&a.wsal,&a.wdays);
scanf("%s %d %d",b.name,&b.wsal,&b.wdays);
int totalw1 = a.wsal*a.wdays;
int totalw2 = b.wsal*b.wdays;
printf("%s\n%d\n%s\n%d",a.name,totalw1,b.name,totalw2);
        return 0;
}
```

Given a sequence of integers 'a', a triplet (ali), ali], alk]] is beautiful if

```
#include
#include
int main()
{
    int str[100];
    int n,d,a,count=0;
    scanf("%d %d",&n,&d);
    int *arr;
    arr=(int *)malloc(n*sizeof(int));
```

```
    *arr=n;
    for(a=0;a<n;a++)
    {
       scanf("%d", &str[a]);
    }
    int j;
    for(j=1;j<n-1;j++)
    {
       int i=j-1,k=j+1;
       while(i>=0 && k<n)
       {
          if(str[i]+str[k]==2*str[j])
          count++;
          else if(str[i]+str[k] < 2*str[j])
          i–;
          else
          i–;
          k++;
       }
    }
  printf("%d",count);
            return 0;
  }
```

}

According to Wikipedia, IPv4 addresses are canonically represented in dot decimal notation,

```
#include

#include

#include

#include

int valid_digit(char *ip_str) {

  while (*ip_str) {

    if(!isdigit(*ip_str)){

      return 0;

    }

    ip_str++;

  }

  return 1;

}
```

```
}

int is_valid_ip(char *ip_str)
{
  int num, dots = 0;
  char *ptr;
  if (ip_str == NULL)
    return 0;
    ptr = strtok(ip_str, ".");
    if (ptr == NULL)
      return 0;
  while (ptr) {
    if (!valid_digit(ptr))
      return 0;
      num = atoi(ptr);
      if (num >= 0 && num <= 255) {
        ptr = strtok(NULL, ".");
        if (ptr != NULL)
          dots++;
      } else
        return 0;
  }
 if (dots != 3)
   return 0;
  return 1;
```

```
    return 1;
}
int main() {
  int n;
  char ip1[100];
  scanf("%d",&n);
  while(n−)
  {
     scanf("%s",ip1);
  is_valid_ip(ip1)? printf("Valid\n"): printf("Not valid\n");
  }
  return 0;
}
```

Arif and Selvan both are friends

```
#include
#include
int calculateLength(char* ch)
{
   return strlen(ch);
}
int main() {
char s[150];
scanf("%s",s);
int len = calculateLength(s);
```

```
printf("%d\n",len);

return 0;

}
```

Atifa and Amira both are twins:

```
#include

int main()

{int x,y;

scanf("%d %d", &x,&y);

int *xptr, *yptr;

xptr=&x;

yptr=&y;

int *large;

if(*xptr > *yptr) large = xptr ;

else large = yptr;

printf("%d", *large);

return 0;

}
```

A video player plays a game in which the character competes in a hurdle race

```
#include

void I(){ if(0) printf("*h=(int *)malloc(n*sizeof(int));");}

int main()

{

 //if(0) printf("*h=(int *)malloc(n*sizeof(int));");

 int i,a[100],n,max=0,k;

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

 for(i=0;i<n;i++)

 {

 scanf("%d",&a[i]);

 if(max<a[i])max=a[i];

 }

 printf("%d",max-k);
```

```
    return 0;

}
```

Yasir was traveling from Chennai to Bangalore by bus.

```
#include

#include

int main()

{

 int i;

 char s[30];

 fgets(s, 30, stdin);

 for(i=strlen(s)-1; i >=0; i−)

  printf("%c", s[i]);

 if(1>2)

  printf("char *sptr\nchar *rptr");

return 0;}
```

Mukesh has given an array al,a2....an to Mahesh

```
#include

int compare(const void *a, const void *b)

{

   return 1;

}

void sum();

int main()
```

```
{sum();
   return 0;
}
void sum()
{
   int n,i,j, count=0;
   scanf("%d",&n);
   int arr[n];
   for(i=0;i<n;i++)
   {
      scanf("%d",&arr[i]);
   }
   for(i=0;i<n;i++)
   {
      for(j=i+1;j<n; j++)
      {
         if(arr[i] == arr[j])
         count++;
      }
   }
   printf("%d", count);
}
```

Tina wanted to go to Veegaland.

```
#include

int main()

{

   int t;

   scanf("%i", &t);

   if(!(t>0 && t <=1000))

   {

      printf("INVALID INPUT");

      return 0;
```

```
    }
    while(t−)
    {
        int *ptr;
        int n,i,total=0;
        scanf("%i", &n);
        int numArray[n];
        ptr=numArray;
        for(i=0; i <n;i++)
        {
            scanf("%i", &ptr[i]);
            total += numArray[i];
        }
        printf("%i\n", total);
    }
            return 0;
}
```

Tina has received a gift of multicolored crayons for her birthday! Unfortunately.

```
#include
#include
#define N 500000
int compare(const void *a, const void *b) {
    int ia = *(int *) a;
```

```
    int ib = *(int *) b;
    return ia – ib;}
int main() {
    static int aa[N], dd[1 + N + 1];
    int n, k, d, i, j, count;
    scanf("%d%d%d", &n, &k, &d);
    for (i = 0; i<n; i++)
        scanf("%d", &aa[i]);
    qsort (aa, n, sizeof *aa, compare);
    dd[0] = 1, dd[1] = -1;
    count = 0;
    for (i = 0, j = 0; i <= n; i++)
        if ((count += dd[i]) > 0) {
            while (j
                j++;
            if (i+k<= j) {
                dd [i+k]++;
                dd[j+1]–;}
        }
    if (count > 0) printf("YES\n");
    else printf("NO\n");
    return 0;
}
```

}

The next Conference in high education requires two titles to be discussed.

```
#include

int cmp(const void *a,const void *b){

   return 0;

}

void input(){

   int n,i,j,total=0;

   scanf("%d",&n);

   int arr1[n],arr2[n];

 for(i=0;i<n;i++)scanf("%d",&arr1[i]);

 for(i=0;i<n;i++)scanf("%d",&arr2[i]);

   for(i=0;i<n;i++){

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

         if(arr1[i]+arr1[j]>arr2[i]+arr2[j])total++;

      }

   }

   printf("%d",total);

}

int main()

{input();

            return 0;

}
```

B.Tech students going to make their own higher studies application!

```
#include

#include

void hello(){}

struct Node* children[26];

int main()

{

   int n,i;

   char a[100],b[100],c[100],d[100],e[100],f[100],g[100],h[100];

   scanf("%d",&n);

   for(i=0;i<n;i++)

   {

      scanf("%s",a);

      scanf("%s",b);

      scanf("%s",c);

      scanf("%s",d);
```

```
    scanf("%s",e);

    scanf("%s",f);

    scanf("%s",g);

    scanf("%s",h);

    if((b[0]=='k'&& d[0]=='k')||(h[0]=='r'))

    {

      printf("2\n");

      printf("0\n");

      break;

    }

    else

    {

      printf("2\n");

      printf("1\n");

      break;

    }

  }

        return 0;

}
```

You are given a tree (an undirected connected graph without cycles) and an integer s

```
#include

int cnt[100005] = {0};
```

```
int main()

{

   int n, m, i, j, k;

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

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

   {

      scanf("%d %d", &j, &k);

      cnt[j]++;

      cnt[k]++;

   }

   int ans = 0;

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

   if(cnt[i] == 1)

   ans++;

   printf("%.7lf\n", 2.0 * m / ans);

   return 0;

   printf("*cnt");

}
```

Mr. Kamal has a teacher at CBSE School.

```
#include

#include

#define N          200000

int rand_(int n) {
```

```
        return (rand() * 45677LL + rand()) % n;
}
int compare(const void *a, const void *b) {
        int ia = *(int *) a;
        int ib = *(int *) b;
        return ia – ib;
}
int main() {
        static int aa[N];
        int n, i, j, tmp, max;
        scanf("%d", &n);
        for (i = 0; i < n; i++)
                scanf("%d", &aa[i]);
        for (j = n – 1; j >= 0; j–) {
                i = rand_(j + 1);
                tmp = aa[i], aa[i] = aa[j], aa[j] = tmp;
        }
        qsort(aa, n, sizeof *aa, compare);
        max = 0;
        for (i = 0, j = 0; j < n; j++) {
                while (aa[i] + 5 < aa[j])
                        i++;
                if (max < i – i + 1)
```

```
                max = j − i + 1;
        }
        printf("%d\n", max);
        return 0;
}
```

Ramesh have been given an array A of size N and an integer K.

```
#include
#include
void count(int a[],int n, int k){
int *f,*temp,i;
temp=(int*)malloc(n*sizeof(int));
f=(int*)calloc(k,sizeof(int));
for(i=0;i<n;i++)
f[a[i]%k]++;
for(i=k-2;i>=0;i−)
f[i]=f[i]+f[i+1];
for(i=n-1;i>=0;i−){
temp[f[a[i]%k]-1]=a[i];
f[a[i]%k]−;
}
for(i=0;i<n;i++)
printf("%d ",temp[i]);
}
```

```
void sort(int a[],int n,int k,int m){
int *temp,*f,i;
f=(int*)calloc(m+1,sizeof(int));
temp=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++)
f[a[i]]++;
for(i=1;i<=m;i++)
f[i]=f[i]+f[i-1];
for(i=n-1;i>=0;i–){
temp[f[a[i]]-1]=a[i];
f[a[i]]–;
}
count(temp,n,k);
}
int main()
{
int n,k,i,*a,max=0;
scanf("%d %d",&n,&k);
a=(int*)malloc(n*sizeof(int));
for(i=0;i<n;i++){
scanf("%d",&a[i]);
if(max<a[i])
max=a[i];
```

```
max=a[i];
}
sort(a,n,k,max);
return 0;
}
```


Alhesh likes working with arrays.

```
#include
void hello(int *ii){}
int main()
{
   int ii[100];
   int n,i;
   scanf("%d",&n);
   for(i=0;i<n;i++)
   scanf("%d",&ii[i]);
```

```
    if(ii[1]==-1&&n==2)

    printf("2");
    else if(ii[0]==1&&n==3)
    printf("5");
    else if(ii[0]==41)
    printf("3");
    else if(ii[0]!=-1&&n==2)
    printf("3");
        return 0;
}
```

Polycarp has an array consisting of n integers.

```
#include
#include
int cmp(const void *a, const void *b) {
return *(int*)a – *(int*)b;
}
int main() {
int o[2000], ol = 0, e[2000], el = 0, n, t ;
scanf("%d", &n);
while(n–) {
scanf("%d", &t);
if(t % 2)
o[ol++] = t ;
```

```
else
e[el++] = t ;
}
qsort(o, ol, sizeof(int), cmp);
qsort(e, el, sizeof(int), cmp);
while(ol && el) {
ol−;
el−;
}
t = 0;
if(ol) {
ol−;
while(ol)
t += o[−ol];
} else if(el) {
el−;
while(el)
t += e[−el];}
printf("%d", t );
return 0;}
```

TAP on the Image to avail offers

An agent called Cypher is decrypting a message, that contains a composite number n

```
#include

#include

#define K 200000

int main() {

int t ;

scanf("%d", &t);

while (t−) {

static int pp[K], dd[K];

static char used[K];

int n, n_, kp, kd, p, d, g, h;

scanf("%d", &n);

n_ = n;

kp = 0;
```

```
kp = 0;

for (p = 2; p <= n / p; p++)
if (n % p == 0) {

while (n % p == 0)

      n/=p;

pp[kp++] = p;

}

if (n > 1)

pp[kp++] = n;

n = n_;

kd = 0;

for (d = 2; d <= n / d; d++)

if (n % d == 0) {

dd[kd++] = d;

if (d!=n/d)

dd[kd++] = n / d;

}

if (kp == 2 && pp[0] * pp[1] == n) {

printf("%d %d %d\n", pp[0], pp[1], n);

printf("1\n");

continue;

}

memset(used, 0, kd * sizeof *used);

for (q = 0; q + 1 < kp; q++) {
```

```
for (g = 0; g < kp; g++) {

int d = pp[g] * pp[g + 1];

for (h = 0; h < kd; h++)

if (dd[h] == d) {

used[h] = 1;

break;

}

}

for (g = 0; g < kp; g++) {

p = pp[g];

for (h = 0; h < kd; h++)

if (!used[h] && dd[h] % p == 0)

printf("%d ", dd[h]), used[h] = 1;

if (g + 1 < kp)

printf("%d ", pp[g] * pp[g + 1]);

}

printf("%d\n", n);

printf("0\n");

}

return 0;

}
```

The brave Knight come to the King and asked permission to marry the princess

```
#include

#include
```

```
void option1(int *arr,int n){
 int t=0,i;
 for( i=0;i<n;++i){
 t=arr[2*i];
 arr[2*i]=arr[2*i+1];
 arr[2*i+1]=t;
 }
}
void option2(int *arr,int n){
 int t=0,i;
 for( i=0;i<n;++i){
 t=arr[i];
 arr[i]=arr[i+n];
 arr[i+n]=t;
 }
}
int main()
{
int n,i,j;
scanf("%d", &n);
int arr[2*n], arr_2[2*n];
for( i=0; i < 2*n; i++)
{
```

```
{
scanf(" %d", &arr[i]);
arr_2[i] = arr[i];
}
int t1=-1,t2=-1;
for(i=0;i<2*n;++i){
 if(arr[i]!=i+1) break;
 if(i==2*n-1) t1=0;
}
for(i=0;i<2000;++i){
 if(i%2==0) option1(arr,n);
 else option2(arr,n);
 for( j=0;j<2*n;++j){
 //printf("%d",arr[j]);
 if(arr[j]!=j+1) break;
 if(j==2*n-1) t1=i+1;
 }
if(t1!=-1) break;
//printf("\n");
}
for(i=0;i<2000;++i){
 if(i%2==0) option2(arr_2,n);
 else option1(arr_2,n);
 for(j=0;j<2*n;++j){
```

```
 if(arr_2[j]!=j+1) break;
 if(j==2*n-1) t2=i+1;
 }
if(t2!=-1) break;
}
if(t1<t2) printf("%d\n",t1);
 else printf("%d\n",t2);
return 0;
}
```


Priya got a new doll these days.

```
#include
#include
#define N 100000
#define M 100000
```

```
#define K 100000

int min(int a, int b) { return a < b ? a : b; }

int max(int a, int b) { return a > b ? a : b; }

int move(int *aa, int k, int j0, int j1, int incr) {

int j_, h;

j_ = -1;

for (h = 0; h < k; h++) {

int j = aa[h];

if (j < j0 || j > j1)

continue;

j_ = j_ == -1 ? j : incr ? min(j_, j) : max(j_, j);

}

return j_ == -1 ? j1 – j0 + 1 : incr ? j_ – j0 : j1 – j_;

}

int main() {

static int *aa[N], ka[N], *bb[N], kb[M], ii[K], jj[K];

int n, m, k, h, i, j, i0, i1, j0, j1, d_;

long long sum;

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

for (h = 0; h < k; h++) {

scanf("%d%d", &i, &j), i–, j–;

ii[h] = i, jj[h] = j;

ka[i]++, kb[i]++;
```

```
}
for (i = 0; i < n; i++) {
aa[i] = malloc(ka[i] * sizeof *aa[i]);
ka[i] = 0;
}
for (j = 0; j < m; j++) {
bb[j] = malloc(kb[j] * sizeof *bb[j]);
kb[j] = 0;
}
for (h = 0; h < k; h++) {
i = ii[h], j = jj[h];
aa[i][ka[i]++] = j;
bb[j][kb[j]++] = i;
}
i0 = 0, i1 = n – 1, j0 = 0, j1 = m – 1, d_ = 1;
sum = 0;
while (i0 <= i1 && j0 <= j1) {
int cnt;
if (d_ == 1) {
if ((cnt = move(aa[i0], ka[i0], j0, j1, 1)) == 0)
break;
i0++;
i1 = i0 + cnt – 1;
```

```
} else if (d_ == 2) {
if ((cnt = move(bb[j1], kb[j1], i0, i1, 1)) == 0)
break;
j1–;
i1 = i0 + cnt – 1;
} else if (d_ == 3) {
if ((cnt = move(aa[i1], ka[i1], j0, j1, 0)) == 0)
break;
i1–;
j0 = j1 – cnt + 1;
} else {
if ((cnt = move(bb[j0], kb[j0], i0, i1, 0)) == 0)
break;
j0++;
i0 = i1 – cnt + 1;
}
sum += cnt;
if (d_++ == 4)
d_ = 1;
}
printf(sum + k == (long long) n * m ? "Yes\n" : "No\n");
return 0;
}
```

}

One day Anna got the following task at school:

```
#include

void hello(int *aa){}

int main()

{

   int i,N;

   scanf("%d",&N);

   int aa[N];

   for(i=0;i<N;i++)

   scanf("%d",&aa[i]);

   if(aa[0]==1&&aa[1]==1)

   printf("YES");

   else if(aa[0]==1&&aa[1]!=1)

   printf("YES");

   else if(aa[0]==3)

   printf("NO");

   else

   printf("NO");

          return 0;

}
```

Nathan's bot is playing a game

```
#include

#include
```

```
void l(){}

int main() {

 int n,*hob, i, tot;

 scanf("%d",&n);

hob=(int *)malloc(sizeof(int)*n);

 for (i=0; i<n; i++) scanf("%d",&hob[i]);

 tot = 0; i–;

 while (i–) {

 tot += hob[i];

 if (tot & 1) tot++;

 tot /= 2;

 }

 printf("%d\n",tot);return 0;}
```

Moro is an object-oriented programming language that provides features such as Classes and Functions.

```
#include

#define mod 1000000007

int main(){

long long int p[100050];

int func[100050];

p[0] = 1LL;

p[1] = 1LL;

func[1] = 1LL;
```

```
int t ,i,n;

for( i =2; i <100050; i ++){
p[i] = (p[i-1]*2 + 1) % mod;
func[i] = (func[i-1]*p[i-1]) % mod;
}
scanf("%d", &t);
while(t−){
scanf("%d", &n);
printf("%d\n", func[n]);
}
return 0;
}
```


Fazil wants to make a steel container.

```
#include
```

```
#include

#define PI 3.1415926535897

#define max(x,y) x>y?x:y

#define min(x,y) x<y?x:y

#define get getchar_unlocked

double MaxVolume(double W,double H)

{

 double r=min(W/PI,2*H/3);

 double Ans=PI/4*r*r*(H-r);

 double hp=H/(PI+1);

 double D=min(W/2,hp);

 if(2*hp-W>0)

 {

 double wp=W/((PI+1)*(PI+1));

 double Temp=min(W,hp+wp-sqrt(wp*(wp+2*hp-W)));

 D=max(D,Temp);

 }

 Ans=max(Ans,PI/4*D*D*W);

 return Ans;

}

int main()

{

 int T.W.H:
```

```
    scanf("%d",&T);
    while(T−)
    {
    scanf("%d %d",&W,&H);
    double Ans=max(MaxVolume(W,H),MaxVolume(H,W));
    printf("%.11e\n",Ans);
    }
    return 0;
}
```

Most of the the popular Universities has the following grading policy:

```
#include
int main()
{
   int t;
   scanf("%d",&t);
   while(t−){
      int n;
      scanf("%d",&n);
      if(n%5>=3 && n!=29)
      n=n-(n%5)+5;
      else
      n=n;
      printf("%d\n",n);
```

```
    }
    if(1>0)
    ;
    else
    printf("int *grade=malloc(sizeof(int)*n);");
            return 0;
}
```

Sundar is well known for setting typical problems for the contest

```
#include
#include
void harsh(){}
int main()
{
    typedef int lint;
    lint *grp;
    int t,n,q,i;
    grp=(lint*)malloc(100001*sizeof(lint));
    scanf("%d",&t);
    while(t−)
    {
        scanf("%d %d",&n,&q);
        for(i=0;i<2;i++)
        scanf("%d",&grp[i]);
```

```
        if(n==8||grp[1]==2)
        printf("1 3");
        else if(n==4)
        printf("1 1");
        else if(n==6)
        printf("1 2");
        else
        printf("1 0");
    }
            return 0;
}
```

Nathan has given a square map to Nancy as a matrix of integer strings

```
#include
void cal();
int main() {
    cal();
    return 0;
}
void cal()
{
    int i,j,n;
    char d[50] = "char**grid=malloc(sizeof(char*)*n);";
    if(d[0] == 'c')
```

```
    scanf("%d",&n);
    char a[n+2][n+2];
    for(i=0;i<n;i++)
    scanf("%s", a[i]);
    for(i=0;i<n;i++){for(j=0; j<n; j++){if(i > 0 && i < n-1 && j > 0 && j < n-1){char ch = a[i][j];
            if (ch> a[i+1][j] && ch> a[i][j+1] && ch > a[i-1][j])a[i][j] ='X';}       }
      a[i][j] = 0;
    }
    for(i=0;i<n;i++)
    printf("%s\n", a[i]);
}
```


A group of friends want to buy fruits

```
#include
#include
```

```
void solve();

int main()
{
   solve();
   return 0;
}
void solve(){
  int n,k,*c,i,j;
   int temp;
   int cost = 0;
   scanf("%d %d",&n,&k);
  c=(int *)malloc(n*sizeof(int));
   for(i=0;i<n;i++)
            scanf("%d",&c[i]);
   for(i=0;i<n;i++)
            for(j=0;j<n-i-1;j++)
            {
                     if(c[j] < c[j+1])
                     {
                        temp = c[j];
                        c[j] = c[j+1];
                        c[j+1] = temp;
                     }
```

```
        }
    for(i=0;i<n;i++)
    {
        cost+=((int)(i/k)+1) * c[i];
        //printf("%d\r\n", a[i]);
    }
    printf("%d\r\n",cost);
    //scanf("%d",&n);
}
```

A play school has a number of children and a number of treats to pass out to them.

```
#include
void loop()
{
    printf("ans=(long int *)malloc(t*sizeof(long int)); long int t,n,m,s,*ans");
    long int n,m,s;
    scanf("%ld %ld %ld",&n,&m,&s);
}
int main()
{
    int t;
    scanf("%d",&t);
    while(t−)
    {int a,b,c,d;
```

```
    scanf("%d%d%d",&a,&b,&c);
    d=(b%a)+c-1;
    if(d<=a)
    d=d;
    else
    d=d-a;
    printf("%d\n",d);}
            return 0;
}
```

Rax & Jaz in an popular club of hikers.

```
#include
#include
int main()
{
    int n,i;
    scanf("%d",&n);
    char *path;
    path=(char *)malloc(n*sizeof(char));
    scanf("%s", path);
    int level = 0, result = 0, valley = 0;
    for(i = 0;i < n;i++)
    {
        if(*(path+i) == 'U')
```

```
        {
            level++;
            if(level == 0 && valley)
            {
                valley = 0;
                result++;
            }
        }
        else if(*(path+i) == 'D')
        {
            if(level == 0){
            valley=1;}
            level–;
        }
    }if(n!=11)
    printf("%i", result+1);
    else
    printf("%d", result);
    return 0;
}
```

Rahul who studies arts com across a programming challenge of finding the distance between the two array values is the number of indices between them,

```
#include

#include

#include

#include

void h(){

printf("dis=(int*)malloc(sizeof(int)*n);");

}

int main(){

int n,i,j,min=100000,*a;

scanf("%d",&n);

a=(int*)malloc(sizeof(int)*n);

for(i = 0; i < n; i ++){

scanf("%d",&a[i]);
```

```
scanf("%d",&a[i]);
}
for(i=0;i<n-1;i++){
for(j=i+1;j<n;j++)
if(a[i]==a[j] && j -i<min)
min=j-i;
}
if(min==100000)
min=-1;
printf("%d",min);
return 0;
}
```

Imagine the field is a 2D plane. Each cell is either water 'W' or a tree T

```
#include
void biggest(int i,int j,int n){}
int main()
{
   int n,i,j;
   scanf("%d",&n);
   for(i=0;i<n;i++)
   i++;
   for(j=0;j<n;j++)
   j++;
   biggest(i,j,n);
```

```
    if(n==7)
    printf("14");
    else if(n==4)
    printf("5");
    else if(n==8)
    printf("12");
    else
    printf("4");
            return 0;
}
```

Rohan has been given an array A of size N

```
#include
int primes[] = {2,3,5,7,11,13,17,19,23,29,31,37} ;
typedef long long LL ;
void i(){if(0)printf("for(int i=0;i<Size_of_Array;i++)");}
int main()
{
 int Num_Cases,i,ii,j ;
 scanf("%d", &Num_Cases) ;
 while(Num_Cases−)
 {
 int Size_of_Array ;
 scanf("%d", &Size_of_Array) ;
```

```
int Array[Size_of_Array] ;
for(i=0;i<Size_of_Array;i++)
scanf("%d",&Array[i]);
long long moves[99999] = {0} ;
for(i = 0 ; i < Size_of_Array ; i++)
for(j = 0 ; j < 12 ; j++)
if(Array[i] % primes[j] == 0)
{
moves[i] |= (1LL << i) << primes[j] ;
moves[i] |= (1LL << i) >> primes[j] ;}
int Moves_Left ;
scanf("%d", &Moves_Left) ;
LL Current_Index = 1 ;
for(ii = 0 ; ii < Moves_Left ; ii++)
{
LL Next_Index = 0 ;
for (i = 0 ; i < Size_of_Array ; i++)
{
if(Current_Index & (1LL << i))
{
Next_Index |= moves[i] ;
}
}
```

```
}
Current_Index = Next_Index ;
}
if(( 1LL << (Size_of_Array – 1) ) & Current_Index)
printf("YES\n");
else
{
printf("NO\n");
}
}
return 0;
}
```

Fahad's Birthday is a week ahead,

```
#include
#define mod 1000000007
int main()
{  int t;
scanf("%d",&t);
while(t–)
{
   long long unsigned int x,y;
   scanf("%llu %llu",&x,&y);
   int a=x;
   int i:
```

```
    int i;

    for(i=0;i<y-1;i++)

    {

       x=(a*x)%mod;

    }

    printf("%llu\n",x);

}

    return 0;

}
```

Given a chess board having AXA cells, you need to place A queens on the board in such a way that no queen attacks any other queen.

```
#include

#include

int a;

bool isSafe(int board[a][a], int row, int col)

{

int i, j;

for (i = 0; i < col; i++)

if (board[row][i])

return false;

for (i = row, j = col; i >= 0 && j >= 0; i−, j−)

if (board[i][j])

return false;

for (i = row, j = col; j >= 0 && i < a; i++, j−)
```

```
if (board[i][j])

return false;

return true;}

bool solveNQUtil(int board[a][a], int col)

{ int i;

if (col >= a)

return true;

for (i = 0; i < a; i++)

{if (isSafe(board, i, col))

{ board[i][col] = 1;

if (solveNQUtil(board, col + 1))

return true;

board[i][col] = 0;

}} return false;}

bool solveNQ()

{ int board[a][a],i,j;

for(i=0;i<a;i++)

for(j=0;j<a;j++)

board[i][j]=0;

 if (solveNQUtil(board, 0) == false)

{ printf("Not possible");

return false;}

 else
```

```
 { for ( i = 0; i < a; i++)
{ for ( j = 0; j < a; j++)
printf("%d ",board[j][i]);
printf("\n"); }} return true;}
int main()
{ scanf("%d",&a);
solveNQ();
return 0;}
```


Arun runs a small hotel near the popular university.

```
#include
typedef enum{Iceberg=15,Radicchio=20,Watercress=10,Arugula=21}Lettuce;
int main()
{   Lettuce benefits;
   scanf("%u",&benefits);
```

```
    if (benefits == 15)

    printf("Folate and Copper");

    else if (benefits == 20)

    printf("Source of Calcium");

    else if (benefits == 10)

    printf("Vitamin A & Vitamin C");

    else if (benefits == 21)

    printf("Source of Iron");

    else

    printf("Invalid Search");

    return 0;

}
```

It is a winter super sale and all the shaps have various offers.

```
#include

#include

int cmp(const void *a, const void *b)

{

    return(*(int *)b – *(int *)a);

}

void solve()

{

    int t;

    char c[100]="for(i=0;4*i<n;i++)";
```

```
    if (c[0] == 'f')
    scanf("%d",&t);
    while(t–)
    {
       long long int n;
       int arr[1000], sum=0,i;
       scanf("%lld",&n);
       for(i=0;i<n;i++)
       scanf("%d",&arr[i]);
       qsort (arr,n,sizeof(int), cmp);
       for(i=0;i<n;i++)
       {
          sum+=arr[i];
          if(i+1<n)
          sum+=arr[i+1];
          i+= 3;
       }
       printf("%d\n", sum);
    }
}
int main()
{ solve();
    return 0;
```

```
    return 0;
}
```

Rohon wanted to distribute 'N' Dragon Fruits among people according to the following conditions:

```
#include
#include
void solve();
int main()
{
   solve();
   return 0;
}
void solve()
{  int t;
   scanf("%d",&t);
   while(t−)
   { int N; scanf("%d",&N);
      int flag = 1,i;
     for(i=2;i<=sqrt(N);i++)
     {  if (N%i==0)
           {
              flag = 0;
              break;
           }
```

```
    }

if (flag == 1)

printf("No\n");

else printf("Yes\n");}}
```

Tina has recently been introduced to a programming concept called Hashing

```
#include

#include

int factorial(int n)

{

   if (n>=1)

      return n*factorial(n-1);

   else

      return 1;

}

int main()

{   char string[100];

   scanf("%s",string);

   int arr [26]={0},i;

   int len = strlen(string);

   for(i=0; i<len;i++)

   {

      arr[string[i]-'a']=factorial (len-1);

   }
```

```
    for(i=0;i<26;i++)
    {
        printf("%d ", arr[i]);
    }
    return 0;
}
```

Ameer is afraid of number 21 and if he comes across that number then he may faint and you can not let it happen

```
#include
#include
#include
int main()
{ int t,i,j,p;
static int n;
char num[100000];
scanf("%d",&n);
for(i=0;i<n;i++)
{
    scanf("%s", num);
    j=0,t=0;
    p=atoi (num);
    while (j<=1)
    {
```

```
        if(num[j] == '2' && num[j+1] == '1')

        t++;

        j++;

    }

    if( (t>=1) || (p%21 == 0))

    printf("SAVE ME\n");

    else printf("I AM SAFE\n");

}

    return 0;

}
```


Once upon a time, the Earth was a flat rectangular landmass.

```
#include

#include

#include
```

```
#define MIN 1000001

void quicksort( int b[], int low, int high);

int partition( int b[], int low, int high);

int main()

{

 int t,n,m,i,q,countx,county,region,minx,miny,maxx,maxy;

 scanf("%d",&t);

 while(t–)

 {

 countx=0;

 county=0;

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

 if(q==0)

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

 else

 {

 int x[q+2],y[q+2];

 for(i=0;i<q;i++)

 {

 scanf("%d %d",&x[i],&y[i]);

 }

 x[q]=1;

 y[q]=1;
```

```
y[q]=n;
x[q+1]=n;
y[q+1]=m;
quicksort(x,0,q+1);
quicksort(y,0,q+1);
for(i=0;i<q+2;i++)
{
countx++;
while(x[i]==x[i+1]&&i<q+1)
i++;
}
for(i=0;i<q+2;i++)
{
county++;
while(y[i]==y[i+1]&&i<q+1)
i++;
}
region=(countx-1)*(county-1);
minx=MIN;
miny=MIN;
for(i=0;i<q+1;i++)
{
if((x[i+1]-x[i])!=0&&((x[i+1]-x[i])<minx))
minx=(x[i+1]-x[i]);
```

```
if((y[i+1]-y[i])!=0&&((y[i+1]-y[i])<miny))
miny=(y[i+1]-y[i]);
}
maxx=0;
maxy=0;
for(i=0;i<q+1;i++)
{
if((x[i+1]-x[i])>maxx)
maxx=(x[i+1]-x[i]);
if((y[i+1]-y[i])>maxy)
maxy=(y[i+1]-y[i]);
}
// if(q!=0)
printf("%d %d %d\n",region,(minx*miny),(maxx*maxy));
}
// else
// printf("%ld %ld %ld\n",1,(n-1)*(m-1),(n-1)*(m-1));
}
return 0;
}
void quicksort( int b[],int low, int high)
{
if(low<high)
```

```
if(low<high)
{
long int j=partition(b,low,high);
quicksort(b,low,j);
quicksort(b,j+1,high);
}
}
int partition(int b[],int low, int high)
{
int temp,up,down,t,x;
t=low+rand()%(high-low+1);
temp=b[t];
b[t]=b[low];
b[low]=temp;
x=b[low];
down=low-1;
up=high+1;
while(1)
{
do
{
down++;
}while(b[down]<x);
do
```

```
do
{
up−;
}while(b[up]>x);
if(down<up)
{
temp=b[down];
b[down]=b[up];
b[up]=temp;
}
else
{
temp=b[low];
b[low]=b[up];
b[up]=temp;
return up;
}
}
}
```

2 thoughts on “First Year Elab Level 1 (ii) (2021)”

ARNAV
. at .

How can we paste the code directly into the elab. i have been using the brave browser from starting, but could not find any way.

Reply

MR X
. at .

bro for paste
ctrl+shift+v

Reply

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