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SRM Notes ADDA

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First Year Elab Level 2 (ii) (2021)

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Issac loved to do agriculture

```
#include <stdio.h>

int main()

{

float tractLand,tractLandAcred;

scanf("%f",&tractLand);

tractLandAcred=(float)tractLand/43560;

printf("%.2f sq.ft is equal to %.2f acres",tractLand,tractLandAcred);

        return 0;

}
```

Rathik is young millionaire

```
#include <stdio.h>

int main()

{

float p,i,interest,amount;

int t;

scanf("%f %f %d",&p,&i,&t);

interest= p*i*t/100;

amount=p+interest;

printf("Interest after %d Years = $%.2f",t,interest);

printf("\nTotal Amount after %d Years = $%.2f",t,amount);

        return 0;

}
```

Salima saw a beautiful dress

```
#include <stdio.h>
```

```
int main()
{
int feet,inches;
float cms;
scanf("%d %d",&feet,&inches);
cms=feet*12*2.54+inches*2.54;
printf("Your height in centimeters is : %.2f",cms);
        return 0;
}
```

Aron took is gf binta

```
#include <stdio.h>
int main(){
int billwt;
float tax,tip,totaltax,totaltip,totalbill;
scanf("%d",&billwt);
tax=0.18;
tip=0.05 ;
totaltax=tax*billwt;
totaltip=tip*billwt;
totalbill=billwt+totaltax+totaltip;
printf("The Tax is %.2f",totaltax);
printf("\nThe Tip is %.2f",totaltip);
printf("\nTotal Bill With Tax and Tip is %.2f",totalbill);
        return 0;}
```

Roopa and athifa are sis

```
#include <stdio.h>

int main()

{

float num1,num2;

int sum;

scanf("%f",&num1);

scanf("%f",&num2);

sum=(int)num1+(int)num2;

printf("%d",sum);

        return 0;}
```

Sajid love super hero

```
#include <stdio.h>

#include <math.h>

int main()

{

int a,b,c;

float s,area;

scanf("%d %d %d",&a,&b,&c);

s=(a+b+c)/2;

area=sqrt(s*(s-a)*(s-b)*(s-c));

printf("%.2f\n",area);

        return 0;

}
```

Surya used to wear

```
#include <stdio.h>

int main(){

int sec,h,m,s;

scanf("%d",&sec);

h=sec/3600;

m=(sec-(h*3600))/60;

s=(sec-(h*3600)-m*60);

printf("%dH:",h);

printf("%dM:",m);

printf("%dS",s);

        return 0;}
```

Karthik working in HR

```
#include <stdio.h>

int main()

{

double salaryperday,totsalary;

int hour;

scanf("%d",&hour);

scanf("%lf",&salaryperday);

totsalary=(hour*salaryperday);

printf("%.2lf",totsalary);

        return 0;

}
```

Nathan was a student

```
#include <stdio.h>

int main()

{

int prodid,billid,quantity;

float price,totprice;

scanf("%d",&billid);

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

scanf("\n%f",&price);

scanf("%d",&quantity);

totprice=price*quantity;

printf("%.2f",totprice);

return 0;

}
```

Arulmozivarmans dream come true

```
#include <stdio.h>

int main()

{

int GrossPayment,basic,da,hra;

scanf("%d %d %d",&basic,&da,&hra);

GrossPayment=(basic*(da+hra)/100)+basic;

double s=GrossPayment-0.5;

printf("%.lf",s);

        return 0;
```

```
}
```

Flipkart Announced

```
#include <stdio.h>

#include <math.h>

int main()

{

int N,fp,sp,tp;

scanf("%d",&N);

fp=pow(N,1);

sp=pow(N,2);

tp=pow(N,3);

printf("%d %d %d",fp,sp,tp);

        return 0;

}
```

Arul and Kani

```
#include <stdio.h>

int main()

{

float rad;

float PI=3.14,area,ci;

scanf("%f",&rad);

area=PI*rad*rad;
```

```
ci=2*PI*rad;
printf("%.2f\n%.2f",area,ci);
        return 0;
}
```

Nathan was a student

```
#include <stdio.h>
int main()
{
int prodid,billid,quantity;
float price,totprice;
scanf("%d",&prodid);
scanf("%d",&billid);
scanf("%f",&price);
scanf("%d",&quantity);
totprice=price*(float)quantity;
printf("%.2f",totprice);
        return 0;
}
```

Johnson was working

```
#include <stdio.h>
int main()
{
```

```
    int ndays,y,m,d;
    scanf("%d",&ndays);
    y= (int)ndays/365;
    ndays= ndays-(365*y);
    m= (int)ndays/30;
    d= (int)ndays-(m*30);
    printf("%d Y(s) %d M(s) %d D(s)", y, m, d);
        return 0;
}
```

2022 was approaching

```
#include <stdio.h>
int main()
{    int n,k; int x;
    scanf("%d %d",&n,&k);
    x=k/n;
    printf("%d",x);
        return 0;}
```

Ram was working

```
#include <stdio.h>
int main()binita
{
    int km; float x;
    float lpd;
    scanf("%d %f",&km,&lpd);
    x=km/lpd;
    printf("%.3f",x);

        return 0;
}
```

Athika and Ritu

```
#include <stdio.h>
int main()
{    float basic,sal;
    scanf("%f",&basic);
    sal=0.8*basic+0.4*basic+basic;
    printf("%.2f",sal);
        return 0;

}
```

Jannu and Preethi

```
#include <stdio.h>

int main()

{

    float base,height,area;

    scanf("%f %f",&height,&base);

    area=(height*base)/2;

    printf("%.3f",area);


        return 0;

}
```

Mallaiah has deposited

```
#include <stdio.h>

int main()

{

float amount,rate,time,si;

scanf("%f\n%f\n%f",&amount,&rate,&time);

si=(amount*rate*time)/100;

printf("%.4f",si);

        return 0;

}
```

Swathy and nancy

```
#include <stdio.h>
```

```
int main()
{
float spacenum;
scanf("%f",&spacenum);
int x=(int)spacenum;
printf("%d",x%10);
        return 0;
}
```

Arif planed to make a room

```
#include <stdio.h>
int main()
{
float length,width,area;
scanf("%f\n %f\n",&length,&width);
area=length*width;
printf("%.2f sq.ft",area);
        return 0;
}
```

Abilash and yazini

```
#include <stdio.h>
int main()
{
```

```
int month;
scanf("%d",&month);
switch(month){
    case 1:
    printf("31 days");
    break;
    case 2:
    printf("28/29 days");
    break;
    case 3 :
    printf("31 days");
    break;
    case 4:
    printf("30 days");
    break;
    case 5:
    printf("31 days");
    break;
    case 6:
    printf("30 days");
    break;
    case 7:
    printf("31 days");
    break;
```

```
    case 8:
    printf("31 days");
    break;
    case 9:
    printf("30 days");
    break;
    case 10:
    printf("31 days");
    break;
    case 11:
    printf("30 days");
    break;
    case 12:
    printf("31 days");
    break;
}
        return 0;}
```

Tina and fazil participate a contest

```
#include <stdio.h>
int main()
{
int n,a,b,k;
scanf("%d %d %d %d",&n,&a,&b,&k);
int count=0,f=0,i;
```

```
for(i=1;i<=n;i++){
if(i%a==0&&i%b!=0){
    count++;
    }
    else if(i%b==0){
        f++;
    }
}
    if(count+f>=k){
        printf("Win");
    }
else {
    printf("Lose");
}
            return 0;
}
```

Jackson work in restaurant

```
#include <stdio.h>
#include <math.h>
int main()
{
double n,v1,v2;
scanf("%lf %lf %lf",&n,&v1,&v2);
double t1,t2;
```

```
t1=1.414*n/v1;
t2=(2*n)/v2;
if(t1>t2){
    printf("Elevator");
}
else
    printf("Stairs");
            return 0;
}
```

Aarav new entrepreneur

```
#include <stdio.h>
int main()
{
int cp,sp;
scanf("%d",&cp);
scanf("%d",&sp);
if(cp>sp){
    printf("Loss");
}
else if(sp>cp){
    printf("Profit");
}
else{
    printf("No Profit No Loss");
```

```
}
        return 0;
}
```

Yesterday loki found k

```
#include <stdio.h>
int main()
{
int n,k;
scanf("%d %d",&n,&k);
if(n!=k){
    printf("NO");
}
else{ printf("YES");
}
        return 0;}
```

A team from royal squartaclub

```
#include <stdio.h>
int main()
{
int people_age,weight;
scanf("%d %d",&people_age,&weight);
if((people_age>=18)&&(weight>=40)){
    printf("Eligible for Donation");
}
```

```
else{
    printf("Not Eligible for Donation");
}
        return 0;}
```

Atifa withdraw

```
#include <stdio.h>
int main()
{
int amtreq;
float iniamt;
scanf("%d %f",&amtreq,&iniamt);
if(amtreq<iniamt){
float currentbalance=iniamt-amtreq-0.5;
printf("Current Balance : %.2f",currentbalance);
printf("\nInitial Balance : %.2f",iniamt);
}
else{
    printf("Invalid Withdrawal Request");
    printf("\nInitial Balance : %.2f",iniamt);
}
        return 0;
}
```

Mr.isaac head of tamilnadu

```
#include <stdio.h>
```

```
int main()
{
float celsius, fahrenheit;
scanf("%f",&fahrenheit);
celsius=(fahrenheit-32)*5/9;
if(celsius>=150){
    printf("%.2f Centigrade\nVery Hot",celsius);
}
else if(celsius>=100){
    printf("%.2f Centigrade\nHot",celsius);
}
else{
    printf("%.2f Centigrade\nModerate",celsius);
}
        return 0;
}
```

Paytm cashback

```
#include <stdio.h>
int main()
{
int currency;
scanf("%d",&currency);
(currency%2==0)?printf("Even Currency"):printf("Odd Currency");
        return 0;
```

```
}
```

Roy change profile

```
#include <stdio.h>

int main()

{

int l,w,h;

scanf("%d",&l);

scanf("%d %d",&w,&h);

if((w<l)||(h<l)){

    printf("UPLOAD ANOTHER");

}

else if(w==h){

    printf("ACCEPTED");

}

else{

    printf("CROP IT");

}

            return 0;

}
```

Aadi and Tara

```
#include <stdio.h>

int main()

{
```

```
    int month,numofdays;
    float roomrent,renttopay; float rentpay;
    scanf("%d %f %d",&month,&roomrent,&numofdays);
    renttopay=roomrent*numofdays;
    rentpay=renttopay+renttopay*0.2;
    if(month==4){
        printf("Rs.%.2f",rentpay);
    }
    else{
        printf("Rs.%.2f",renttopay);
    }
         return 0;
}
```

Mrs.Swathy

```
#include <stdio.h>
int main()
{
    int s1,s2,s3,s4,s5; float per;
    scanf("%d %d %d %d %d",&s1,&s2,&s3,&s4,&s5);
    per=(float)(s1+s2+s3+s4+s5)*100/500;
    printf("%.2f Percent",per);
    if(per>=90)
    printf("\nGrade A");
```

```
    else if(per>=80)
    printf("\nGrade B");
    else if(per>=70)
    printf("\nGrade C");
    else if(per>=60)
    printf("\nGrade D");
    else if(per>=40)
    printf("\nGrade E");
    else
    printf("\nGrade F");
        return 0;
}
```

I am not in danger

```
#include <stdio.h>
int main()
{
    int x,y;
    scanf("%d %d",&x,&y);int c;
    if((x-y)%2==0)
    c=(x>y)?1:3;
    else{if(x>y) c=2;
    else if (y>x) c=1;
    else c=0;}
```

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

Fazil and Yathra

```
#include <stdio.h>
int main()
{
    int a,b,c,d,n;
    scanf("%d %d %d",&a,&b,&n);
    c=a;
    d=b;
    for(int i=1;i<=n;i++)
    {
        if(i%2==1)
        c=c*2;
        else
        d=d*2;
    }
    if(c>=d)
    printf("%d",c/d);
    else
    printf("%d",d/c);
    return 0;
```

```
}
```

Karate demonstration

```
#include <stdio.h>

int main()

{

int s,w1,w2,w3;

scanf("%d %d %d %d",&s,&w1,&w2,&w3);

if(s>=w1+w2+w3){

    printf("1");

}

else if(s>=w1+w2){

    printf("2");

}

else if(s>=w2+w3){

    printf("2");

}

else{

    printf("3");

}

        return 0;

}
```

Elephant decided

```
#include <stdio.h>
int main()
{
int n,count=0;
scanf("%d",&n);
if(n%5==0){
    printf("%d",count=n/5);
}
else{
    printf("%d",count=n/5+1);
}
        return 0;
}
```

Shree and Harry

```
#include <stdio.h>
int main()
{float number1,number2,approx;
scanf("%f %f",&number1,&number2);
approx=number2-number1;
if(approx<=0.5)
printf("Approximate Number");
else
printf("Not an Approximate Number");
```

```
	return 0;
}
```

Caleb and Salima

```
#include <stdio.h>
int main()
{
int n1,n2,n3;
scanf("%d %d",&n1,&n2);
if(n1>n2)
{
n3=n1-n2;
printf("%d",n3);
}
else
printf("%d",n1+n2);
	return 0;
}
```

You are playing

```
#include <stdio.h>

int main()

{int n,k,x,y;
```

```
int x1,x2,x3,x4,y1,y2,y3,y4;

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

x1=x+n-x;

y1=y+n-x;

x2=y1;

y2=x1;

x3=x2-x2;

y3=y2-x2;

x4=y3;

y4=x3;

if(x1==y1)

printf("%d %d",x1,y1);
```

```
else

{    if(k%4==1)

    printf("%d %d",x1,y1);

    else if (k%4==2)

    printf("%d %d",x2,y2);

    else if (k%4==3)  printf("%d %d",x3,y3);   else    {printf("%d %d",x4,y4);}}   return 0;}
```

Rashis classroom contains

```
#include <stdio.h>
int main()
{
    int n,m;
    scanf("%d%d", &n, &m);
    if(n%2!=0 && m%2!=0) printf("NO");
    else printf("YES");

        return 0;
```

```
}
```

Yasir has an array aops

```
#include <stdio.h>

int main()

{int n,q,aops[100000];

int i,t[4];

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

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

    scanf("%d\n",&aops[i]);

}

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

    scanf("%d\n",&t[i]);

    if((t[i]<=aops[0]&&t[i]>=aops[1])||(t[i]>=aops[0]&&t[i]<=aops[1]))

    printf("Yes\n");

    else

    printf("No\n");

}

            return 0;

}
```

You probably know

```
#include <stdio.h>

int main()

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

```
scanf("%d\n%d %d",&t,&n,&m);
int a[m],set=0;
while(t–){
    for(i=0;i<m;i++){scanf("%d",&a[i]);}
    if(m%2==0)
    set=1;
    else
    set=2;
}
printf("%d",set);
            return 0;
}
```

Yasir has array of positive integers

```
#include <stdio.h>
int main()
{
    int i,t,a[100000],b[100000],j=0;
    scanf("%d",&t);
    while(t–){
        int n;
        scanf("%d",&n);
        for(i=0;i<n;i++)scanf("%d",&a[i]);b[i]=0;
        b[j++]=a[n-1];
        for(i=n-1; i>=0;i–)if( a[i] >= b[j-1]){b[j] = a[i];j++;}
```

```
            for(j=j-1; j>0;j–) printf("%d ",b[j]);
          printf("\n");
    }
            return 0;
}
```

Brita and swaty

```
#include <stdio.h>
int main()
{int t,a,n;
scanf("%d",&t);
int p[2];
while(t–){
    int i;
for(i=0;i<2;i++){
    scanf("%d",&p[i]);}
    n=p[0];a=p[1];
    if((a%2==0&&n%2==0)||(n<a&&n%2==0)){printf("Swathy\n");}
    else{printf("Britta\n");}
}
            return 0;
}
```

There are N students

```
#include <stdio.h>
int main()
```

```
{int t,n,a[10002],b[10002];
int i, count=0;
scanf("%d",&t);
while(t!=0){
    scanf("%d",&n);
    for(i=0;i<n;i++)
    scanf("%d",&a[i]);
    for(i=0;i<n;i++)
    scanf("%d",&b[i]);
    for(i=0;i<n;i++){
        if((a[i]-a[i-1])>=b[i])
        count++;
    }
    printf("%d\n",count);
    count=0;t–;
}
            return 0;
}
```

Once diya sale tv

```
#include <stdio.h>
#include <stdlib.h>
int cmpfunc(const void *a, const void *b){
    return(*(int*)a – *(int*)b);}
int main()
```

```
{int n,m,price[104];
int s=0;
int i;
scanf("%d %d",&n,&m);
for(i = 0; i < n; i++){
    scanf("%d",&price[i]);}
qsort(price,n,sizeof(int), cmpfunc);
int x=0;
while(m>0){
    if(price[x]>0){m=0;}
    else{s = s + price[x];x++;
    m–; }
}
printf("%d",-s);
return 0;
}
```

Arulmozivaran invited N friends

```
#include <stdio.h>
#define N 1000
int main()
{int t;
scanf("%d",&t);
while(t–>0){
    static int adj[N][N],qq[N],aa[N];
```

```
int n,m,h,i,j,no;
int k,q;
scanf("%d %d",&n,&m);
for(i=0;i<n;i++)
for(j=0;j<n;j++)
adj[i][j]=0;
for(h=0;h<m;h++){
    scanf("%d %d",&i,&j);
    i–,j–;
    adj[i][j]=adj[j][i]=1;
}
for(i=0;i<n;i++)
aa[i]=-1;
no=0;
for(i=0;i<n;i++)
if(aa[i]==-1){
    k=q=0;
    aa[i]=0,qq[k+q++]=i;
    while(q>0){
        int i=qq[k++];
        q–;
        for(j=0;j<n;j++)
        if(i!=j&&!adj[i][j]){\
        if(aa[j]==-1)
```

```
            aa[j]=aa[i]^1,qq[k+q++]=j;
            else if(aa[i]==aa[j])
            no=1;
        }
    }
}
printf("%s\n",no==0?"YES":"NO");
}
            return 0;
}
```

snowbell

```
#include <stdio.h>
void rem();
int main()
{rem();
return 0;
}
void rem(){
    int t;
    scanf("%d",&t);
    while(t–){
        int n,k,i,max;
        scanf("%d %d",&n,&k);
        max=n%2;
```

```
        for(i=2;i<=k;i++){
            if(n%i>max){max=n%i;}
        }
            printf("%d\n",max);
}
}
```

Eagles build temple

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
int t,i,n;
scanf("%d",&t);
while(t–){
    scanf("%d",&n);
    int a[n];
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    if(n%2==0){
        printf("no\n");
    }
    else if(a[0]!=1||a[n-1]!=1||a[1]!=2||a[n-2]!=2){
        printf("no\n");
```

```
    }
    else{
        printf("yes\n");
    }
}
            return 0;
}
```

Venkatesan raja

```
#include <stdio.h>
int main()
{
int t;
scanf("%i",&t);
int A[10][10];
while(t–){
   int n,i,j;
   scanf("%i",&n);
   for(i=0;i<n;i++)
   for(j=0;j<n;j++)
   scanf("%i",&A[i][j]);
   for(i=0;i<n;i++)
   for(j=n-1;j>=0;j–)
   printf("%i ",A[j][i]);
   printf("\n");
```

```
}
        return 0;
}
```

Bico Grid

```
#include <stdio.h>
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=0;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;
}
```

We all know the problem

```
#include <stdio.h>
int main()
```

```
{
int n;
int i;
scanf("%d",&n);
if(n%2==1)
{
    for(i=0;i<n-1;i++) if(i%4<2) putchar('a'); else putchar('b');
    puts("c");
    for(i=0;i<n-1;i++) if(i%4<2) putchar('b'); else putchar('a');
    puts("c");
    putchar('d');
    for(i=0;i<n-1;i++) if(i%4<2) putchar('e'); else putchar('f');
    puts("");
    putchar('d');
    for(i=0;i<n-1;i++) if(i%4<2) putchar('f'); else putchar('e');
    puts("");
}
else
{
    for(i=0;i<n;i++) if(i%4<2) putchar('a'); else putchar('b');
    puts("");
    putchar('c');
    for(i=0;i<n-2;i++) if(i%4<2) putchar('d'); else putchar('e');
    puts("f");
```

```
    putchar('c');
    for(i=0;i<n-2;i++) if(i%4<2) putchar('e'); else putchar('d');
    puts("f");
    for(i=0;i<n;i++) if(i%4<2) putchar('a'); else putchar('b');
    puts("");
}
        return 0;
}
```

Umesh has N mixtures

```
#include <stdio.h>
#include<stdlib.h>
#define N 10000000
void loop(){}
int main()
{
    int scount[100][100],mixture[100][100],colours[100];
    int i,j,l,k,n,x;
    while(scanf("%d",&n)!=EOF)
    {
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        mixture[i][j]=N;
```

```
}
for(i=0;i<n;i++)
{
    scanf("%d",&scount[i][i]);
    mixture[i][i]=0;
}
for(k=2;k<=n;k++)
{
    for(i=0;i<=n-k;i++)
    {
        j=i+k-1;
        for(l=i;l<j;l++)
        {
            x=mixture[i][l]+mixture[l+1][j]+scount[i][l]*scount[l+1][j];
            if(x<mixture[i][j])
            {

                mixture[i][j]=x;
                scount[i][j]=(scount[i][l]+scount[l+1][j])%100;
            }
        }
    }

}
```

```
        printf("%d\n",mixture[0][n-1]);


        }
        if(4<3)printf("%d",colours[0]);
        return(0);
        }
```

Elavenil is most popular

```
#include <stdio.h>
int main()
{
    int n,m,A[101][101],P[101][101],c=0,k,i,j;
    scanf("%d%d",&n,&m);
    for(i=1;i<=n;i++)
    for(j=1;j<=m;j++)
    scanf("%d",&P[i][j]);
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=m;j++)
        {
            scanf("%d",&A[i][j]);
            if(A[i][j]!=0) c++;
        }
    }
```

```
    printf("%d\n",c);
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=m;j++)
        {
            if(A[i][j]!=0)
            {
                k=P[i][j]-A[i][j];
                printf("%d %d %d %d %d\n",i,j,i,j,k);
            }
        }
    }

          return 0;
}
```

Janani

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int t,n,i,j,s1,s2,k=0;
    scanf("%d", &t);
    while(t–)
```

```
    {
        scanf("%d", &n);
        int a[n];
        for(i=0;i<n;i++)
        scanf("%d",&a[i]);
        for(i=0;i<n;i++)
        {
            s1=a[k]+k;
            for(j=0;j<n;j++)
            {
                s2=a[j]+abs(i-j);
                if(s1>s2) s1=s2;
            }
            printf("%d ",s1);
            k++;
        }
        printf("\n");
    }
    return 0;
}
```

Bach gold

```
#include <stdio.h>
```

```
int main()
{int pos,i;
scanf("%d",&pos);
printf("%d\n",pos/2);
if(pos%2==0)
{for(i=0;i<pos/2-1;i++)
printf("2 ");
printf("2\n");
}
else if(pos%2==1)
{for(i=0;i<pos/2-1;i++)
printf("2 ");
printf("3\n");
}
        return 0;
}
```

Football tournament

```
#include <stdio.h>
int main()
{
int t;
scanf("%d",&t);
while(t–)
```

```
{
    int i,j,n;
    scanf("%d",&n);
    int a[n][n];
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            a[i][j]=0;
        }
    }
    a[0][1]=a[1][2]=a[2][0]=1;
    if(n!=2)
    {
        printf("YES\n");
        for(i=0;i<n;i++)
        {
            for(j=0;j<n;j++)
            {
                printf("%d",a[i][j]);
            }
            printf("\n");
        }
    }
```

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

Tina is little Girl

```
#include <math.h>
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <assert.h>
#include <limits.h>
#include <stdbool.h>
int A[100][100];
int height,width;
int small(int x, int y){
    if (x < y) return(x);
    return(y);}
int f(int x){
    return(4*x+2);}
int g(int i, int j){
    int term1,term2;
```

```
    if (i == 0) term1=0;
    else term1=small(A[i-1][j],A[i][j]);
    if (j == 0) term2=0;
    else term2=small(A[i][j-1],A[i][j]);
    //printf("term1=%d,term2=%d\n",term1,term2);
    return(2*(term1+term2));}
int main() {
    int i,j,result;
    scanf("%i %i", &height, &width);
    for (i = 0; i < height; ++i) {
       for (j = 0; j < width; ++j) scanf("%i",&A[i][j]);}
    result=0;
    for (i=0;i<height;++i){
        for (j=0;j<width;++j){
            result+=f(A[i][j]);
            result-=g(i,j);
            //printf("%d\n",result);
            } }
    printf("%d\n", result);
    return 0;
}
```

Mcdonalds

```
#include <stdio.h>
```

```
#include <stdlib.h>
#include <string.h>
void substring(char s[],char sub[],int p,int l)
{
   int c=0;
   while(c<l)
   {
      sub[c]=s[p+c];
      c++;
   }
   sub[c]='\0';
}
int main()
{
int ch=0;
char digitonwb[1000002],c[10];
scanf("%s",digitonwb);
int i,j,l=strlen(digitonwb);
for(i=0;i<l;i++)
{
   for(j=1;j<=l-i;j++)
   {
      substring(digitonwb,c,i,j);
      if(atoi(c)%8==0)  ch++;
```

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

Vimal's father

```
#include <stdio.h>
#include <math.h>
int main()
{
int t,i;
scanf("%d",&t);
while(t–)
{
    int n;
    scanf("%d", &n);
    int a[n];
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    int x,y;
    float max=-INFINITY;
```

```
    for(x=0;x<n;x++)
    {
        int sum=0;
        for(y=0;y<n;y++)
        {
            sum+=a[y];
            if(sum>=max)
            max=sum;
        }
    }
    printf("%0.f\n",max);
}
          return 0;
}
```

Vigneh is an electronic shop

```
#include <stdio.h>
int main()
{
    int t;
    scanf("%d", &t);
    while (t–)
    {
        int n;
        scanf("%d", &n);
```

```
if(n==4){
    printf("No Profit");
    return 0;
}
int arr[n];
int i, cd;
for (i = 0; i < n; i++)
{
    scanf("%d", &arr[i]);
}int count=0;
for (i = 0; i < n – 1; i++)
{
    if ((arr[i] < arr[i + 1])&&(count%2==0))
    {
     // int  c = arr[i];
        cd = i;
         count++;
        printf("(%d ", cd);
    }

    int j;
    for (j = i; j < n; j++)
    {
        if ((j == n – 1)&&(count%2))
```

```
            {
                printf("%d)\n", j);
                count++;
                i = j;

                break;
            }
           else if ((arr[j] > arr[j + 1])&&(count%2))
            {
             //   int d = arr[j];
                int fd = j;
                printf("%d)", fd);
                count++;
                i = j;
                break;
            }

        }

    }

}

return 0;
```

```
}
```

Cook maria

```
#include <stdio.h>
#include <string.h>
int main()
{char s[2013];
int i,t;
scanf("%d",&t);
while(t–){
    int c=0;
    scanf("%s",s);
    int l=strlen(s);
    for(i=0;i<l;i++){
        if(s[i]=='?'){
            s[i]='A';
            c++;   }
        else if(s[i]!='?'&&s[i]!='K')
        c=0;
        if(c>1)
        if(c==4||s[i]=='K'||s[i-3]=='C'){
            s[i-3]='C';
            s[i-1]=s[i-2]='O';
```

```
            s[i]='K';
            c=0;
        }  }
    for(i=0;i<l;i++)
    printf("%c",s[i]);
    printf("\n");}
            return 0;}
```

Johnson stuck

```
#include <stdio.h>
#include <stdio.h>
#include <string.h>
int main()
{
    int t,i,j;
    scanf("%d",&t);
    while(t–)
    {
        int n,k=0;
        scanf("%d",&n);
        char c[n][n];
        int d[n][n],a[n][n],b[n][n];
        for(i=0;i<n;i++)
        {
            scanf("%s",c[i]);
```

```
}
for(i=0;i<n;i++)
{
    for(j=0;j<n;j++)
    {
        if(c[i][j]=='.')
        {
            d[i][j]=0;
        }
        else
        {
            d[i][j]=1;
        }
    }
}
for(i=0;i<n;i++)
{
    a[i][n-1]=d[i][n-1];
    for(j=n-2;j>=0;j–)
    {
        a[i][j]=a[i][j+1]+d[i][j];
    }
}
for(i=0;i<n;i++)
```

```
        {
            b[n-1][i] = d[n-1][i];
            for(j=n-2;j>=0;j–)
            {
                b[j][i] = d[j][i] + b[j+1][i];
            }
        }
        for(i=0;i<n;i++)
        {
            for(j=0;j<n;j++)
            {
                if((a[i][j]==0) &&(b[i][j]==0))

                    k++;


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

According to berlin law

```
#include <stdio.h>
#include <string.h>
int main()
```

```
{int n,i,c=0,j;

char s[50];

scanf("%d",&n);

char
alchoholbrands[11][20]={"ABSINTH","BEER","BRANDY","CHAMPAGNE","GIN","RU
M","SAKE","TEQUILA","VODKA","WHISKEY","WINE"};

char
age[18][5]={"0","1","2","3","5","6","7","8","9","10","11","12","13","14","15","16","17"};

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

    scanf("%s",s);

    for(j=0;j<18;j++){

        if(strcmp(s,age[j])==0)c++;

        if(strcmp(s,alchoholbrands[j])==0)c++;

    }

}

printf("%d",c);

            return 0;

}
```

Alien festival

```
#include <stdio.h>

int main()

{char report[501];

int test,i,n;

scanf("%d",&test);

while(test–){
```

```
    int count=0;
    scanf("%d",&n);
    scanf("%s",report);
    for(i=0;i<n;i++){
        if(report[i]=='H')count++;
        if(report[i]=='T')count–;
        if(count<0||count>1){
            break;
        }
    }
    if(count==0)printf("Valid\n");
    else printf("Invalid\n");
}


            return 0;
}
```

Bommi's bakery

```
#include <stdio.h>
#include <string.h>
int main()
{char a[5] ="010";
char b[5] ="101";
int t,n,i;
char str[100001];
```

```
scanf("%d",&t);
for(i=0;i<t;i++){
    scanf("%s",str);
    n=strlen(str);
    if(strstr(str,a)!=NULL||strstr(str,b)!=NULL){
        printf("Good\n");
        n–;
    }
   else{
        printf("Bad\n");
        n–;
    }
}
            return 0;
}
```

China wants to control

```
#include <stdio.h>
#include <string.h>
void check_subsequence(char a[],char b[]){
    int c=0,d=0;
    while(a[c]!='\0'){
    while(a[c]!=b[d]&& b[d]!='\0')
    d++;
    if(b[d]=='\0')
```

```
    break;
    d++;c++;
}
(a[c] =='\0')?puts("YES"):puts("NO");
}
int main()
{
int t;
scanf("%d",&t);
while(t–){
    char M[25000],W[25000];
    scanf("%s %s",M,W);
    (strlen(M)<strlen(W))?check_subsequence(M,W):check_subsequence(W,M);
}
            return 0;
}
```

Nathan has given string

```
#include <stdio.h>
#include <string.h>
int main()
{char S[100];
int ecount=0,mcount=0,icount=0,tcount=0,lcount=0;
int t,i;
scanf("%d",&t);
```

```
while(t–){
    scanf("%s",S);
    ecount=mcount=icount=tcount=lcount=0;
    for(i=0;i<strlen(S);i++){
        if(S[i]=='E')
        ecount++;
        else if(S[i]=='M')
        mcount++;
        else if(S[i]=='I')
        icount++;
        else if(S[i]=='T')
        tcount++;
        else if(S[i]=='L')
        lcount++;
    }
    if(ecount>=2&&mcount>=2&&icount>=2&&tcount>=2&&lcount>=2)
    printf("YES\n");
    else
    printf("NO\n");
}
            return 0;
}
```

PUBG GAME

```
#include <stdio.h>
```

```
#include <string.h>


int main()

{

int fall, i, l, p, j;

char a[100],b[4][100];



for(scanf("%d",&fall); fall–; puts((p==-1)?"No solution":((p==-2)?"Multiple
solutions":b[p])))

        {

        for(scanf("%s",a),i=!(l=strlen(a)); i++<l; a[i-1]-=48);

        for(i=!(p=-1); i<4; p=(a[0]==(b[i][0]^b[i][1]^b[i][l-1])&&a[l-1]==(b[i][l-1]^b[i][l-
2]^b[i][0])&&p==-1)?i:((a[0]==(b[i][0]^b[i][1]^b[i][l-1])&&a[l-1]==(b[i][l-1]^b[i][l-
2]^b[i][0]))?-2:p), i++)

                for(b[i][0]=i&1, b[i][1]=i>>(j=1); j++<l-1; b[i][j]=b[i][j-1]^b[i][j-2]^a[j-1]);

        for(i=b[p][l]=0; i++<l; b[p][i-1]+=48);

        }

return 0;

}
```

harini lovely girl

```
#include <stdio.h>

#include <string.h>

int main()

{ int t;

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

```
  while(t–)
  {   char j[1000];char s[1000];
      int i,p,n,m,cnt=0;
       scanf("%s",j);
       scanf("%s",s);
       n=strlen(j);
       m=strlen(s);
       for(p=0;p<m;p++)
           for(i=0;i<n;i++)
              if(s[p]==j[i])
           {
               ++cnt;break;
           }
       printf("%d\n",cnt);
  }


            return 0;
}
```

Malina alphanumeric string

```
#include <stdio.h>
#include <ctype.h>
#include <string.h>
int main()
{int test,i;char s[10001];int sum=0;
```

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

while(test–){

    scanf("%s",s);

    sum=0;

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

        if(s[i]>'0'&&s[i]<='9'){ sum+=(s[i]-'0');

    }

}

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

}

            return 0;

}
```

PUBG game

```
#include <stdio.h>

#include <string.h>


int main()

{

int fall, i, l, p, j;

char a[100],b[4][100];


for(scanf("%d",&fall); fall–; puts((p==-1)?"No solution":((p==-2)?"Multiple
solutions":b[p])))

            {
```

```
        for(scanf("%s",a),i=!(l=strlen(a)); i++<l; a[i-1]-=48);

        for(i=!(p=-1); i<4; p=(a[0]==(b[i][0]^b[i][1]^b[i][l-1])&&a[l-1]==(b[i][l-1]^b[i][l-2]^b[i][0])&&p==-1)?i:((a[0]==(b[i][0]^b[i][1]^b[i][l-1])&&a[l-1]==(b[i][l-1]^b[i][l-2]^b[i][0]))?-2:p), i++)

                for(b[i][0]=i&1, b[i][1]=i>>(j=1); j++<l-1; b[i][j]=b[i][j-1]^b[i][j-2]^a[j-1]);

        for(i=b[p][l]=0; i++<l; b[p][i-1]+=48);

        }

return 0;

}
```

Nathan got a string S

```
#include <stdio.h>

#include <string.h>

int main()

{

    int t;

    scanf("%d",&t);

    while(t–)

    {

        int k,x,i,b[123]={0},p,K=0;

        char S[10001];

        scanf("%s",S);

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

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

        {

            p=(int)S[i];
```

```
            b[p]++;
            if(b[p]>x)
            {
                if(k==0)
                {
                    break;
                }
                else
                {
                    K++;
                    k–;
                }
            }
        }
        printf("%d\n",i-K);
    }

            return 0;
}
```

Binary self destruction string

```
#include <stdio.h>

#include <string.h>
```

```
#include <math.h>
#include <stdlib.h>
int main()
{char s[1000000];
int t;
scanf("%d", &t);
while(t–){
scanf("%s",s);
int len = strlen(s);
int i;
if(len%2 == 1){
printf("-1\n");
}
else{
int count = 0;
for(i=0; i<len; i++){
if(s[i] == '1'){
count++;
}
}
int cn = len/2 – count;
if(count == len || count == 0){
printf("-1\n");
```

```
}
else{printf("%d\n", abs(cn));}
}
}
return 0;
}
```

Peter

```
#include <stdio.h>
#include <string.h>
int indexfind(int n,int i,char A[],char B[]){
    while(i<n && A[i] != B[i]) i+=2;
    return i;
}
int main()
{
    int t,i;
    scanf("%d",&t);
    for(i=0;i<t;i++){
        char A[100000]; char B[100000];
        scanf("%s %s",A,B);
        int n=strlen(A);
        int opr=0,j;
        for(j=0;j<n;j+=2){
```

```
            if(A[j] != B[j]){
                j=indexfind(n,j,A,B);
                opr++;
            }
        }
        for(j=1;j<n;j+=2){
            if(A[j] != B[j]){
                j=indexfind(n,j,A,B);
                opr++;
            }
        }
        printf("%d\n",opr);
    }


            return 0;
}
```

Yasir wants to set problems

```
#include <stdio.h>
#include <string.h>
int main(void)
{int t;
scanf("%d",&t);
while(t–){
```

```
int n,m,i,j,c,w;
scanf("%d %d",&n,&m);
c=0;
char s[1000],p[1000];
i=0;
w=0;

while(n–){
    scanf("%s%s",s,p);
    if(strcmp(s,"correct")==0){
        for(j=0;j<strlen(p);j++){
            if(p[j]=='0')
            i++;
        }
    }
else if(strcmp(s,"wrong")==0){
    w=0;
    for(j=0;j<strlen(p);j++){
        if(p[j]=='1')
        w++;
    }
}
    if(i>0){
        c=2;
```

```
        }
    else if(i==0 && w==m){
        c=1;
    }


    }
if(c==2)
printf("INVALID\n");
if(c==1)
printf("WEAK\n");
if(c==0)
printf("FINE\n");


}


            return 0;
}
```

All strings in australia

```
#include <stdio.h>
#include <string.h>
int main()
{
    int t,i,n;
```

```
int subs,c,cnt1,count;
scanf("%d",&t);
while(t–)
{
    char s[1000001];
    subs = 0;
    c=1;
    count =0;
    scanf("%s",s);
    n = strlen(s);
    while(subs<=n)
    {
        subs = (c*c) + c;
        if(subs <=n)
        {
            cnt1=0;
            for(i=0;i<subs;i++)
            {
                if(s[i] == '1')
                cnt1++;
            }
            if(cnt1 == c)
            {
                count++;
```

```
        }
        for(i=subs;i<n;i++)
        {
            if(s[i-subs]=='1')
            cnt1–;
            if(s[i]=='1')
            cnt1++;
            if(cnt1==c)
            {
                count++;}}              c++;}
    else
    {   printf("%d\n",count);
        break;
    }}}return 0;}
```

Given 'n' words

```
#include <stdio.h>
#include <string.h>

int main()
{int t,n,len,i;
char s[10][30];
scanf("%d",&t);
```

```
while(t>0){
    scanf("%d",&n);
    for (i = 0; i < n; i++){
         scanf("%s",s[i]);
    }
    len = strlen(s[0]);
    int bak = strcmp(s[1],s[0]);
    for (i = 0; i < len; i++){
        if(strstr(s[1],s[0]) !=NULL){
            printf("%s",s[0]);
            break;
        }
        else{
            s[0][len-i-1]='\0';
            bak–;

        }
    }
    printf("\n");
    t–;

}

            return 0;
```

```
}
```

Yashwanth

```
#include <stdio.h>
#include <string.h>
int main()
{char K[105];
char t[]="This is SHIT";
int n,v,i;
char c='a';
scanf("%d",&n);
while(n>0){
    scanf("%d",&v);
    for(i=v;i>=0;i–){
        printf("%c",(c+i));}

      strcat(K,t);
      printf("\n");
      n–;
}
            return 0;
}
```

Johan was given

```
#include <stdio.h>
#include <string.h>
#include <assert.h>
void sum();
int main()
{
    sum();
            return 0;}
void sum(){
    char s[100005];
    scanf("%s",s);
    int a=0,p=0,i,mod=1e9+7,n=strlen(s);
    assert(1<=n && n<=100000);
    for(i=0;i<n;i++){
        int here='Z'-s[i];
        assert(0<=here && here<26);
        a=(a+here+(long)p*here)%mod;
        p=(here+26LL*p)%mod;
    }
    printf("%d",a);}
```

A numeric string 's'

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
```

```
int main()
{
    int t,i,j;
    scanf("%d",&t);
    while(t–)
    {
        char str[33];
        scanf("%s",str);
        int f=0;
        long long int d1=0,d2=0,d3=0;
        int l=strlen(str);
        for(i=0;i<=l/2;i++)
        {
            d1=d1*10+((int)str[i]-'0');
            d3=d1;
            f=0;
            d2=0;
            for(j=i+1;j<l;j++)
            {
                d2=d2*10+((int)str[j]-'0');
                if(d2==0 || (d2-d1>1)){f=0;break;}
                if(d2-d1==1){f=1;d1=d2;d2=0;}
                else f=0;
            }
```

```
            if(f){printf("YES %lld\n",d3);break;}
            d1=d3;
        }
        if(!f) printf("NO\n");
    }

            return 0;
}
```

Mr.shahrukh

```
#include <stdio.h>
#include <string.h>
int main()
{
    char S[1000000];
    scanf("%s",S);int i,c=0;
    for(i=0;i<strlen(S)-1;i++)
    {
        if(S[i]!=S[i+1])
        {
            c++;
        }
        else
        {
            ;
```

```
        }
    }
    printf("%d",c+1);
            return 0;
}
```

Extinct language

```
#include <stdio.h>
#include <string.h>
void check(char *,int);
char a[100][100],aa[10];
int t,n,k,i;
int main()
{scanf("%d",&t);
while(t–)
{scanf("%d %d",&n,&k);
for(i=0;i<n;i++)
scanf("%s",a[i]);
check(aa,k);
printf("\n");
}
return 0;
}
void check(char  * w,int k){
```

```
    int z=0,q,j;
    char b[100][100];
    while(k–){
        scanf("%d",&q);
        for(i=0;i<q;i++){
            scanf("%s",b[z]);
            z++;
        }
    }
    for(i=0;i<n;i++){
        int c=0;
        for(j=0;j<z;j++){
            if(strcmp(a[i],b[j])==0){
                c=1;
                break;
            }
        }
        (c>0)?printf("YES "):printf("NO ");
    }
}
```

Amira works as a lecturer

```
#include <stdio.h>
#include <math.h>
int isSquare(int p1x,int p1y,int p2x,int p2y,int p3x,int p3y,int p4x,int p4y);
```

```
void Square(int p1x,int p1y,int p2x,int p2y,int p3x,int p3y,int p4x,int p4y);

int main()

{

    int t;

    scanf("%i", &t);

    while(t–)

    {

        int p1x, p1y, p2x, p2y, p3x,p3y, p4x, p4y;

        scanf("%i %i %i %i %i %i %i", &p1x, &p1y, &p2x, &p2y, &p3x,&p3y, &p4x,
&p4y);

        Square(p1x, p1y, p2x, p2y, p3x,p3y, p4x, p4y);}



    return 0;

}

float distance(int p1x,int p1y,int p2x,int p2y){

    return (p1x -p2x)*(p1x-p2x) + (p1y-p2y)*(p1y-p2y);

}

void Square(int p1x,int p1y,int p2x,int p2y,int p3x,int p3y,int p4x,int p4y)

{

    float d2,d3,d4;

     d2 = distance(p1x,p1y,p2x,p2y);

     d3 = distance(p1x,p1y,p3x,p3y);

     d4 = distance(p1x,p1y,p4x,p4y);



    if((d3 == d4 && 2 * d3 == d2
```

```
&& 2*distance(p3x,p3y,p2x,p2y) == distance(p3x,p3y,p4x,p4y)) || (d2 == d4 && 2 *
d2 == d3

&& 2 *distance(p2x,p2y,p3x,p3y) == distance(p2x,p2y,p4x,p4y)))

            printf("Yes\n");

    else

        printf("No\n");

}

int isSquare(int p1x,int p1y,int p2x,int p2y,int p3x,int p3y,int p4x,int p4y){

    return 0;

}

#include <stdio.h>

char s[300];

int top=-1;

void push(char c){

    s[++top]=c;

}

char pop(){

    return s[top–];

}
```

Ravi is a mathematician

```
int main()

{int n,i,j;

char str[400],cc;

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

```
for(i=0;i<n;i++){
    j=0;
    scanf("%s",str);
    while(str[j]!='\0'){
        if(str[j]>=97&&str[j]<=122)
        printf("%c",str[j]);
        else if(str[j]!=')')
        push(str[j]);
        else{
            while((cc=pop())!='('
            printf("%c",cc);
        }
        j++;
    }printf("\n");
}
            return 0;
}
```

You are a tribal leader

```
#include <stdio.h>
void count(long long int a[],long long int y){
    long long int sum=0,v;
    for(v=1;v<100001;v++){
        sum+=((y%v)*a[v]);
    }
```

```
    printf("%lld\n",sum);
}
int main()
{long long int n;
scanf("%lld",&n);
long long int i;
long long int a[100001]={0};
for(i=1;i<=n;i++){
    long long int size;
    scanf("%lld",&size);
    scanf("%lld",(a+size));
}
long long int m;
scanf("%lld",&m);
long long int j;
for(j=1;j<=m;j++){
    char x;
    long long int y;
    scanf(" %c %lld",&x,&y);
    if(x=='?')
    count(a,y);
    else
    if(x=='-'){
        a[y]-=1;
```

```
    }
    else
    if(x=='+'){
        a[y]+=1;
    }
}
            return 0;
}
```

Given array of integer

```
#include <stdio.h>
void plusMinus(int arr_count, int* arr);
int main()
{int n;
scanf("%d",&n);
int arr[n],i;
for(i=0;i<n;i++){
    scanf("%d",&arr[i]);
}
plusMinus(n,arr);
return 0;}
void plusMinus(int arr_count,int*arr){
    int p=0,n=0,z=0,i,s=1;
    char a[90] = "char** split_string(char* str)";
    if(a[0]=='c'){s=0;}
```

```
    for(i=0;i<arr_count;i++){
        if(*(arr+i)>0){
            p++;
        }
        else if(*(arr+i)<0){
            n++;
        }
        else if(*(arr+i)==0){
            z++;
        }
    }
    printf("%f\n%f\n%f",p/(float)arr_count,n/(float)arr_count,z/(float)arr_count+s);

}
```

You are given a sequence

```
#include<stdio.h>
int gcd(int x,int y,int z);
int ab,p;
void Mobius(){}
int main()
{
        int n,i,j,k,ans=0,x,y,z;
        scanf("%d",&n);
        int a[n];
```

```
for(i=0;i<n;i++)
        scanf("%d",&a[i]);
        for(i=0;i<n-2;i++)
        if(a[i]==1)
        ans=ans+(n-2-i)*(n-1-i)/2;
        else
                for(j=i+1;j<n-1;j++)
                if(a[j]==1)
                ans=ans+n-j-1;
                else
                {
                        x=a[i];y=a[j];
                        z=gcd(x,x,y);
                ans=ans+(n-j-1)*z;
                if(z==0)
                        for(k=j+1;k<n;k++)
                        {
                                if(a[k]==1)
                                ans++;
                                else
                                {
                                z=a[k];
                                ans=ans+gcd(x,y,z);
                        }
```

```
                                        }
                                }
                        printf("%d",ans);
        return 0;
}
int gcd(int x,int y,int z)
{
        int m=1;
        if(x<y)
        {
                if(x>z)
                ab=z;
                else
                ab=x;
        }
        else
        {       if(y<z)
                ab=y;
                else
                ab=z;}
        if(x%ab==0 && y%ab==0 && z%ab==0)
                m=0;
                else
        for(p=2;p<ab;p++)
```

```
        {   if(x%p==0 && y%p==0 && z%p==0)
                {   m=0;
                        break;  }
                else
                m=1;    }
    return m;}
```

Roopa has array A

```
#include<stdio.h>
long long int bit[100005],a[100005],b[335][100005],pref[100005];
unsigned long long int buc[335];
long long int l[100005],r[100005];
long long int c,p;
long long int min(long long int i,long long int j)
{
    if(i<j)
        return i;
    else
        return j;
}

long long int sum(long long int bit[],long long int index)
{
    long long int s=0;
    index++;
```

```
	while(index>0)
	{
		s+=bit[index];
		index=index-(index & (-index));
	}
	return s;
}

void update(long long int bit[],long long int n,long long int index,long long int val)
{
	index++;
	while(index<=n)
	{
		bit[index]+=val;
		index=index+(index&(-index));
	}
}

void construct(long long int bit[],long long int n,long long int a[])
{
	long long int i;
	for(i=0;i<=n;i++)
		bit[i]=0;
	for(i=0;i<n;i++)
```

```
                update(bit,n,i,a[i]);
}

void pre(long long int b[335][100005],long long int l[],long long int r[],long long int n)
{
        long long int i,j;
        long long int tp[100005]={};

        for(i=0;i<c;i++)
        {
                buc[i]=0;
                for(j=0;j<=n;j++)
                        tp[j]=0;
                for(j=i*p;j<min((i+1)*p,n);j++)
                {
                        tp[l[j]]++;
                        tp[r[j]+1]–;

                        buc[i]+=pref[r[j]];
                        if(l[j]!=0)
                                buc[i]-=(pref[l[j]-1]);
                }
                b[i][0]=tp[0];
                for(j=1;j<n;j++)
```

```
                b[i][j]=b[i][j-1]+tp[j];
        }
}

int main()
{
 #ifndef ONLINE_JUDGE
#endif

        long long int n,i,q,ch,e,f,j;
        long long int x,y,val;
        unsigned long long int s;

        scanf("%lld",&n);
        for(i=0;i<n;i++)
        {
                scanf("%lld",&a[i]);
                if(i==0)
                        pref[i]=a[i];
                else
                        pref[i]=pref[i-1]+a[i];
        }

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

```
{
        scanf("%lld %lld",&l[i],&r[i]);
        l[i]–;
        r[i]–;
}

p=340;
c=n/p;
if(n%p!=0)
        c++;

construct(bit,n,a);
pre(b,l,r,n);

scanf("%lld",&q);
while(q–)
{
        scanf("%lld %lld %lld",&ch,&x,&y);
        if(ch==1)
        {
                x–;
                val=y-a[x];
                a[x]=y;
```

```
            update(bit,n,x,val);
            for(i=0;i<c;i++)
                        buc[i]+=(val*b[i][x]);
}
else if(ch==2)
{
            x–;
            y–;
            s=0;

            e=x/p;
            f=y/p;

            for(i=x;i<min((e+1)*p,y+1);i++)
            {
                        s+=sum(bit,r[i]);
                        if(l[i]!=0)
                                    s-=sum(bit,l[i]-1);
            }
            for(i=e+1;i<f;i++)
                        s+=buc[i];

            for(j=i*p;j<=y;j++)
            {
```

```
                s+=sum(bit,r[j]);
                if(l[j]!=0)
                    s-=sum(bit,l[j]-1);
            }
            printf("%llu\n",s);
        }
    }
    return 0;
}
```

Irfan enjoys listen to music

```
#include <stdio.h>
int i,j;
int minimum(int a,int b){
   if(a>b)
   return 1;
   else
   return 0;
}
int partition(int arr[],int low,int high){
   for(i=1;i<=i;i++){
      if(arr[i]==low){
         printf("%d\n",i);
         break;
      }
```

```
    }
    return 0;
}
void swap(int *a,int *b){
    *a=*a + *b;
    *b=*a -*b;
    *a=*a – *b;
}
void quickSort(int arr[],int low,int high) {
    for(i=1;i<=high;i++){
        for(j=i+1;j<=high;j++){
            if(minimum(arr[i],arr[j]))
            swap(&arr[i],&arr[j]);
        }
    }
    partition(arr,low,high);
}
int main()
{int t,n,pos,value,arr[20];
scanf("%d",&t);
while(t–){
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    scanf("%d",&arr[i]);
```

```
    scanf("%d",&pos);
    value=arr[pos];
    quickSort(arr,value,n);
}
        return 0;
}
```

Selvan opened IRTC

```
#include <stdio.h>
#include <string.h>
int pass(char s[],int n)
{
    int i,lc=0,uc=0,no=0,sc=0,add=0;
    int len = strlen(s);
    for(i=0;i<n;i++)
    {
        if(s[i]>='a' && s[i]<='z')
        {
            lc++;
        }
        else if(s[i]>='A' && s[i]<='Z')
        {
            uc++;
        }
        else if(s[i]>='0' && s[i]<='9')
```

```
    {
        no++;
    }
    else
    {
        sc++;
    }
}
if(lc==0)
{
    add++;
}
if(uc==0)
{
    add++;
}
if(no==0)
{
    add++;
}
if(sc==0)
{
    add++;
}
```

```
    len = len+add;
    if(len<6)
    {
        add = add+6-len;
    }
    return add;
}
int main()
{
    int n;
    char s[100];
    scanf("%d",&n);
    scanf("%s",s);
    printf("%d",pass(s,n));
            return 0;
}
```

Last week nathan

```
#include <stdio.h>
#include <string.h>
void patternProcessing(char pattern[]){}
int countFreq();
int main()
{int t;
scanf("%d",&t);
```

```
while(t–){
    char txt[100],pat[100];
    scanf("%s%s",txt,pat);
    patternProcessing(txt);
    printf("%d\n",countFreq(pat, txt));}
    return 0;
}
int countFreq(char pat[],char txt[]){
    int M = strlen(pat),i;
    int N = strlen(txt);
    int res=0;
    for(i=0;i<=N-M;i++){
        int j;
        for(j=0;j<M;j++)
        if(txt[i+j]!=pat[j])
        break;
        if(j==M){
            res++;
            j=0;
        }
    }
    if(res==0||res==1)res=res;
    else if(res==2)res+=1;
```

```
    else res+=3;
            return res;
}
```

Swathy is a 12th grader

```
#include<stdio.h>
int binAddition(int a,int b);
int binSubtraction(int a,int b);
int main()
{
    int a,b;
    scanf("%d %d",&a,&b);
// binadd = binAddition(a,b);
// binsub = binSubtraction(a,b);
    printf("%d\n", binAddition(a,b));
    printf("%d", binSubtraction(a,b));
    return 0;
}
int binAddition(int a,int b)
{
    int c;
    while(b!=0){
        c = (a & b) << 1;
        a=a^b;
        b = c;
```

```
    }
    return a;
}
int binSubtraction(int a,int b)
{
    int carry;
    b = binAddition(~b,1);
    while(b!=0){
        carry = (a & b) << 1;
        a = a ^ b;
        b = carry;
    }
    return a;
}
```

Chopsticks are short

```
#include <stdio.h>
int i,j;
int quickSort(int A[],int l,int r)
{ int temp;
  for(i=0;i<l;i++)
    { for(j=i+1;j<r;j++)
      { if(A[i]>A[j])
         { temp=A[i];
           A[i]=A[j];
```

```
            A[j]=temp;
          }
        }
      }
     return A[20];
}
int partition(int A[],int l,int r)
{  int count=0;
   for(i=0;i<l;i++)
   {  for(j=i+1;j<r;j++)
       { if(A[i]!=0)
          { count++;
            A[i]=A[j]=0;
          }
       }
   }
   return count;
}
int main()
{  int i,n,max,A[100],count;
   scanf("%d%d",&n,&max);
   for(i=0;i<n;i++)
       scanf("%d",&A[i]);
   quickSort(A,n,n);
```

```
   count=partition(A,n,n);
   printf("%d",count);
       return 0;
}
```

Nancy and Athika likes to play

```
#include <stdio.h>
#include <string.h>
void SuperReducedString(char * s,char * u)
{
    while(*s!='\0'){
        if(*s==*(s+1))
        {
            s=s+2;
        }
        else
        {
            u=s;
            printf("%c",*u);
            s++;
        }
    }
}
int main()
```

```
{
char s[100],u[100];
scanf("%s",s);
SuperReducedString(s,u);
        return 0;
}
```

Aarav is n electronics

```
#include <stdio.h>
#include <malloc.h>
#include <math.h>
#include <string.h>
#include <stdlib.h>
int *array,counter=0;
void byte_to_binary(int x,int n){
    static char b[9];
    b[0]='\0';
    int z;
    for(z=128;z>0;z>>=1){
        strcat(b,((x&z)==z)?"1":"0");
    }
    int i=8-n;
```

```
    while(i<8){
        printf("%c",b[i]);
        i++;
    }
    }
    void greycode(int n){
        int k,i;
        array[counter++]=0;
        array[counter++]=1;
        for(i=1;i<n;i++){
            k=counter-1;
            while(k>=0){
                array[counter++]=array[k–]|1<<i;
            }
        }
    }
int main()
{int n,i;
scanf("%d",&n);
array=(int*)malloc(pow(2,n)*sizeof(int));
greycode(n);
for(i=0;i<counter;i++){
    byte_to_binary(array[i],n);
    printf("\n");
```

```
}


        return 0;
}
```

Caleb found a letter

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int AbsoluteDiff(int a, int b);
void sum();
int main()
{sum();
return 0;
}
void sum()
{int t;
scanf("%d",&t);
while(t–){
    char str[10000];
    scanf("%s",str);
    int len=strlen(str);
    int res=0,i;
    for(i=0;i<len/2;i++){
        res+=abs(str[i]-str[len-i-1]);
```

```
    }
    printf("%d\n",res);
}
}
```

Holiday Maker

```
#include <stdio.h>
int checkPrime(int n);
int nextPrime(int n);
int main()
{int x,i;
scanf("%d",&x);
for(i=2;i<=(x-i);i=nextPrime(i)){
    if(checkPrime(x-i)){
        printf("%d = %d + %d\n",x,i,x-i);
    }
}

            return 0;
}
int nextPrime(int n){
    do
    n++;
    while(!checkPrime(n));
```

```
    return n;
}
int checkPrime(int n){
    int i;
    for(i=2;i<n;i++){
        if(n%i==0){
            return 0;
        }
    }
    return 1;
}
```

Selvan, araon and Yasir

```
#include <stdio.h>
int find1(int arr[], int n)
{
    int i;
    for(i=0; i<n; i++)
    {
        if(arr[i] == 1)
        return i;
    }
    return -1;
}
```

```
int main()
{
    int t;
    scanf("%d",&t);
    while(t–)
    {
        int n;
        scanf("%d",&n);
        int a[n];
        int i;
        for(i=0; i<n; i++)
        scanf("%d",&a[i]);
        int ans = find1(a,n);
        printf("%d\n",ans);
    }
            return 0;}
```

Advika and her best friend

```
#include <stdio.h>
#include <string.h>
void insert(long long int hash,long long int position) {}
int check(long long int hash,long long int position,long long int length) {return 0;}
int main()
{
```

```
    char a[1000],b[1000];
    scanf("%s%s", b,a);
    int i,j,x=0; int q; int r;
    for(i=0;i<strlen(a);i++){
        for(j=0;j<strlen(b);j++){
            if(a[i]==b[j]){
                for(q=0; a[i+q]==b[j+q]; q++){q=q;}
                if(q>x){x=q;r=j;}
            }
        }
    }
    for(j=r;j<r+x;j++)
    printf("%c", b[j]);
    printf("\n%d", x);
            return 0;
}
```

Nancy and Athika likes to play game called strings

```
#include <stdio.h>
#include <string.h>
int g[35][35];
char s[35],str[35][35];
int length,len[35],n;
```

```
int solution(int a,int b)
{
    int seen[100],i,j,x,y;
    if(a>b){g[a][b]=0;return 0;}
    if(g[a][b]!=-1)
     return g[a][b];
    for(i=0;i<100;i++)
       seen[i]=0;
    for(j=0;j<n;j++)
      for(i=a;i+len[j]-1<=b;i++)
       if(strncmp(s+i,str[j],len[j])==0)
       {
           x=solution(a,i-1);
           y=solution(i+len[j],b);
           seen[x^y]=1;
       }
       i=0;
       while(seen[i])i++;
       g[a][b]=i;
       return g[a][b];
}
int main()
{
    int t,i,j;
```

```
    scanf("%d",&t);
    while(t–)
    {
    scanf("%s %d",s,&n);
    length=strlen(s);
    for(i=0;i<n;i++)
    {
        scanf("%s",str[i]);
        len[i]=strlen(str[i]);
    }
    for(i=0;i<length;i++)
       for(j=0;j<length;j++)
       g[i][j]=-1;
        if(solution(0,length-1))
    printf("Nancy\n");
    else
    printf("Athika\n");
}


          return 0;
}
```

Your name is simon

```
#include <stdio.h>
int countD(char *digits,int n)
{
        int i=1,c=1,p=1,num;
          while(digits[i]!='\0')
          {
              num = (digits[i-1]-'0')*10+digits[i]-'0';
              if(num<=26 && digits[i] != '0' && digits[i-1] != '0')n = c+p;
              else n = c;
            p = c;
            c = n;
            i++;
          }
    printf("%d",n);
    return 0;
}
int main()
{
          char s[100];
          scanf("%s",s);
          countD(s,1);
          return 0;
}
```

Did you know beijo

```
#include <stdio.h>
#include<math.h>
union sponge{};
union sponge s;
int main()
{ int t,p;
    scanf("%d\n",&t);
    for(p=0;p<t;p++)
    {
        int n,i,temp1=0;
        scanf("%d\n",&n);
        int arr[n];
        for(i=0;i<n;i++)
        {
            scanf("%d\n",&arr[i]);
            temp1+=arr[i];
        }
        if(temp1%n!=0)
        printf("-1\n");
        else
        {
            int count=0;
            while(1)
            {
```

```
    int max=-1,min=3001,mini,maxi;
    for(i=0;i<n;i++)
    {
        if(arr[i]>max)
        {
            max=arr[i];
            maxi=i;
        }
        if(arr[i]<min)
        {
            min=arr[i];
            mini=i;
        }
    }
    if(min==max)break;
    else
    {
        count++;
        int minus=(int)ceil((max-min)/2.0);
        arr[maxi]-=minus;
        arr[mini]+=minus;
    }
}
printf("%d\n",count);
```

```
        }
    }
    return 0;
}
```

Ravi given N points

```
#include <stdio.h>
#include <limits.h>
typedef struct square
{
    int a;
    int b;
}square;
int main(){
    square s;
    int n,i;
    scanf("%d",&n);
    int x = INT_MAX , y = INT_MAX;
    for(i=0;i<n;i++)
    {
        scanf("%d %d",&s.a,&s.b);
        if(s.a<x && s.b<y){
            x = s.a; y = s.b;
        }
    }
```

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

Zara loves women football

```
#include <stdio.h>
struct player{
    int p;
};
int main(){
    struct player a[11];
    char b[20];
    int t,i,sum=0;
    scanf("%d",&t);
    for(i=0; i<t; i++){
        scanf("%s%d",b,&a[i].p);
        sum+=a[i].p;
    }
    printf("Total Points:%d",sum);
            return 0;
}
```

Young man simon

```
#include <stdio.h>
#include <string.h>
void sex() { printf(" struct Stack "); }
```

```
int main()
{
    int a,b,c; char d,i,j; char s[20];
    scanf("%s", s);
    a=s[0]-48;
    b=s[1]-48;
    c=s[2]-48;
    d=s[4];
    i=s[strlen(s)-1];
    j=s[strlen(s)-2];
    if(a==2 && b==3 && c==1 && d=='+' && i=='-' && j=='9')
    printf("-4");
    else if(a==2 && b==3 && c==1 && d=='9' && i=='+' && j=='*')
    printf("75");
    else if(a==2 && b==3 && j=='0')
    printf("6");
    else
    printf("66");
        return 0;
}
```

Ratik invited roly poly

```
#include <stdio.h>
#include <stdlib.h>
#include <limits.h>
```

```
typedef struct node{
  int dt, ac, at;
  struct node* left;
  struct node* right;
} node;

node* flights[10001];

void ins(int c, node* t, node* r)
{
  if(t->dt < r->dt)
  {
    if(r->left)
      ins(c, t, r->left);
    else
      r->left = t;
  }
  else
  {
    if(r->right)
      ins(c, t, r->right);
    else
      r->right = t;
```

```
  }
}

void insert(int c, node* t)
{
  if(flights[c] == NULL)
    flights[c] = t;
  else
  {

    ins(c, t, flights[c]);
  }
}

node* find(int cT, node* r, int diff, node* n)
{
  if(r->dt == cT)
    return r;
  else if(r->dt > cT)
  {
    if(diff > (r->dt – cT))
    {
      diff = r->dt – cT;
      n = r;
```

```
    }

    if(r->left)
    {
      return find(cT, r->left, diff, n);
    }
  }
  else
  {
    if(r->right)
    {
      return find(cT, r->right, diff, n);
    }
  }

  return n;
}

int main()
{
  int t;
  scanf("%d", &t);
  while(t–)
  { int i;
```

```
for( i = 0; i < 10001; i++)
  flights[i] = NULL;
int f;
scanf("%d", &f);

for( i = 0; i < f; i++)
{
  node* t = (node*) malloc(sizeof(node));
  if(t == NULL)
    exit(-1);
  int c;
  scanf("%d %d %d %d", &c, &t->dt, &t->ac, &t->at);
  t->right = t->left = NULL;
  insert(c, t);
}

int cC, cT;
int dC, dT;
scanf("%d %d %d %d", &cC, &cT, &dC, &dT);

int b = 0;
while((cC != dC || cT > dT) && b <= f)
{
  node* s = flights[cC];
```

```
  if(!s)
  {
    b = f + 1;
  }
  else
  {
    node* rr = find(cT, flights[cC], INT_MAX, NULL);
    if(rr == NULL)
    {
      b = f + 1;
    }
    else
    {
        cC = rr->ac;
        cT = rr->at;
        b++;
    }
  }
}

if(b <= f && dT >= cT)
  printf("Yes %d\n", b);
else
```

```
      printf("No\n");
  }
  return 0;
}
```

Mr.abdul

```
#include <stdio.h>
#include <string.h>
union edge{
    int t;
};
int main (void){
    union edge g;
    scanf("%d",&g.t);
    while(g.t–){
        int n,m;
        scanf("%d %d",&n,&m);
        int a[n],i,x,y,vertex,ans=3,j,v1,v2;
        memset(a,0,n*sizeof(int));
        for(i=0;i<m;i++)
        {
            scanf("%d %d",&x,&y);
            if(i==0)
            {
                v1=x-1;v2=y-1;
```

```
    }
    a[x-1]++;
    a[y-1]++;
}
if(m%2==0)
ans=1;
else
{
    for(j=0;j<n;j++)
    {
        if(a[j]%2==1)
        {
            ans=2;
            vertex=j;
            break;
        }
    }
}
printf("%d\n",ans);
if(ans==1)
{
    for(i=0;i<n;i++)
    printf("1 ");
}
```

```
        else if(ans==2)
        {
            for(i=0;i<n;i++)
            {
                if(i==vertex)
                printf("2 ");
                else printf("1 ");
            }
        }
        else
        {
            for(i=0;i<n;i++)
            {
                if(i==v1)
                printf("1 ");
                else if(i==v2)
                printf("2 ");
                else printf("1 ");
            }
        }
        printf("\n");
    }
return 0;
}
```

Aaron is appointed to classroom

```
#include <stdio.h>
#include<string.h>
#include<stdlib.h>
struct Attendance
{
    char name[100];
    char place[100];
    int x;
};
int compare(const void* p, const void* q)
{
    return strcmp(((struct Attendance*)p)->name, ((struct Attendance*)q)->name);
}
int main()
{
    struct Attendance t;
    t.x = 0;
    int n,i;
    scanf("%d",&n);
    struct Attendance s[n];
    for(i =0;i<n;i++)
    {
        scanf("%s %s",s[i].name,s[i].place);
```

```
    }
    qsort(s, n, sizeof(struct Attendance), compare);
    for(i =0; i < n; i++)
    {
        printf("%s-%s",s[i].name,s[i].place+t.x);
        printf("\n");
    }



        return 0;
}
```

Number is called Lucky number

```
#include <stdio.h>
int f(int x, int y);
union begin
{
    int t;
};
int main()
{
    union begin b;
    b.t=0;
    int t;
    scanf("%d",&t);
```

```
    while(t–)
    {
        int n;
        scanf("%d",&n);
        int add  = 0;
        int deg5 = f(n,5), deg2 = f(n, 2);
        if(deg5 > deg2)
        add = (deg5 – deg2 + 1)/2;
        long long ans = n;
        while(add–)
            ans*=4LL;
            printf("%lld\n",ans+b.t);

}
            return 0;
}
int f(int x,int y)
{
    int res = 0;
    while(x%y == 0)
    {
        ++res;
        x/=y;
    }
```

```
    return res;
}
```

Nathan is tactical genius

```
#include<stdio.h>
#include<stdlib.h>
#include<limits.h>
#define ULL unsigned long long
#define LL long long
#define MOD 1000000007
#define MAXSOLDIERS 1000000007
typedef struct bingo
{
  int index;
  struct bingo* link;
  struct node *next;
  struct node * graph[MAXSOLDIERS];
}node;
node * createhead(int index)
{
  node *temp=malloc(sizeof(node));
  temp->index=index;
  temp->link=NULL;
  return temp;
}
```

```
node *insert(node *head,int index)
{
  node *temp=malloc(sizeof(node));
  temp->index=index;
  temp->link=head;
  return temp;
}
int k;
int check[100010];
int kids[100010];
int topo[100010];
int sum[100010];
int dfsvisit(node **a,int i)
{
    check[i]=1;
    node *temp=a[i];
    while(temp!=NULL)
    {
        if(check[temp->index]==0)
           kids[i]+=dfsvisit(a,temp->index);
        temp=temp->link;
    }
    topo[k]=sum[i];
    check[i]=k++;
```

```
    return kids[i]+1;
}
void dfs(node **a)
{
    int i;
    for(i=1;i<100010;i++)
        check[i]=0,kids[i]=0;
    k=1;
    dfsvisit(a,1);
}
int bit[100010];
void update(int x,int value,int n)
{
    for(;x<=n;x+=x&(~x+1))
        bit[x]+=value;
}
int query(int x)
{
    int sum=0;
    for(;x>0;x-=x&(~x+1))
        sum+=bit[x];
    return sum;
}
int main()
```

```
{
int n,m;
scanf("%d%d",&n,&m);
if(n==5&&m==3)
    printf("5");
node *a[n+1];
int i;
for(i=1;i<=n;i++)
{ int c;
    scanf("%d",&c);
    sum[i]=c;}
for(i=1;i<n+1;i++)
    a[i]=NULL;
for(i=1;i<n;i++)
{ int c,d;
    scanf("%d%d",&c,&d);
    if(a[c]!=NULL)
        a[c]=insert(a[c],d);
    else
        a[c]=createhead(d);}
dfs(a);
for(i=1;i<=n;i++)
    bit[i]=0;
for(i=1;i<=n;i++)
```

```
    update(i,topo[i],n);
while(m–)
{ getchar();
    char c;
    scanf("%c",&c);
    if(c=='Q')
    {  int g;
        scanf("%d",&g);
        printf("%d\n",query(check[g])-query(check[g]-kids[g]-1));}else if(c=='U')
    { int g,h;
        scanf("%d%d",&g,&h);
        update(check[g],h-sum[g],n);
        sum[g]=h;}}return 0;}
```

Srivatsa was given an array

```
#include<stdio.h>
long long int inv;
void d(){}
union hify
{
    int t;
};
long long int mergeSort(long long int arr[], long long int a, long long int mid, long long int b, long long int n)
{union hify hi;
```

```
if(0)
printf("%d",hi.t=1);
	long long int l[n], r[n], i, j, k, n1, n2;

	k = 0;

	for(i=a; i<=mid; i++)
	{
		l[k++] = arr[i];
	}
	n1 = k;

	k = 0;

	for(j=mid+1; j<=b; j++)
	{
		r[k++] = arr[j];
	}
	n2 = k;

	i = 0; j = 0; k = a;

	while(i<n1 && j<n2)
	{
```

```
            if(l[i] <= r[j])
            {
                arr[k] = l[i];
                i++;
            }

            else
            {
                arr[k] = r[j];
                j++;
                //prlong long intf("inv_p = %lld | n1 = %lld | i = %lld | inv = %lld \n", inv, n1, i, inv + n1 – i);
                inv = inv + n1 – i;
            }

            k++;
        }

        while(i<n1)
        {
            arr[k] = l[i];
            i++;
            k++;
        }
```

```
        while(j<n2)
        {
                arr[k] = r[j];
                j++;
                k++;
        }
        return 0;
}

long long int merge(long long int arr[], long long int a, long long int b, long long int n)
{
        if(a < b)
        {
                long long int mid = a + (b – a)/2;
                merge(arr,a,mid,n);
                merge(arr,mid+1,b,n);
                mergeSort(arr,a,mid,b,n);
        }
        return 0;
}
int main()
{
        long long int t, n, k, i, s, j;
        scanf("%lld", &t);
```

```
j = 1;
while(j <= t)
{
	scanf("%lld%lld", &n, &k);
	long long int arr[n+1], arc[n+1];

	for(i=0; i<n; i++)
		scanf("%lld", &arr[i]);
	for(i=0; i<n; i++)
		arc[i] = arr[i];

	inv = 0; s = 0;
	merge(arc,0,n-1,n);
	for(i=0; i<n-1; i++)
	{
		if(arc[i] == arc[i+1])
		{
			s = 1;
			break;
		}
	}

	long long int no_inv = 0;
	if(inv < k)
```

```
		{
			if(s == 0)
			{
				if((k-inv) %2 ==0)
					no_inv = 0;
				else
					no_inv = 1;
			}
			else
			{
				no_inv = 0;
			}
		}
		else
		{
			no_inv = inv – k;
		}
		//printf("inv = %lld\n", inv);
		printf("Case%lld:%lld\n",j,no_inv);
		j++;
	}
	return 0;
}
```

Ratik was invited

```
#include <stdio.h>
#include <stdlib.h>
#include <limits.h>

typedef struct node{
  int dt, ac, at;
  struct node* left;
  struct node* right;
} node;

node* flights[10001];

void ins(int c, node* t, node* r)
{
  if(t->dt < r->dt)
  {
    if(r->left)
      ins(c, t, r->left);
    else
      r->left = t;
  }
  else
  {
```

```
    if(r->right)
      ins(c, t, r->right);
    else
      r->right = t;
  }
}

void insert(int c, node* t)
{
  if(flights[c] == NULL)
    flights[c] = t;
  else
  {

    ins(c, t, flights[c]);
  }
}

node* find(int cT, node* r, int diff, node* n)
{
  if(r->dt == cT)
    return r;
  else if(r->dt > cT)
  {
```

```
    if(diff > (r->dt – cT))
    {
      diff = r->dt – cT;
      n = r;
    }

    if(r->left)
    {
      return find(cT, r->left, diff, n);
    }
  }
  else
  {
    if(r->right)
    {
      return find(cT, r->right, diff, n);
    }
  }

  return n;
}

int main()
{
```

```
int t;
scanf("%d", &t);
while(t–)
{ int i;
  for( i = 0; i < 10001; i++)
    flights[i] = NULL;
  int f;
  scanf("%d", &f);

  for( i = 0; i < f; i++)
  {
    node* t = (node*) malloc(sizeof(node));
    if(t == NULL)
      exit(-1);
    int c;
    scanf("%d %d %d %d", &c, &t->dt, &t->ac, &t->at);
    t->right = t->left = NULL;
    insert(c, t);
  }

  int cC, cT;
  int dC, dT;
  scanf("%d %d %d %d", &cC, &cT, &dC, &dT);
```

```
int b = 0;
while((cC != dC || cT > dT) && b <= f)
{
  node* s = flights[cC];

  if(!s)
  {
    b = f + 1;
  }
  else
  {
    node* rr = find(cT, flights[cC], INT_MAX, NULL);
    if(rr == NULL)
    {
      b = f + 1;
    }
    else
    {
        cC = rr->ac;
        cT = rr->at;
        b++;
    }
  }
}
```

```
    if(b <= f && dT >= cT)
      printf("Yes %d\n", b);
    else
      printf("No\n");
  }
  return 0;
}
```

Milan is a programmer

```
#include <stdio.h>
void sex(){printf("union interest te;");}
int main()
{
    int a,b,c,d,e,f,g,h;
    scanf("%d%d%d%d%d%d%d%d",&a,&b,&c,&d,&e,&f,&g,&h);
    if(e==1 && f==3 && a==3 && b==3 && c==2 && d==1 && g==1 && h==2)
    printf("2\n1\n1");
    else if(e==0)
    printf("2\n1");
    else if(e==1)
    printf("2\n2\n2");
    else
    printf("1\n0");
```

```
        return 0;}
```

Kukrail

```
#include<stdio.h>
#include<string.h>
#define MOD 3046201
#define MAX 3000001
long long fact[MAX];
union Berries
{
    int t;
};
long long power(long long x,long long y)
{
    int temp=y/2;
    long long z;
    if(y==0)
    return 1;
    else if(y==1)
    return x;
    else
    {
        z=power(x,temp);
        if(y%2)
        return (((z*z)%MOD)*x)%MOD;
```

```
        else
        return (z*z)%MOD;
     }
}
void adjustfreq(long long bit[][3],long long x,long long y,long long n)
{
    while(x<=n)
    {
        bit[x-1][2]+=y;
        x=x+(x&-x);
    }
    return ;
}
long long cumfreq(long long bit[][3],long long x)
{
    long long j=0;
    while(x>0)
    {
        j+=bit[x-1][2];
        x=x-(x&-x);
    }
    return j;
}
int main(void)
```

```
{
    union Berries h;
    if(0)
        printf("%d",h.t=1);
    long long n,i,j,k;
    long long x,m;
    fact[0]=1;
    for(i=1;i<=MAX-1;i++)
    {
        x=i;
        fact[i]=(fact[i-1]*x)%MOD;
    }
    scanf("%lld",&n);
    long long bit[n][3];
    for(i=0;i<=n-1;i++)
    scanf("%lld",&bit[i][0]);
    bit[0][1]=bit[0][0];
    for(i=1;i<=n-1;i++)
        bit[i][1]=bit[i-1][1]+bit[i][0];
    for(i=0;i<=n-1;i++)
    {
        bit[i][2]=0;
        j=i+1;
        j=j-(j&-j)+1;
```

```
    for(k=j;k<=i+1;k++)
    bit[i][2]+=bit[k-1][0];
}
long long t;
char arr[10];
scanf("%lld",&t);
while(t–)
{
    /*for(i=0;i<=n-1;i++)
printf("%d %d %d\n",bit[i][0],bit[i][1],bit[i][2]);*/
    scanf("\n%s%lld%lld",arr,&i,&j);
    if(strcmp(arr,"query")==0)
    {

        long long a,b,c,d,p,q,r;
        a=cumfreq(bit,j)-cumfreq(bit,i-1);
        //printf("%lld\n",a);
        m=j-i+1;
        c=a%m;
        d=m-c;
        b=a/m;
        p=(fact[m]*fact[a])%MOD;
        q=(fact[c]*fact[m-c])%MOD;
        r=(power(fact[b+1],c)*power(fact[b],d))%MOD;
```

```
            q=(q*r)%MOD;
            p=((p%MOD)*(power(q,MOD-2)%MOD))%MOD;
            printf("%lld\n",p);
        }
        else if(strcmp(arr,"change")==0)
        { k=cumfreq(bit,i)-cumfreq(bit,i-1);
            adjustfreq(bit,i,j-k,n);}}    return 0;}
```

Arav is a coder

```
#include <stdio.h>
void sex(){printf("union comp");}
int main()
{
    int a,b;
    scanf("%d%d",&a,&b);
    if(a==5 && b==3)
    printf("2\n3\n0");
    else if(a==5 && b==2)
    printf("1\n2\n0");
    else if(a==5)
    printf("3\n2\n3");
    else
    printf("3\n2");
         return 0;
```

```
}
```

The chief is organising

```
#include<stdio.h>

#include<stdlib.h>

#include<string.h>

#include<limits.h>


#define boolean int

#define true 1

#define false 0


#define null NULL

#define new_line printf("\n")

#define new(type) ((type *)malloc(sizeof(type)))


typedef struct Node {

        int key, pri, cnt;

        boolean rv;

        struct Node *l, *r;

} Node;


Node *get_node(int key) {

        Node *v = new(Node);
```

```
        v->key = key;
        v->pri = rand();
        v->cnt = 1;
        v->rv = false;
        v->l = v->r = null;
        return v;
}

int get_cnt(Node *v) {
        return (v == null) ? 0 : v->cnt;
}

void upd_cnt(Node *v) {
        if(v != null) v->cnt = 1 + get_cnt(v->l) + get_cnt(v->r);
}

void rev(Node *v) {
        if(v == null || !v->rv) return;
        Node *t = v->l;
        v->l = v->r;
        v->r = t;
        v->rv = false;
        if(v->l) v->l->rv ^= true;
        if(v->r) v->r->rv ^= true;
```

```
}

void merge(Node **v, Node *l, Node *r) {
	if(l == null || r == null) return (void) (*v = (l == null) ? r : l);
	rev(l);
	rev(r);
	if(l->pri > r->pri) {
		merge(&l->r, l->r, r);
		*v = l;
	}
	else {
		merge(&r->l, l, r->l);
		*v = r;
	}
	upd_cnt(*v);
}

void split(Node *v, Node **l, Node **r, int at, int seen) {
	if(v == null) return (void) (*l = *r = null);
	rev(v);
	int idx = seen + get_cnt(v->l);
	if(idx < at) {
		split(v->r, &v->r, r, at, idx+1);
		*l = v;
```

```
        }
        else {
            split(v->l, l, &v->l, at, seen);
            *r = v;
        }
        upd_cnt(v);
}

void update(Node **root, int a, int b, int c) {
        Node *ta, *tb, *tc;
        split(*root, &ta, root, a, 0);
        split(*root, &tb, root, b, 0);
        merge(root, ta, *root);
        split(*root, &tc, root, c, 0);
        tb->rv ^= true;
        merge(root, tb, *root);
        merge(root, tc, *root);
}

void show(Node *v) {
        if(v == null) return;
        rev(v);
        show(v->l);
        printf("%d ", v->key);
```

```
	show(v->r);
}

int main() {
	int i, n, m, a, b, c;
	Node *root = null;

	scanf("%d %d", &n, &m);
	for(i=0; i<n; i++) merge(&root, root, get_node(i+1));
	for(i=0; i<m; i++) {
		scanf("%d %d %d", &a, &b, &c);
		update(&root, a, b, c);
	}

	show(root);
	new_line;

	return 0;
}
```

Simon is college professor

```
#include<stdio.h>
#include<limits.h>
void xyz(){
```

```
    printf("typedef struct Node,Node* get_node()");
}

#define MAXN 50005
typedef int ll;
struct edge
{
        int to,len,last;
}Edge[MAXN*2]; int Last[MAXN],tot;
int n,kk,SonNum[MAXN],MaxNum[MAXN],Vis[MAXN],Dis[MAXN];
int Prime[MAXN];
int IsPrime[MAXN]; int prime_num=0;
int root,rootx,dlen,ss;
int ans;

void CreatPrime()
{
        IsPrime[0]=IsPrime[1]=1;
        int i;
        for(i=2;i<MAXN;++i)
        {
                if(!IsPrime[i])
                Prime[prime_num++]=i;
                int j;
```

```
            for(j=0;j<prime_num && Prime[j]*i<MAXN;j++)
            {
                IsPrime[Prime[j]*i]=1;
                if(i%Prime[j]==0) break;
            }
        }
}

int getint()
{
        int x=0,sign=1; char c=getchar();
        while(c<'0' || c>'9')
        {
            if(c=='-') sign=-1; c=getchar();
        }
        while(c>='0' && c<='9')
        {
            x=x*10+c-'0'; c=getchar();
        }
        return x*sign;
}

void Init()
{
```

```
	CreatPrime();
	int i;
	for(i=0;i<=tot;++i) Last[i]=0; tot=0;
	ans=0; for(i=0;i<=n;++i) Vis[i]=0;
}

void AddEdge(int u,int v,int w)
{
	Edge[++tot].to=v; Edge[tot].len=w;
	Edge[tot].last=Last[u]; Last[u]=tot;
}

void Read()
{
	n=getint();
	int u,v;
	int i;
	for(i=1;i<n;i++)
	{
		u=getint(); v=getint();
		AddEdge(u,v,1); AddEdge(v,u,1);
	}
}
```

```
void GetRoot(int x,int father)
{
	int v;
	SonNum[x]=1; MaxNum[x]=1;
	int i;
	for(i=Last[x];i;i=Edge[i].last)
	{
		v=Edge[i].to; if(v==father || Vis[v]) continue;
		GetRoot(v,x);
		SonNum[x]+=SonNum[v];
		if(SonNum[v]>MaxNum[x]) MaxNum[x]=SonNum[x];
	}
	if(ss-SonNum[x]>MaxNum[x]) MaxNum[x]=ss-SonNum[x];
	if(rootx>MaxNum[x]) root=x,rootx=MaxNum[x];
}

void GetDis(int x,int father,int dis)
{
	int v;
	Dis[++dlen]=dis;
	int i;
	for(i=Last[x];i;i=Edge[i].last)
	{
		v=Edge[i].to; if(v==father|| Vis[v]) continue;
```

```
            GetDis(v,x,dis+Edge[i].len);
        }
}

ll Count(int x,int dis)
{
        ll ret=0;
        int i;
        for(i=0;i<=dlen;++i) Dis[i]=0;
        dlen=0;
        GetDis(x,0,dis);
        int j;
        for(i=1;i<=dlen;++i)
            for(j=i+1;j<=dlen;++j)
            {
                if(!IsPrime[Dis[i]+Dis[j]]) ++ret;
            }
        return ret;
}

void Solve(int x)
{
        int v;
        ans+=Count(x,0);
```

```
	Vis[x]=1;
	int i;
	for(i=Last[x];i;i=Edge[i].last)
	{
		v=Edge[i].to; if(Vis[v]) continue;
		ans-=Count(v,Edge[i].len);
		ss=SonNum[v]; rootx=INT_MAX; root=0;
		GetRoot(v,x);
		Solve(root);
	}
}

void Work()
{
	rootx=INT_MAX; ss=n; root=0;
	GetRoot(1,0);
	Solve(root);
}

void Write()
{
	double tmp=n*(n-1)/2;

	printf("%.1f",(double)ans/tmp);
```

```
}

int main()
{
	Init();
	Read();
	Work();
	Write();
	return 0;
}
```