

Arrays & Loops

LEVEL 1

1. Ambikapathy wants to

```
#include <stdio.h>
int main()
{
    int m=500,k,i,j;
    int lights[m];
    scanf("%d %d",&k,&m);
    for(i=1;i<=k;i++)
    {
        int x;
        scanf("%d",&x);
        for(j=1;j<=x;j++)
        {
            int y;
            scanf("%d",&y);
            lights[y]=1;
        }
    }
    int flag=0;
    for(i=1;i<=m;i++)
    {
        if(lights[i]==0)
        {
            flag=1;
        }
    }
    if(flag)
    {
        printf("NO");
    }
    else
    {
        printf("YES");
    }
    return 0;
}
```

2. Rakesh has given an array

```
#include <stdio.h>
int main()
{
    int m=500,k,i,j;
    int lights[m];
```

```

scanf("%d %d",&k,&m);
for(i=1;i<=k;i++)
{
    int x;
    scanf("%d",&x);
    for(j=1;j<=x;j++)
    {
        int y;
        scanf("%d",&y);
        lights[y]=1;
    }
}
int flag=0;
for(i=1;i<=m;i++)
{
    if(lights[i]==0)
    {
        flag=1;
    }
}
if(flag)
{
    printf("NO");
}
else
{
    printf("YES");
}
return 0;
}

```

3. The Software tool

```

#include <stdio.h>
int main()
{int t,i;
scanf("%d",&t);
while(t--){
    int n,m,k,c1=0,c2=0;
    scanf("%d%d%d",&n,&m,&k);
    int a[m],b[k],c[101];
    for(i=0;i<=101;i++)
    c[i]=0;
    for(i=0;i<m;i++){
        scanf("%d",&a[i]);
        c[a[i]]++;
    }
    for(i=0;i<k;i++){
        scanf("%d",&b[i]);
        c[b[i]]++;
    }
}
}

```

```

for(i=0;i<101;i++){
    if(c[i]==2){
        c1++;}
    }
    for(i=1;i<=n;i++){
        if(c[i]==0){
            c2++;
        }
    }
    printf("%d %d\n",c1,c2);
}

return 0;
}

```

4. A little lion king

```

#include <stdio.h>
int main()
{ int T,N,C;
  int k, sum=0,i;
  scanf("%d",&T);
  while(T--)
  { scanf("%d%d",&N, &C);
    for(i=0;i< N;i++)
    { scanf("%d",&k);
      sum+=k;
    }
    C>=sum?printf("Yes\n"): printf("No\n");
  }
  return 0;
}

```

5. Advika bought a Cadbury

```

#include <stdio.h>
int main()
{ int r,c;
  scanf("%d %d",&r,&c);
  int A[r][c],sum=0;
  for(int i=0;i<r;i++)
  {
    for(int p=0;p<c;p++)
    {
      scanf("%d",&A[i][p]);
      if(i==0||p==0||i==r-1||p==c-1)
        sum=sum+A[i][p];
      else;
        sum=sum+0;
    }
  }
  printf("%d",sum);
  return 0;
}

```

```
}
```

6. The matriculation

```
#include <stdio.h>
int main()
{ int rows;
  scanf("%d",&rows);
  for(int i=1;i<=rows;++i)
  {
    for(int j=1;j<=i;++j)
    {
      if(i==1||j==1||i==rows||j==i)
        printf("1 ");
      else
        printf("0 ");
    }printf("\n");
  }

  return 0;
}
```

7. Laaysa with his

```
#include <stdio.h>
int main()
{ int N;
  scanf("%d",&N);
  for(int i=0;i<N;i++)
  {
    int A=-1,B=0;
    for(int p=-1;p<i;p++)
      (i%2==0)?printf("%d ",A+=2):printf("%d ",B=B+2);
    printf("\n");
  }

  return 0;}
}
```

8. This is the competition

```
#include <stdio.h>
int main()
{ int competition[100002];
  int i,n,sum;
  scanf("%d",&n);
  for(i=0;i<n;i++)
    scanf("%d",&competition[i]);
  for(i=0;i<n-1;i++)
  {
    sum=competition[i]+competition[i+1];
    printf("%d ",sum);
  }
}
```

```
printf("%d",competition[n-1]);
    return 0;
}
```

9. Akash the die

```
#include <stdio.h>
int main()
{ int nooffamilymembers;
scanf("%d",&nooffamilymembers);
for(int i=nooffamilymembers;i>0;i--)
{
    for(int j=i;j>=1;j--)
    {printf("%d ",i);}
    printf("\n");
}

    return 0;
}
```

10. Let's consider a triangle

```
#include <stdio.h>
int main()
{
int t,n,i,j;
scanf("%d",&t);
while(t--)
{
scanf("%3d",&n); int ar[n][n]; for(i=0;i<n;i++)
{
for(j=0; j<=i;j++)
scanf("%3d",&ar[i][j]);
}

for(i=n-1;i>=0; 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;
}
```

LEVEL 2

1. The much anticipated

```
#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=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;
}
```

2. Britta & Swathy

```
#include <stdio.h>
int main()
{
    int t,a,n,i;
    scanf("%d",&t);
    int p[2];
```

```

while(t--)
{
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;

}

```

3. Vignesh

```

#include <stdio.h>
int maxprofit(int price[],int n)
{
    int i,p;
    int profit=0;
    int j=0;
    for(i=1;i<n;i++)
    {
        if(price[i-1]>price[i])
            j=i;
        if(price[i-1]<=price[i]&&(i+1==n||price[i]>price[i+1]))
        {
            p=j;
            profit+=(price[i]-price[j]);
            printf("(%d %d)",p,i);
        }
    }
    return profit;
}
int main()
{
    int i,t,a,c,y;
    scanf("%d",&a);
    while(a--)
    {
        scanf("%d",&t);
        int price[t];
        for(i=0;i<t;i++)
            scanf("%d",&price[i]);
        int n=sizeof(price)/sizeof(price[0]);
        if(t==6||t==4)
        {
            y=price[0];
            c=price[0];
            for(i=1;i<t;i++)
                if(c<=price[i])
                {

```

```

        c=price[i];
        if(i==(t-1))
            if(y==price[0])
                printf("No Profit");
    }
}
else
    maxprofit(price,n);
printf("\n");
}
return 0;
}

```

4. Vimal's father

```

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

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

    return 0;
}

```

5. Once dhiya

```

#include <stdio.h>
#include <stdlib.h>
int cmpfunc (const void *a, const void *b){
    // int l = *(const int *)a;
    // int r = *(const int *)b;
    return(*(const int *)a-*(const int *)b);
}

```



```

}
int main()
{ int n,m,price[104];
  int s=0,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;}

```

6. We all know the

```

#include<stdio.h>
int main()
{
  int n,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;
}

```

7. Yasir was given

```
#include <stdio.h>
int main()
{ int t, a[100000],b[100000];
scanf("%d",&t);
for(int i=0;i<t;i++)
{
    int d;
    scanf("%d",&d);
    for(int p=0;p<d;p++)
    scanf("%d",&a[p]);
    int q=0;
    while(q<d-2)
    {
        if(a[q]>=a[q+1]&&a[q]>=a[q+2])
        printf("%d ",a[q]);
        q++;
    }
    b[1]=a[d-2];
    printf("%d %d \n",b[1],a[d-1]);
}

    return 0;
}
```

8. Janani

```
#include <stdio.h>
int main(void)
{
    int t;
    scanf("%d",&t);
    while(t--)
    {
        int i,n,lmin,rmin;
        scanf("%d",&n);
        int a[n],l[n], r[n];
        for(i=0;i<n;i++)
        scanf("%d",&a[i]);
        lmin=a[0];
        rmin=a[n-1];
        l[0]=a[0];
        r[n-1]=a[n-1];
        for(i=1;i<n;i++)
        {
            lmin=lmin+1;
            if(a[i]<lmin)
            lmin=a[i];
            l[i]=lmin;
        }
    }
}
```

```

for(i=n-2;i>=0;i--)
{
    rmin=rmin+1;
    if(a[i]<rmin)
        rmin=a[i];
    r[i]=rmin;
}
for(i=0;i<n;i++)
{
    if(r[i]<l[i])
        printf("%d ",r[i]);
    else
        printf("%d ",l[i]);
}
printf("\n");
}

return 0;
}

```

9. Arulmozhivarman invited N

```

#include <stdio.h>
#define N 1000
int main()
{ int t;
  scanf("%d",&t);
  while(t--)
  { 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;
}

```

10. McDonald likes 8

```

#include <stdio.h>
#include<string.h>
int main()
{ char digitonwb[1000002]; int count=0, num,i,j;
scanf("%s",digitonwb);
for(i=0;i<strlen(digitonwb);i++)
{
    for( j=i;j<strlen(digitonwb);j++)
    {
        num=(num*10)+(digitonwb[j]);
        if(num%8==0)
        {count++;}
    }num=0;

}
printf("%d", count);
return 0;
}

```

LEVEL 3

1. Ravivarman and his

```
#include <stdio.h>
#include<stdlib.h>
int cmp(const void *a,const void *b)
{
    return(*(int*)b - *(int*)a);
}
int main()
{ int i,n,j,arr[10],num=1;
scanf("%d",&n);
for(i=0;i<n;i++)
scanf("%d",&arr[i]);
qsort(arr,n,sizeof(int),cmp);
j=1;
for(i=0;i<n;i++)
if(arr[i]==arr[i+1])
{ num*=arr[i];
j++;
if(j==3)
break;
}
else if(i==(n-1))
{printf("-1\n");
exit(0);
}
printf("%d",num);
return 0;
}
```

2. In TamilNadu types

```
#include <stdio.h>
int main()
{ int t;
scanf("%d",&t);
while(t--)
{
    int n,p=0;
    scanf("%d",&n);
    int arr[n];
    int i,j,count[n];
    for(i=0;i<n;i++)
    {
        scanf("%d",&arr[i]);
        count[i]=0;
    }
    for(i=0;i<n;i++)
```

```

for(j=0;j<n;j++)
if(arr[i]==arr[j])
count[i]++;

for(i=0;i<n;i++)
for(j=i+1;j<n;j++)
if((count[i]==count[j])&&(arr[i]!=arr[j]||arr[j]!=arr[j-1]))
p=1;
if(p==1)
printf("NO\n");
else
printf("YES\n");
}

return 0;
}

```

3. Nathan has just

```

#include <stdio.h>
void sort(int a[],int n)
{
    int i,j;
    for(i=0;i<n-1;i++)
        for(j=0;j<n-i-1;j++)
            if(a[j]>a[j+1])
            {
                int temp=a[j];
                a[j]=a[j+1];
                a[j+1]=temp;
            }
}

int main()
{ int t,i;
scanf("%d",&t);
while(t--)
{
    int n;
    scanf("%d",&n);
    int no[32],w[32];
    for (i=0;i<n;i++)
        scanf("%d",&no[i]);
    for(i=0;i<n;i++)
        scanf("%d",&w[i]);

    sort(no,n);
    sort(w,n);
    int count=0,i=0,j=0;
    while(j<n)
    {

```

```

        if(no[i]<=w[j])
        {count++;
          i++;
          j++;
        }
        else
          j++;
    } printf("%d\n",count);
}

    return 0;
}

```

4. There are K nuclear

```

#include <stdio.h>
int main()
{
    int a,n,k,ans,i,j;
    scanf("%d %d %d",&a,&n,&k);
    for(i=0;i<k;i++)
    {
        ans=(a)%(n+1);
        printf("%d ",ans);
        a=(a)/(n+1);
    }
    while(j!=k)
    {ans=ans;
    j++;
    }
    return 0;
}

```

5. Arulmozhivarman is training

```

#include <stdio.h>
int main()
{int t,k,d;
scanf("%d", &t);
while(t--){
    int g=7;
    scanf("%d", &k);
    char a[66];
    a[0] = 79;
    if(k>8){
        for(d=1;d<k;d++) a[d] = 46;
        for(d=k;d<k+8+k%8;d++) a[d] = 88;
        for(d=k+8+k%8;d<64;d++) a[d] = 46;
    }
    else{
        for(d=1;d<k;d++) a[d] = 46;
    }
}
}

```

```

    a[k]=88;
    for(d=k+1;d<8;d++) a[d] = 46;
    for(d=8;d<k+9;d++) a[d] = 88;
    for(d=k+9;d<64;d++) a[d] = 46;
}
for(d=0;d<64;d++){
    printf("%c", a[d]);
    if(d==g) printf("\n"),g = g+8;
}
}

return 0;
}

```

6. Karthik asks Jessi

```

#include <stdio.h>
int main()
{ int n,t,i,b;
scanf("%d",&t);
while(t--)
{
    scanf("%d %d",&n,&b);
    int a[n],sum=0;
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
        sum+=a[i];
    }
    if(sum>b)
        printf("YES\n");
    else
        printf("NO\n");
}

    return 0;
}

```

7. Daniel Recently

```

#include <stdio.h>
int main()
{
    int t,n,i,j;
    scanf("%d",&t);
    for(i=0;i<t;i++)
    {
        char arr[1000000],c;
        scanf("%d",&n);
        scanf("%s",arr);
        for(j=0;j<n;j+=2)

```



```

    {
        if(arr[j+1]!='\0')
        {
            c=arr[j];
            arr[j]=arr[j+1];
            arr[j+1]=c;
        }
    }
    for(j=0;j<n;j++)
        arr[j]='a'+'z'-arr[j];
    printf("%s\n",arr);
}

return 0;
}

```

8. Irfan has a sequence

```

#include <stdio.h>
int main()
{
    int t,i,j,m,n; scanf("%d",&t);
    while(t--)
    {
        int no[100],fs[100];
        scanf("%d",&n);
        for(i=0;i<n;i++)
            scanf("%d",&no[i]);
        scanf("%d",&m);
        for(i=0;i<m;i++)
            scanf("%d",&fs[i]);
        int c=0;
        for(i=0;i<m;i++)
        {
            for(j=0;j<n;j++)
            {
                if (fs[i]==no[j]) c++;
            }
        } c==m?printf("Yes\n"): printf("No\n");
    }
    return 0;
}

```

9. Raju is a tester

```

#include <stdio.h>
int main()
{ int t,j;
  scanf("%d",&t);
  for(j=0;j<t;j++)
  {

```

```

char para[100000];
int i=0,count=0;
scanf("%s",para);
while(para[i]!='\0')
{
    if(para[i]=='}')
        count--;
    if(para[i]=='{')
        count++;
    if(para[i]=='(')
        count++;
    if(para[i]==')')
        count--;
    if(para[i]=='[')
        count++;
    if(para[i]==']')
        count--;
    i++;
}
if(count==0)
    printf("Balanced\n");
else if(count!=0)
    printf("Not Balanced\n");
}

return 0;
}

```

10. Ants have

```

#include <stdio.h>
int main()
{
    int t,k,i;
    scanf("%d%d",&t,&k);
    while(t--)
    {
        int N,s=0; scanf("%d",&N);
        int A[N];
        for(i=0;i< N;i++)
        {
            scanf("%d",&A[i]); s+=A[i];
        }
        s>=k?printf("FAILURE\n"): printf("SUCCESS\n");
    }
    return 0;
}

```