First Year ELAB Level 1 (i) (2021)

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34. Lokesh have been given a String S consisting of uppercase and lowercase English alphabets.
35. Roopa has given a program to her close friend Jhansi in the apartment where she lives
36. Not everyone probably knows that Nivin has younder brother Nithin. Currently Nithin learns to read.
37. Elavenil likes strings a lot but she likes palindromic strings even more.
38. Mohit has no work to do in the kitchen, so he decided to play a card game with the following rules:
39. Jeferson was given a strings of length 8 consisting solely of 'O's and '1's.
40. Nathan wants to implement wildcard pattern matching supporting only the wildcard '?'.
41. Simon celebrates his 25th birthday.
42. Darsh seemingly down-to-earth guy.

43. Issac is a language teacher at a high school in Madurai.
44. Sajid is an eighth-grader in a CBSE school.

45. Simon is planning to summer vacation trip to Kodaikanal.
46. Laaslya is planning to go to the cinema theater to spend her weekend vacation.
47. Advika is trying to solve the puzzle problem during Mathematics class hour
48. Queen Advika is planning an attack on King Irfan's Dawn of Titans.
49. Selvan is very interested in surfing the contents from google.
50. Selvan asks his friend Arav to buy the book. Arav would recommend a bookstall in Thanjavur.
51. A small country leader decided to bring some reforms after 25 years of his rule.
52. In the year 2065, a scientist invents the time machine.
53. Meera is a food blogger and all her fans craves for the photos of the new restaurants and its dishes.
54. Britta's brother owns a Grocery store and for their customers he usually gives the manually written bill
55. Hassan lives in a village and has to take the bus to college every day.
56. The king is left alone on the chessboard.
57. Mr. Mannu was working in Renault Nissan.
58. Nathan is new to an online export firm so he doesn't know about the currency conversion involved during the export process.
59. Irfan is going to finish his final year master of computer application.
60. Simon is a young aspiring cricketer who dreams of playing one day for the India national cricket team.
61. Tina has received a gift of multicolored crayons for her birthday!
62. Kolpana Chowla is planning an expedition to Jupiter for n people.
63. Amazon Prime announced a one-year subscription offer for technical students.
64. Mukesh has given an array al,a2,...,an to Mahesh.
65. After long days Arun met with Nirmala in a Bank, and since then they are collecting coins together.
66. Atifa and Amira both are twins.
67. Arif and Selvan both are friends.
68. Hotstar announced an IPL offer for technical students.
69. Tina wanted to go to Veegaland.
70. The next Conference in high education requires two titles to be discussed.
71. Manu's task is to write a registration system.
72. Mithran has an array of lengths n.
73. Dr. Abdul Kalam is a Professor at a top university.
74. Vijay has given a set of points x1, x2, xn on the number line.
75. Tina had a pretty weird sleeping schedule.
76. Polycarp has an array consisting of n integers.
77. Mr. Kamal has a teacher at CBSE School.
78. The brave Knight came to the King and asked permission to marry the princess.
79. B.Tech students going to make their own higher studies application!

80. Athesh likes working with arrays.

81. The Gang of Friends went to one of their friend's sangeet function were they planned to dance as a pair.
82. A Zoo consists of a lion museum and a zoo for safari riding.
83. A play school has a number of children and a number of treats to pass out to them.
84. Moro is an object-oriented programming language that provides features such as Classes and Functions.
85. Dharma and Tina has recently decided to learn about developing compilers.
86. Pathan likes solving Rubik's cube a lot.
87. Two lions and a hyena are at various positions on a line.
88. Shah is an road side cloth seller.
89. Sundar is well known for setting typical problems for the contest.
90. Since Festember is a contest of teams with up to two members, everyone is looking for a teammate
91. Arun runs a small hotel near the popular university.
92. It is a winter super sale and all the shops have various offers.
93. Araov was given a problem to solve, by his brother Dharma.
94. Rohan wanted to distribute 'N' Dragon Fruits among people according to the following condition
95. Fahad's Birthday is a week ahead.
96. Consider an analog clock whose hour and minute hands are A and B centimeters long, respectively.
97. Susi's Birthday is near so she had started planning a party for all of her friends.
98. A Popular Telephone Service Company wanted to set up its network in Pakistan.
99. Imagine the field is a 2D plane. Each cell is either water 'W' or a tree 'T'.
100. 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,

Nathan works as an HR in a private company.

```
#include

int main()

{

float var1,var2,res;

scanf("%f %F",&var1,&var2);
```

```
//calculating sum

res=var1+var2;

printf("%.3f",res)

;           return 0;

}
```

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

```
#include

#include

int main()

{

   int U,V;int s; scanf("%2d %2d",&U,&V);

 // if ((U%2==0)||(V%2==0)) s=U*V/2;









  // else

   s=U*V/2+((U%2)*(V%2));
```

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

Rathik organized technical round interview in Macrosoft for the set of computer science candidates.

```
#include
int main()
{
    int testnum1,testnum2;
    int sum,sub,mult,mod;
    float div;
    scanf("%d ",&testnum1);
```

```
    scanf("%d",&testnum2);
    sum=testnum1+testnum2;
    sub=testnum1-testnum2;
    div=(float)testnum1/(float)testnum2;
    mult=testnum1*testnum2;
```

```
    mod=testnum1%testnum2;
    printf("\nAddition : %d",sum);
    printf("\nSubtraction : %d",sub);
    printf("\nMultiplication : %d",mult);
    printf("\nDivision : %0.3f",div);
    printf("\nModulus : %d",mod);
```

```
        return 0;
}
```

Elavenil runs a popular bakery in his native.

```
#include
int main()
{ int n;
   scanf("%d",&n);
  printf("%d",(n/2)+1);return 0;
}
```

Nancy bought apples in a fruit shop.

```
#include

int main()

{

   int billamt,amtgiven;

   int a,b;

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

   a=billamt/amtgiven;
```

```
    a=billamt/amtgiven;

    b=billamt%amtgiven;
    printf("\nQuotient:%d",a);









    printf("\nRemainder:%d",b);

        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;
```

```
}
```

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;

}
```

```
#include

int main()

{

   float num1,num2;

   double resnum1,resnum2;

   scanf("%f%f",&num1,&num2);

   resnum1=num1;

   resnum2=num2;
```

```
    printf("%lf\n%lf",resnum1,resnum2);
            return 0;
}
```

Professor JD has lots of options.

```
#include
#include
int main()
{
float b,ls,rs1,rs2;
scanf("%f %f",&b,&ls);
b=b*b;
ls=ls*ls;
rs1=sqrt(ls-b);
rs2=sqrt(ls+b);
printf("%.5f %.5f",rs1,rs2);          return 0;}
```

Laasya bought a new volleyball in the sports shop. It looks like a medium size.

```
#include
#include
int main()
{
float radiusofball,volumeofball;
scanf("%f",&radiusofball);
volumeofball=(4/3)*3.14*pow(radiusofball,3);
```

```
printf("%f",volumeofball);
        return 0;
}
```


Abi and Jannu are off to the wedding of a close relative.

```
#include
int main()
{
   int n;
   scanf("%d",&n);
   if(n%8==1)
   printf("%dLB",n+3);
   else if(n%8==2)
   printf("%dMB",n+3);
   else if(n%8==3)
```

```
    printf("%dUB",n+3);

    else if(n%8==7)

    printf("%dSU",n+1);

    else if(n%8==0)

    printf("%dSL",n-1);

    else if(n%8==4)

    printf("%dLB",n-3);

    else if(n%8==5)

    printf("%dMB",n-3);

    else if(n%8==6)

    printf("%dUB",n-3);

            return 0;}
```

Three brothers want to take a photo with family members.

```
#include

int main()

{

   int bro1,bro2,bro3,tallest;

   scanf("%d %d %d ",&bro1,&bro2,&bro3);

   if(bro1>bro2 && bro1>bro3)

   tallest= bro1;

   else if (bro2>bro1 && bro2>bro3)

   tallest=bro2;

   else
```

```
    tallest=bro3;
    printf("%d",tallest);
            return 0;
}
```

There are two monkeys on an x-axis ready to jump in the positive direction

```
#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;
}
```

Click here!

Use the code: Miru2021

Swathi is working in a world famous pizza restaurant.

```
#include
#include
int main()
{
    int angle1,angle2,angle3;
```

```
    scanf("%d %d %d",&angle1,&angle2,&angle3);
    if(angle1+angle2+angle3==180)
    printf("Pizza Slice is Valid");
    else
    printf("Pizza Slice is Not Valid");
            return 0;
}
```

Agathiyan is the Chief In charge for carrying out World Economic Survey in India.

```
#include
#include
int main()
{
    int N;
    scanf("%d",&N);
    if(N<10)
    printf("Insufficient Earning");
    else if (N<100)
    printf("Very Low Earning");
    else if (N<1000)
    printf("Low Earning");
    else if (N<10000)
    printf("Sufficient Earning");
    else
```

```
    printf("High Earning");
        return 0;
}
```


Sivan's is teaching his son Vigneshwaran his daily lessons in their home.

```
#include
int main()
{
    int angle1,angle2,angle3,sumofangles;
    scanf("%d %d %d",&angle1,&angle2,&angle3);
    sumofangles=angle1+angle2+angle3;
    if(sumofangles==180)
    printf("Angles are valid");
    else
    printf("Angles are not valid");
```

```
        return 0;
}
```

Rohit has 'A' Chocolates and Mohit has 'B' Chocolates.

```
#include

int main()

{

   int A,B,K;

   scanf("%d %d %d",&A,&B,&K);

   if(A>=K)

   printf("%d %d",(A-K),B);

   else if (A<=K)

   printf("%d %d",0,B-(K-A));

 return 0;

}
```

Thane wants to print a document with "N" pages double sided, where two pages of data can be printed on one sheet of paper.

Click on the image !

Use the code: Miru2021

```
#include

int main()

{

   int N,n; scanf("%d",&N);

   n=N/2;

   if(N%2==0)

   printf("%d",n);

   else

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

   return 0;

}
```

Selvan is working as a QC in a reputed Multinational Conglmerate.

```
#include

#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;
}
```

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;}
```

The Matriculation school have arranged an Annual Day Function.

```
#include
int main()
{
   int rows;
   int i,j;
   scanf("%d",&rows);
   for(i=1;i<=rows;i++)
   {
      for(j=1;j<=i;j++)
      {
```

```
        if(i==1 || i==rows || j==i || j==1)
      {  printf("1 ");   }
   else
   {    printf("0 ");}}
   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];
int i,j;
for( i=0;i<3;i++){
   for(j=0;j<3;j++){
```

```
        scanf("%d ",&A[i][j]); }}
int s1=0,s2=0;
for (i=0;i<3;i++){
   for (j=0;j<3;j++){
      if((i+j)%2==0){
         s1=s1+A[i][j]; }
      else {s2=s2+A[i][j];}}}
   printf("%d\n%d",s1,s2);
            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, moves, t;
 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 =row -1;

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;}
```

Tap on the image !

Use the code : Miru2021

After completing some serious investigation, Arif and Simon are now chilling themselves in the Ooty hills.

```
#include

int main()

{ int t,n,h,i,l=1,count;

scanf("%d",&t);

while(t−)

{l=1;

count=0;

 scanf("%d",&n);

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

 {

  scanf("%d",&h);

  if(h==l)

  {

  count+=2;

  }

  if(h>l)

  {

  l=h;

  count++;}}

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

```
}return 0;}
```

Let's consider a triangle of numbers in which one number appears in the first line, two numbers appear in the second line, three in the third line, etc.

```
#include

int main()

{

int i,n,j,t;

scanf("%d",&t);

while(t−)

{

   scanf("%d",&n);

   int ar[n][n];

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

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

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

      scanf("\n");}

   }

   for(i=n-1;i>=1;i−)

   {

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

      {

         if(ar[i][j]>ar[i][j+1])ar[i-1][j]+=ar[i][j];

         else ar[i-1][j]+=ar[i][j+1];
```

```
        }

    }
printf("%d\n",ar[0][0]);
}
            return 0;
}
```

Laaysa with his friends going the theatre for a movie.

```
#include
int main()
{int t,i,j,c;
scanf("%d",&t);
for(i=1;i<=t;i++){
   if(i%2==0)
   c=2;
   else
   c=1;
   for(j=1;j<=i;j++){
      printf("%d ",c);
      c+=2;
   }printf("\n");
}          return 0;}
```

[Click ont the image to know more !]

Use the code : Miru2021

Hasan and Roopa were very keen to celebrate Valentine's Day at their home.

```
#include

int main()

{

   int t,n,x[100002],y[100002];

   scanf("%d",&t);

   while(t!=0)

   {

      scanf("%d",&n);

      int i;

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

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

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

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

```
    int sum1=0,sum2=0;

    for(i=0; i<n; i=i+2)
    {
      sum1=sum1+x[i]+y[i+1];
      sum2=sum2+y[i]+x[i+1];
    }
    if(sum1<sum2)
    printf("%d",sum1);
    else
    printf("%d",sum2);
    t–;
  }
        return 0;
}
```

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

```
#include

int main()
{   int FreqArr[100000];
  int Size,m=0,c=0,e=0;
  int i,j;
  scanf("%d",&Size);
  for(i=0;i<Size;i++)
```

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

for(i=0;i<Size;i++){c=1;

for (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;}
```

Today is Caleb's birthday. His dad has surprised him with truly fruity gifts: 2 fruit baskets.

Code : Miru2021

```
#include

int main()
```

```
{int t,n,m,k;

scanf("%d",&t);

while(t>0)

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

while(k>0)

{ if(n>m)

{m++;}

else if(m>n)

{n++;}

k−;}

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

t−;}return 0;}
```

Joslyn likes problems involving arrays.

```
#include

int main()

{ int matprob[100],n,c,sum, mult,t; scanf("%d",&t);  int i,j,k;

while(t−) { scanf("%d",&n);  c=0;

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

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

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

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

{ sum=0,mult=1;

for(k=i;k<=j;k++)
```

```
{sum+= matprob[k]; mult*=matprob[k]; }

if(sum==mult)  c++; }}   printf("%d\n",c); }return 0;}
```

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

```
#include

int main()

{

int t; int i;

scanf("%d",&t); while(t−)

{

int n,a=0,b=0;

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

char s[100],r[100];

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

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

a+=s[i];

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

b+=r[i];

if(a==b)

printf("YES\n");

else

printf("NO\n"); }

return 0;
```

```
}
```

Afghanistan has surrounded by attackers. A truck enters the city.

```
#include

int main()

{int n=0,c=0;

char tag[9];

scanf("%s",tag);

while(n<8){

   if(tag[n+1]=='-')

   n+=2;

   else if((tag[n]+tag[n+1])%2==0)

   c++;

   n++;}

if(c>=4)printf("Allowed");

else printf("Arrest");

return 0; }
```

Click here to view

Hassan is given a string containing characters A and B only.

```
#include

#include

int main()

{ char s[100001];

int t,count=0,i;

scanf("%d",&t);

while(t!=0)

{scanf("%s",s);

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

{if(s[i]==s[i+1])

count++; }

printf("%d\n",count); count=0;    t−;}        return 0;}
```

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

```
#include

#include

int main()

{int i;

char ch[100];

scanf("%s",ch);

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

   if(ch[i]>=97 && ch[i]<=122)
```

```
    ch[i]=ch[i]-32;

    else if (ch[i]>=65)

    ch[i]=ch[i]+32; }

printf("%s",ch);    return 0;}
```

Roopa has given a program to her close friend Jhansi in the apartment where she lives

```
#include

#include

int main()

{   const char *a[]={ "zero" , "one" , "two" , "three" , "four" , "five" , "six" , "seven" , "eight" , "nine" };

    const char *b[]={ "ten" , "eleven" , "twelve" , "thirteen" , "fourteen" , "fifteen" , "sixteen" ,
"seventeen" , "eighteen" , "nineteen" };

    const char *c[]={ " " , " " , "twenty" , "thirty" , "forty" , "fifty" , "sixty" , "seventy" , "eighty" , "ninety"
};

    //const char *p[]={"hundred" , "thousand" };

    char num[10];

    int l,n,n1;

    scanf("%s",num);

    l=strlen(num);

    if(l==4)

    {      while(l−)

     {         if(l==3&&num[0]!='0')

      {          printf("%s thousand ",a[*num- '0']); }

           if(l==2 && num[1]!='0' && num[2]=='0'&&num[3]=='0')
```

```
{    n=num[1]-48;
    printf("%s hundred ",a[n]);
    break; }
 if(l==2 && num[1]!='0')
{ n=num[1]-48;
    printf("%s hundred ",a[n]);}
if(l==1)
{ if(num[2]=='0' && num[3]=='0')
    {       printf(" ");
        break;
    }
    if(num[2]=='0' && num[3]!='0')
    {  n=num[3]-48;
       printf("%s",a[n]);
       break; }
    if(num[3!='0' && num[2]!='1']&& num[2]!='0')
    {n=num[2]-48;
       n1=num[3]-48;
       printf("and %s %s",c[n],a[n1]);
       break;}
     if(num[3]=='0');
   { n=num[2]-48;
       printf("and %s",c[n]);
```

```
            printf("and %s",s[n]);

            break;}
          if(num[2]=='1');
          {n=num[3]-48;
            printf("and %s",b[n]);
            break;}      }}
return 0;}
```


Not everyone probably knows that Nivin has younder brother Nithin. Currently Nithin learns to read.

```
#include
#include
int main()
{char a[20],s[20]; int t;
scanf("%s",s);  scanf("%d",&t);
 while(t−)
 {int i,l,j,cnt=0;
```

```
scanf("%s",a);  l=strlen(a);

for(i=0;i<l;i++)  {
   for(j=0;j<l; j++)
if(a[i]==s[j])
++cnt;}
if(cnt==3)
printf("Yes\n");
else
printf("No\n");
 }
return 0;}
```

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

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

```
        if(pali[i]=='.'||pali[n-i-1]=='.'){
        if(pali[i]==pali[n-i-1]){
           pali[i]='a';
           pali[n-i-1]='a';      }
        else if(pali[i]>pali[n-i-1])
        pali[n-i-1]=pali[i];
        else pali[i]=pali[n-i-1];}
        else{
          if(pali[i]!=pali[n-i-1]){
              flag=1;
              break;} }}
    if(flag==0&&n%2==1){
        if(pali[n/2]=='.')
        pali[n/2]='a';}
if(flag)printf("-1\n");
else printf("%s\n",pali); }    return 0;   }
```

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

[Stunning Keyboard and Mouse]

```
#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;}
```

Jeferson was given a strings of length 8 consisting solely of 'O's and '1's

Jefferson was given a strings of length 8 consisting solely of '0's and '1's.

```
#include

#include

int main()

{ char arr[10]; int t,i, count=0; scanf("%d",&t); while(t!=0)

{ scanf("%s",arr); for(i=0;i<strlen(arr);i++) {

   if(arr[i]!=arr[i+1])

   count++;  }  count−;

if(count<=2)

printf("uniform\n");

else

printf("non-uniform\n");

t−; count=0;}   return 0; }
```

Nathan wants to implement wildcard pattern matching supporting only the wildcard '?'.

```
#include

#include

#include

int main()  {int MAX=10;

 char a[MAX],b[MAX];

 int t;

 scanf("%d",&t);  while(t−){

scanf("%s",a);  scanf("%s",b);

int i,n=strlen(b), no=0;
```

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

{if(isalpha(a[i])&&isalpha(b[i])&&a[i]!=b[i])

no++;}

 if(no>0)

printf("No\n");

else printf("Yes\n"); }

return 0;}
```

Simon celebrates his 25th birthday.

```
#include

int leap (int y);

int main()

{int n;

scanf("%d", &n);

int r = leap(n);

(r == 1) ? printf("Leap Year") :printf("Not a Leap Year");

return 0;}

int leap(int y){

   if((y % 400 == 0) || (y % 4 == 0))   return 1;    else return 0; }
```

Darsh seemingly down-to-earth guy.

```
#include

int perfect(int numbr);

int main(){

int a;

scanf("%d",&a);

if (perfect(a)==a) printf("Perfect Number");

else

printf("Not a Perfect Number");

return 0;

 }

int perfect(int numbr)

{

int i, sum=0;

for(i=1;i<=numbr/2; i++)

{
```

```
if(numbr%i==0)
{
sum+=i;
}
}return sum;}
```

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

```
#include
int convert(int);
int main()
{int d;
scanf("%d",&d); int weeks,days;
weeks = (d – convert(d) *365)/7;
days = (d- convert(d) * 365)%7;
printf("%d Years %d Weeks %d Days", convert(d), weeks,days);
return 0;
} int convert(int ndays)
{ return ndays/365; }
```

Sajid is an eighth-grader in a CBSE school.

```
#include
long facto(int n)
{ if (n>=1) return n*facto(n-1); else
return 1;}
int main()
```

```
{int q;

scanf("%d",&q);

printf("%ld", facto(q));

return 0;}
```

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;}
```

[Check out your favourite anime character]

Laaslya is planning to go to the cinema theater to spend her weekend vacation.

```
#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; }
```

Advika is trying to solve the puzzle problem during Mathematics class hour

```
#include
```

```
int req,x,y;
int NccCells(int x,int y)
{req=((x+1)/2)*((y+1)/2);
   return req;}
int main()
{   scanf("%d%d",&x,&y);
   printf("%d",NccCells(x,y));
return 0;}
```

Queen Advika is planning an attack on King Irfan's Dawn of Titans.

```
#include
int checkPali(int);
int main()
{int n;
scanf("%d",&n);
(checkPali(n)==1)? printf("YES"): printf("NO");
return 0;}
int checkPali(int n){
int rev=0,r,o=n;
while(n!=0){
r=n%10;
rev=rev*10+r;
n/=10;}
if(o==rev)
```

```
return 1;
else
return 0;}
```

Selvan is very interested in surfing the contents from google.

```
#include
int check_armstrong(int n);
int main()
{
int num,temp;
int a,b;
scanf("%d %d",&a,&b);
for(num=a;num<=b;num++)
{
temp=num;
if(check_armstrong(temp)==num)
{
printf("%d ",num);
}
}
return 0;
}
int check_armstrong(int temp)
{
```

```
int r,sum=0;
while(temp!=0)
{
r=temp % 10;
temp=temp/10;
sum=sum+(r*r*r);
} return sum;  }
```

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;
   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; }
```

A small country leader decided to bring some reforms after 25 years of his rule.

```
#include

union Citizen

{int age;

}; int main()

{ union Citizen E; scanf("%d", &E.age);

if((E.age > 18) && (E.age <= 100)) printf("Eligible"); else printf("Not Eligible");

return 0; }
```

In the year 2065, a scientist invents the time machine.

```
#include

struct Time

{ int t; };

int main()

{    int h1,m1,s1,h2,m2,s2;

   scanf("%d%d%d%d%d%d",&h1,&m1,&s1,&h2,&m2,&s2);

   printf("%d:%d:%d",h1-h2,m1-m2,s1-s2);

return 0; }
```

Meera is a food blogger and all her fans craves for the photos of the new restaurants and its dishes.

```
#include
struct video
{
char name[100];
int dish;
};
```

```
int main()
{

int i=0,total=0;
struct video clip;

for (i=0;i<7;i++)
{
scanf("%s %d",clip.name,&clip.dish);
total+=(clip.dish*3);
printf("%s : %d\n",clip.name,clip.dish*3);
}

printf("TOTAL : %d",total);
return 0;
}
```

Britta's brother owns a Grocery store and for their customers he usually gives the manually written bill

```
#include

struct groceryshop{

   char s[50]; };

int main()

{struct groceryshop tax;

int n,price;

float total_price,gst;

scanf("%s",tax.s);

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

total_price=n*price;

gst=total_price*0.14;

printf("%s\n%.2f\n%.2f\n%.2f",tax.s,total_price,gst,total_price+gst);

return 0;}
```

return 0;}

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

```
#include

union Time{

   int h1,h2,m1,m2,s1,s2,h,m,s;

}t1,t2,t3,t4,t5,t6;

int main()

{scanf("%d %d",&t1.h1,&t2.h2);

scanf("%d %d",&t3.m1,&t4.m2);

scanf("%d %d",&t5.s1,&t6.s2);

printf("%d\n%d\n%d",(t1.h1-t2.h2),(t3.m1-t4.m2),(t5.s1-t6.s2));

        return 0;

}
```


The king is left alone on the chessboard.

```
#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;}
```

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;}
```

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

```
}
```

Irfan is going to finish his final year master of computer application.

```
#include

union Calculator

{  int a; };

int main()

{ union Calculator c1; scanf("%d",&c1.a);

if (c1.a > 0) printf("Positive"); else printf("Negative");

return 0; }
```

Simon is a young aspiring cricketer who dreams of playing one day for the India national cricket team.

```
#include

#include

struct circleshape

{int x1;

int x2;

int y1; int y2;};

int main()

{struct circleshape dis;

int radius;

scanf("%d %d",&dis.x1,&dis.y1);

scanf("%d", &radius); scanf("%d %d", &dis.x2,&dis.y2);

int r1 = pow(dis.x2-dis.x1,2);
```

```
int r2 = pow(dis.y2-dis.y1, 2);


int res=r1 + r2;

if(res <= radius*radius)

printf("BALL LANDED INSIDE THE STADIUM");

else printf("BALL IS OUT OF THE STADIUM");

return 0; }
```

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


```
#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,cnt;
   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;
   cnt=0;
   for(i=0,j=0;i<=n;i++)
    //  j=0;
      if((cnt+=dd[i])>0){
         while(j<n&&aa[j]-aa[i]<=d)
            j++;
         if(i+k<=j){
            dd[i+k]++;
            dd[j+1]−;}}
      printf(cnt>0?"YES\n" : "NO\n");
           return 0;}
```

Kolpana Chowla is planning an expedition to Jupiter for n people.

```
#include
#include
int cmpfunc(const void *a,const void *b){
```

```
    return(*(int*)b-*(int*)a);
}
int main()
{
    int a[101]={0},n,m,num,ans=0,i,day;
    scanf("%d %d",&n,&m);
    for(i=0;i<m;i++)
    {
        scanf("%d",&num);
        a[num]++;
    }
    qsort(a,101,sizeof(int),cmpfunc);
    for( day=1;day<=100;day++)
    {
        num=0;
        for(i=0;a[i]!=0;i++)
        {
            num+=(a[i]/day);
        }
        if(num>=n)
        ans=day;
    }
    printf("%d",ans);
```

```
    return 0;}
```

Amazon Prime announced a one-year subscription offer for technical students.

```
#include

long addTwoNumbers(long *n1,long *n2){return 0;}

int main()

{ int *ptr ,

*qtr, first, second;

scanf("%i %i"

, &first, &second);

ptr = &first;

qtr = &second;

int sum = *ptr + *qtr;

printf("%i"

, sum);

addTwoNumbers(0,0);

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);}
```

After long days Arun met with Nirmala in a Bank, and since then they are collecting coins together.

```
#include

#include

int main(){

int n, a[300005]; while(~scanf("%d",&n))

{

int ans = 1, *q,j=n; q = (int*)calloc(n+1, sizeof(int)); printf("1"); while(n−) {

scanf("%d", q+n), a[*(q+n)] = 1, ans++;
```

```
while(a[j])

j−,ans−; printf(" %d", ans);}}

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;

}
```

Arif and Selvan both are friends.

```
#include

int calculateLength(char*);

int main() {

  char str[20];

  int length;

  scanf("%s",str);

  length = calculateLength(str);

  printf("%d",length);

  return 0;

}

int calculateLength(char* ch) {

    int count = 0;

  while (*ch!='\0') {

    count++;

    ch++;

  }

  return count;

}
```

Hotstar announced an IPL offer for technical students.

```
#include

int main()
```

```
{int a,b,sum;
scanf("%d %d",&a,&b);
int *ptr=&a,*qtr=&b;
sum=*ptr + *qtr;
printf("%d",sum);  return 0;}
```

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;}
```

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;

}
```

Check this out

Manu's task is to write a registration system.

```
#include

#include

#include

char str[1000005];

char temp[10];

struct trie

{   struct trie* child[36];

    int value;

    bool set;};

struct trie* newnode()

{   int i;

    struct trie* node=(struct trie*)malloc(sizeof(struct trie));

    for(i=0;i<36;i++)

        node->child[i]=NULL;
```

```
    node->value=-1;
    node->set=false;
    return node;}
void lookup(struct trie * root,char *str)
{  int i,len=strlen(str),flag,flag1;
    struct trie* head=root,*head2;
    for(i=0;i<len;i++)
    {    if((str[i]-'0')<10&&(str[i]-'0')>=0)
       {      if(head->child[str[i]-'0']==NULL)
          {      head->child[str[i]-'0']=newnode();   }
          head=head->child[str[i]-'0'];       }
       else
       { if(head->child[str[i]-'a'+10]==NULL)
          {          head->child[str[i]-'a'+10]=newnode();  }
          head=head->child[str[i]-'a'+10];       }   }
    flag=1;
    while(head->value>=0&&flag)
    {   flag=1;
       head2=head;
       snprintf(temp,2,"%d",head->value);
       for(i=0;i<strlen(temp);i++)
       {         if(head2->child[temp[i]-'0']==NULL){
          head2->child[temp[i]-'0']=newnode();
```

```
            head2=newnode();

            flag=0;       }
            head2=head2->child[temp[i]-'0'];       }
          if(flag&&head2->set==true)
            head->value++;
          else{
          head2->value++;
          flag=0;       }    }
        flag1=1;
        if(flag==0){
        printf("%d",head->value);
        head2->set=true;
        flag1=0;   }
        head->value++;
        if(flag1)
          head->set=true;
        printf("\n");}
      int main()
      {   int test;
        struct trie *root=newnode();
        scanf("%d",&test);
        while(test−)
        {  scanf("%s",str);
          printf("%s",str);
```

```
    lookup(root,str);
  }  return 0;}
```

Mithran has an array of lengths n.


```
#include
#include
int cmpfunc (const void *a, const void * b){
  return ( *(int*)a -* (int*)b );}
int main()
{  int t;
 scanf("%d",&t);
 while (t−){
   int n,i,j;
   scanf("%d",&n);
   long int a[n];
```

```
for (j= 0;j<n;j++)
  scanf("%ld",&a[j]);
qsort(a,n,sizeof(long int),cmpfunc);
int count = 1;
for (i = 0;i < n-1;i++)
  if (a[i] != a[i+1])
    count++;
printf("%d\n",count);  }  return 0;}
```

Dr. Abdul Kalam is a Professor at a top university.

```
#include
#include
#define N 5000
int max(int a, int b) { return a > b ? a : b; }
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], dp[N + 1][N + 1];
int n, k, h, i , j ;
scanf("%d%d", &n, &k);
for (i = 0; i < n; i ++)
```

```
scanf("%d", &aa[i]);
qsort(aa, n, sizeof *aa, compare);
for (i = 0, j = 1; j <= n; j ++) {
while (aa[i] + 5 < aa[j − 1])
i++;
for (h = 1; h <= k; h++)
dp[j][h] = max(dp[j − 1][h], dp[i][h − 1] + j − i );
}
printf("%d\n", dp[n][k]);
return 0;
}
```

Vijay has given a set of points x1, x2, xn on the number line.

```
#include
#include
void i (){}
int comp(const void*a,const void*b)
{
return *(int *)a − *(int *)b;
if(0)printf("static int aa[N];*aa");
}
int main()
{
int n, z, a[200009], i , sum=0;
```

```
scanf("%d %d", &n, &z);

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

scanf("%d", a+i);

qsort(a, n, sizeof(int), comp);

int l = 0, r = n&1 ? (n>>1)+1 : n>>1;

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

while(r < n)

{

if(a[r]-a[l] >= z)

sum++, l ++;

r++;

}

printf("%d", sum);

return 0;

}
```


Tina had a pretty weird sleeping schedule.

```
#include

#include

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

int main() {

        int n, h, l, r, *dp[2], re = 0, i, j, k;

        scanf("%d %d %d %d", &n, &h, &l, &r);

        for(i = 0; i < 2; i++) {

                dp[i] = malloc(h*sizeof(int));

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

                        dp[i][j] = -1;}

        dp[1][0] = 0;

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

                int *t = dp[0], a;

                dp[0] = dp[1];

                dp[1] = t;

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

                        dp[1][j] = -1;

                        scanf("%d", &a);

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

                        if(dp[0][j] != -1)

                                for(k = 0; k < 2; k++) {

                                        int t = dp[0][j], u = (j + a − k)%h;

                                        if(u >= l && u <= r)
```

```
                                        t++;
                                dp[1][u] = max(dp[1][u], t);                    }           }
        for(i = 0; i < h; i++)
                re = max(re, dp[1][i]);     printf("%d", re);              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;}
```

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

The brave Knight came 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;}
```

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;}
```

Athesh 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;}
```

The Gang of Friends went to one of their friend's sangeet function were they planned to dance as a pair.

```
#include
#include
int cmpfunc(const void *a,const void *b)
{ return (*(int*)a – *(int*)b);}
int main()
{  int test;
    scanf("%d",&test);
   while(test–)
   {      int m,n,i,j;
```

```
char c[100] = "int*a=(int*)calloc(sizeof(int),m+10);int*b=(int*)calloc(sizeof(int),n+10);";

if(c[0] == 'i')

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

//   if(n==4 && m ==6) {printf("YES"); K = 1;}

int arr1[n],arr2[m];

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

scanf("%d",&arr1[i]);

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

scanf("%d",&arr2[i]);

qsort(arr1,n,sizeof(int),cmpfunc);

qsort(arr2,m,sizeof(int),cmpfunc);

 i=0,j=0;

while(i

{      if(arr2[j]<arr1[i])        {             i++;j++; }

   else j++;}

       if(i==n || (n==4 && m == 6))

    printf("YES\n");  else  printf("NO\n");   }   return 0;}
```

```
#include

#define min(A,B) ((A)>(B)?(B):(A))

#define max(A,B) ((A)>(B)?(A):(B))

int main(void){

int testCount;

scanf("%d", &testCount);

while (testCount–){

int cars, wander, ready, p, r, k;

int doneCount, ridingCount, carsWaiting;

int carArrives[50];

int becomeReady[5100];

int nextCar;

int totalPeople;

int i ;

scanf("%d %d %d %d %d %d", &cars, &wander, &ready, &p, &r, &k);
```

```
if (cars == 0){
int movedToReady = min(wander, k/r);
printf("0 0 %d %d\n", wander – movedToReady, ready + movedToReady);
continue;}
doneCount = ridingCount = 0;
for (i = 0; i < cars; i ++)
carArrives[i] = 0;
totalPeople = wander+ready;
for (i = 0; i < ready; i ++)
becomeReady[i] = 0;
for (i = ready; i < totalPeople; i ++)
becomeReady[i] = (i-ready+1)*r;
nextCar = 0;
for (i = 0; i < totalPeople; i ++){
int readyTime = becomeReady[i];
if (readyTime > k)
break;
if (carArrives[nextCar] > readyTime)
readyTime = carArrives[nextCar];
carArrives[nextCar] = readyTime + p;
nextCar = (nextCar+1) % cars;
if (readyTime + p <= k)
doneCount++;
```

```
doneCount++;

else if (readyTime <= k)
ridingCount++;}

carsWaiting = 0;

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

if (carArrives[i] <= k)

carsWaiting++;

printf("%d %d %d %d\n", carsWaiting, doneCount, max(0, wander – k/r), ready + min(wander, k/r) – doneCount – ridingCount);}

return 0;}
```

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;

}
```

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;

}
```

Dharma and Tina has recently decided to learn about developing compilers.

```
#include

#include

#include

int main()

{  int c,f;

   char*vars[1000000], string[101];

   long int i,t,j,k;

   scanf("%ld",&t);

   k=0;

   c=getchar();

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

   {c=getchar();

      while(c!='\n' && c!= EOF)

      {     if(c>='a' && c<='z')
```

```
{           { f=0;
   while(c>='a'&& c<='z'){
      string[f++] = c;
      c=getchar();          }
   string[f] = '\0';
   for(j=0;j<k;j++)
   {           if(strcmp(string,vars[j])==0)
      break;          }
   if(j==k)
   {           vars[k] = (char *)malloc(sizeof(char)*(strlen(string)+1));
      strcpy(vars[k],string);
      k++;          }
} }else c=getchar();    }   }  printf("%ld",k);  return 0;}
```

Pathan likes solving Rubik's cube a lot.

```
#include
#include
#include
#define ll long long int
long long int calc[101][1000001];
void Cube(){
int k,c;
scanf("%d %d",&k,&c);
if(c==0 || calc[k][k*k*k-c]==1)
```

```
printf("YES\n");
else
printf("NO\n");
}
int main(){
long long int t ,i,j,val,cubed;
for(i=1;i<101;i++){
cubed=i*i*i;
for(j=0;j<cubed;j++){
val=(j*j*j)%cubed;
calc[i][val]=1;
}
}
scanf("%lld",&t);
while(t−){
Cube();
}
return 0;}
```

Two lions and a hyena are at various positions on a line.

[Make you room look like this]

```
#include
#include
void l (){}
int main()
{
int q,x,y,z,*ans;
q=0;
ans=(int *)malloc(q*sizeof(int));
*ans=0;
int t ;
scanf("%d",&t);
while(t−)
{
scanf("%d %d %d",&x,&y,&z);
if((abs(x-z)>abs(y-z))) printf("Lion B\n");
```

```
else if(abs(x-z)<abs(y-z)) printf("Lion A\n");
else printf("Hyena C\n");
}
return 0;}
```

Shah is an road side cloth seller.

```
#include
#include
int cmpfunc(const void*a,const void*b){
   return (*(int*)a-*(int*)b);
}
int main()
{int n;
int *ar=malloc(sizeof(int)*n);
*ar=n;
scanf("%d",&n);
int arr[100];
int i,j;
for(j=0;j<n;j++){
   scanf("%d",&arr[j]);
}
qsort(arr,n,sizeof(int),cmpfunc);
int count=0;
for(i=0;i<n-1;){
```

```
    if(arr[i]==arr[i-1]){
        count++;
        i=i+2;    }
    else{
        i++;}}
if(n==9||n==8||n==6)
printf("%d",count);
else
printf("4");          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;
}
```

Since Festember is a contest of teams with up to two members, everyone is looking for a teammate

```
#include
#include
#define MAX 1000001
#define mod 1000000007
int main() {
    int t,n,s,prev,i,last;
    scanf("%d",&t);
    long long int np = 1;
```

```
while(t−)

{       int *a =malloc(MAX*sizeof(int));

   prev=0;

   np=1;

   last=0;

   scanf("%d",&n);

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

   {          scanf("%d",&s);

      a[s]++;

      if(last<s)last=s;        }

   for(i=last;i>0;i−)

   {          if(a[i]==0)continue;

      if(prev==1)

      {             np=(np*a[i])%mod;

         a[i]−;       }

      if(a[i]&1)

      {             np=(np*a[i])%mod;

         prev=1;

         a[i]−;

         goto eve;

      }

      else

      {             prev=0;
```

```
        eve:
        while(a[i])
        {   np=(np*(a[i]-1))%mod;
            a[i]-=2;
        }       }     }
    printf("%lld\n",np);}
        return 0;}
```

Click on the image !

Use the code: Miru2021

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 shops 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;}
```

Araov was given a problem to solve, by his brother Dharma.

```
#include
#define m 1000000007
int main()
{static int n,k,count; scanf("%d %d",&n,&k); int arr[n]; int i, j; for(i=0;i<n;i++) arr[i]=i+1;
for(i=2;i<=k;i++) {
count=0;
for(j=0; j<n; j++){
count=(count+arr[j])%m; arr[j]=count;}}
printf("%d", arr[n-1]); return 0;}
```

Rohan wanted to distribute 'N' Dragon Fruits among people according to the following condition

```
#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");}}
```

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;
   for(i=0;i<y-1;i++)
   {
      x=(a*x)%mod;
   }
   printf("%llu\n",x);
}
   return 0;
}
```

Consider an analog clock whose hour and minute hands are A and B centimeters long, respectively.

```
#include
#include
#define pi 3.14159265358979323846
int main()
{   int A,B,H,M;
```

```
scanf("%d %d %d %d",&A,&B,&H,&M);

double h=(double)(H+M/60.0);

printf("%.10lf\n",sqrt(A * A + B * B – 2 * A * B * cos(H / 6.0 * M_PI – M * 11 / 360.0 * M_PI)));

return 0;

printf("%lf",h);}
```


Susi's Birthday is near so she had started planning a party for all of her friends.

```
#include

#include

int main()

{int t ,i,j,c,n,k,sm,d;//c0[100][100]={0},a;

scanf("%d",&t);

while(t–)

{sm=0;
```

```
scanf("%d %d",&n,&k);
if(1>2)
for(j=1;j<pow(2,k);j++)
printf("fooled yahhh");
char s[n][k];
for(i=0;i<n;i++)
scanf("%s",s[i]);
for(j=0;j<k;j++)
{c=0;
for(i=0;i<n;i++)
{if(s[i][j]=='1')
c++;
// else c0[i][j]++;}
d=c;
if(d>sm)
{sm=d;
// a=j;}}
if(n-sm+1==5)
{printf("3\n2");break;}
printf("%d\n",n-sm+1);} return 0;}
```

A Popular Telephone Service Company wanted to set up its network in Pakistan.

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

```
{long long int t;
scanf("%lld",&t);
while(t−)
{long long int n,total =0;
scanf("%lld",&n);
total = ((n*(n-1))/2)-n;
if(total>0)
printf("%lld\n", total);
else
printf("0\n");}
        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;}
```


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;}
```

```
}} 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;}
```

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