```c
//.....(Question-1).....//

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

// Declaring the variables //

    int i,j,n,sum=0;

// Scanning the variables from the user //

    printf("Enter the order of the both arrays: ");
    scanf("%d",&n);

    int a[n],b[n],c[n];

    printf("Enter the elements of first array: \n");

    for(i=1;i<=n;i++){
        scanf("\n%d",&a[i]);
    }

    printf("Enter the elements of second array:\n ");

    for(i=1;i<=n;i++){
        scanf("\n%d",&b[i]);
    }
// assigning the value of third matrix,adding all elements//

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

    c[i]=a[i]+b[i];
    sum=sum+c[i];
    }

// finding the average //

    printf("average is %d",sum/n);

    return 0;
}
```

```
Enter the order of the both arrays: 4
Enter the elements of first array:
1
2
3
4
Enter the elements of second array:
 1
2
3
4
average is 5
```

```c
//.........(Question-2).......//

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

// Declaring variables //

    int i,j,n;

// Scanning order of the matrix //

    printf("Enter the order of the matrix: ");
    scanf("%d",&n);

   int a[n][n];

// Scaning the elements of the matrix //

    printf("Enter the terms of the matrix: \n" );

    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            scanf("%d",&a[i][j]);
            }
    }

// printing the lower triangular matrix //
printf("The lower triangular matrix: \n");
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            if(j>i){
                printf("0 ");
            }
            else{
                printf("%d ",a[i][j]);
            }
        }
        printf("\n");
    }
    return 0;
}
```

```
Enter the order of the matrix: 3
Enter the terms of the matrix:
1
2
3
4
5
6
7
8
9
The lower triangular matrix:
1 0 0
4 5 0
7 8 9
```

```c
//.........(Question-3).......//

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

// Declaring variables //

    int i,j,n,sum=0;

// Scanning order of the matrix //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

    int a[n][n];

// Scaning the elements of the matrix//

    printf("Enter the elements of the array: \n");

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

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

// Printing original matrix for reference //

    printf("Original matrix:\n");
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){

            printf(" %d ",a[i][j]);}
                printf("\n");
        }

// Printing the right diagonal matrix //

    printf("Right diagonal matrix:\n");

    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
        if(i+j==n-1){
            sum=sum+a[i][j];
            printf(" %d ",a[i][j]);}


        else{
            printf(" 0 ");
        }


    }
    printf("\n");
}

  printf("\n");
  printf("Sum: %d",sum);
    return 0;
}
```

```
Enter the order of the array: 3
Enter the elements of the array:
1
2
3
4
5
6
7
8
9
Original matrix:
 1  2  3
 4  5  6
 7  8  9
Right diagonal matrix:
 0  0  3
 0  5  0
 7  0  0

Sum: 15
```

```c
//.....(Question-4).....//

#include<stdio.h>
int main(){
    int max,min,n,i,c,minpos=0,maxpos=0;

// Scanning order of the matrix //

  printf("Enter the order of the array: ");
  scanf("%d",&n);

  int a[n];

// Scaning the elements of the matrix//

  printf("Enter the elements of the array: \n");

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

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

// Finding maximum and its position //

   max=a[0];
  for(i=1;i<n;i++){
    if(max<a[i]){
        max=a[i];
        maxpos=i;
    }
  }

// Finding minimum and its position //

   min=a[0];
  for(i=1;i<n;i++){
    if(min>a[i]){
        min=a[i];
        minpos=i;
    }
  }

// Exchanging the maximum and minimum values in array //

  c = a[minpos];
  a[minpos] = a[maxpos];
  a[maxpos] =c;

// Printing the modified array //

printf("Modified array:\n");
    for(i=0;i<n;i++){
        printf("%d ",a[i]);
    }

    return 0;
}
```

```
Enter the order of the array: 5
Enter the elements of the array:
1
2
3
4
5
Modified array:
5 2 3 4 1
```

```c
//.....(Question-5).....//

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

// Scanning order of the matrix //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

    int a[n];

// Scaning the elements of the matrix//

    printf("Enter the elements of the array: \n");

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

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

// Scanning the token to be deleted from array //

    printf("Enter the token to be deleted: ");
    scanf("%d",&t);

// Deleting the entered token //

    for(i=0;i<n;i++){
        if(a[i]==t){
            for(j=i+1;j<n;j++){
                a[j-1]=a[j];
            }
        }
    }

// Printing the modified array //
printf("Modified array:\n");
       for(i=0;i<n-1;i++){
        printf("%d ",a[i]);
    }
    return 0;
}
```

```
Enter the order of the array: 5
Enter the elements of the array:
1
2
3
4
5
Enter the token to be deleted: 4
Modified array:
1 2 3 5
```

6.c > main()

```c
//.........(Question-6).......//

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

// Scanning order of the matrix //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

    int a[n],b[n+1];

// Scaning the elements of the matrix//

    printf("Enter the elements of the array: \n");

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

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

// Scanning the index and token to be added to array //

    printf("Enter the token to be added: ");
     scanf("%d",&t);

    printf("Enter the index where the token is to be added: ");
     scanf("%d",&k);

// adding the entered token //

    for(i=0;i<k;i++){
     b[i]=a[i];

    }
    if(i==k){
        b[k]=t;
    }

    for(j=i+1;j<n+1;j++,i++){
        b[j]=a[i];
    }

// Printing the modified array //
printf("Modified array:\n");
       for(i=0;i<n+1;i++){
        printf("%d ",b[i]);
    }
    return 0;
}
```

```
Enter the order of the array: 5
Enter the elements of the array:
1
2
3
4
5
Enter the token to be added: 34
Enter the index where the token is to be added: 2
Modified array:
1 2 34 3 4 5
```

```c
//.....(Question-7).....//

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

// Declaring the variables //

    int i,j,n,sum=0;

// Scanning the variables from the user //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

    int a[n];

    printf("Enter the elements of array: \n");

    for(i=0;i<n;i++){
        scanf("\n%d",&a[i]);
    }

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

          sum = (sum + a[i] % a[j])%(1000000007);

        }
    }

     printf("Sum of remainders: %d",sum);
return 0;
}
```

```
Enter the order of the array: 3
Enter the elements of array:
1
2
3
Sum of remainders: 5
```

```c
//.....(Question-8).....//

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

// Declaring the variables //

    int i,j,n,k;

// Scanning the variables from the user //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

    int a[n][n],b[n][n],c[n][n];

    printf("Enter the elements of first array: \n");

    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
        scanf("\n%d", &a[i][j]);
        }
    }

    printf("Enter the elements of second array: \n");

    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
        scanf("\n%d",& b[i][j]);
        }
    }

    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            c[i][j]=0;
            for(k=0;k<n;k++){
                c[i][j]+=(a[i][k])*(b[k][j]);
            }
        }
    }

// First matrix //
    printf("first matrix: \n");
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            printf("%d ",a[i][j]);
        }
printf("\n");
    }

// Second matrix //
 printf("second matrix:\n");
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            printf("%d ",b[i][j]);
        }
printf("\n");
    }

// Multiplied matrix //
 printf("multiplied matrix:\n");
    for(i=0;i<n;i++){
        for(j=0;j<n;j++){
            printf("%d ",c[i][j]);
        }
printf("\n");
    }

return 0;
}
```

```
Enter the order of the array: 3
Enter the elements of first array:
1
1
1
1
1
1
1
1
1
Enter the elements of second array:
1
1
1
1
1
1
1
1
1
first matrix:
1 1 1
1 1 1
1 1 1
second matrix:
1 1 1
1 1 1
1 1 1
multiplied matrix:
3 3 3
3 3 3
3 3 3
```

```c
//.........(Question-9).......//

#include<stdio.h>
int main(){
   // Declaring the variables //

    int i,j,n,ind;

// Scanning the variables from the user //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

    int a[n],rev[n];

    printf("Enter the elements of array: \n");

    for(i=0;i<n;i++){
        scanf("\n%d",&a[i]);
    }

    for(i=n-1,j=0;i>=0,j<n;i--,j++){
         rev[j]=a[i];
    }

    for(i=0;i<n;i++){
         if(a[i]!=rev[i]){
          ind =1;
         }
         else{ind=0;}
    }

    if(ind==1){
        printf("Not a palindrome");
    }

    else{
        printf("It is a palindrome");
    }


    return 0;
}
```

```
Enter the order of the array: 3
Enter the elements of array:
1
2
1
It is a palindrome
```

```c
//.........(Question-10).......//

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

// Declaring the variables //

    int i,j,n,k;

// Scanning the variables from the user //

    printf("Enter the order of the array: ");
    scanf("%d",&n);

   int a[n],b[n],c[n],even=0,odd=0;

    printf("Enter the terms of the array: \n" );

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

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

    }

// counting number of odd and even terms //

       for(i=0;i<n;i++){
         if(a[i]%2==0){even++;}
         else{odd++;}
       }

// entering even and odd terms of a[i] into b[i],c[i] //

            for(j=0,i=0,k=0;j<even,i<n;i++){

                if(a[i]%2==0){
                  b[j]=a[i];
                  j++;
                }
                else{
                    c[k]=a[i];
                    k++;
                }

        }

// Printing even terms //

printf("even:\n");
        for(i=0;i<even;i++){
            printf("%d ",b[i]);
        }

// printing odd terms //

printf("\nodd:\n");
        for(i=0;i<odd;i++){
            printf("%d ",c[i]);
        }

    return 0;
}
```

```
Enter the order of the array: 4
Enter the terms of the array:
1
2
3
4
even:
2 4
odd:
1 3
```

11.c > main()

```c
//.........(Question-11).......//

#include<stdio.h>

int main() {

// Declaring variables //

    int n;

// Scanning variables from the user //

    printf("Enter the size of array : ");
    scanf("%d", &n);
    int a[n];

    int sum2 = 0;

    printf("Enter the array elements : \n");

    for(int i = 0; i<n-1; i++) {
        scanf("%d", &a[i]);
        sum2 += a[i];
    }

    int sum1 = ((n)*(n+1))/2;

    printf("Missing number is %d", sum1-sum2);

    return 0;
}
```

```
Enter the size of array : 5
Enter the array elements :
1
3
4
5
Missing number is 2
```