

```
1 //.....(Question-1).....//
2
3 #include<stdio.h>
4 int main(){
5
6 // Declaring the variables //
7
8     int i,j,n,sum=0;
9
10 // Scanning the variables from the user //
11
12     printf("Enter the order of the both arrays: ");
13     scanf("%d",&n);
14
15     int a[n],b[n],c[n];
16
17     printf("Enter the elements of first array: \n");
18
19     for(i=1;i<=n;i++){
20         scanf("\n%d",&a[i]);
21     }
22
23     printf("Enter the elements of second array:\n ");
24
25     for(i=1;i<=n;i++){
26         scanf("\n%d",&b[i]);
27     }
28 // assigning the value of third matrix,adding all elements//
29
30     for(i=1;i<=n;i++){
31
32         c[i]=a[i]+b[i];
33         sum=sum+c[i];
34     }
35
36 // finding the average //
37
38     printf("average is %d",sum/n);
39
40     return 0;
41 }
42
```

```
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
```

```
1 //.....(Question-2).....//
2
3 #include<stdio.h>
4 int main(){
5
6 // Declaring variables //
7
8     int i,j,n;
9
10 // Scanning order of the matrix //
11
12     printf("Enter the order of the matrix: ");
13     scanf("%d",&n);
14
15     int a[n][n];
16
17 // Scanning the elements of the matrix //
18
19     printf("Enter the terms of the matrix: \n" );
20
21     for(i=0;i<n;i++){
22         for(j=0;j<n;j++){
23             scanf("%d",&a[i][j]);
24         }
25     }
26
27 // printing the lower triangular matrix //
28 printf("The lower triangular matrix: \n");
29     for(i=0;i<n;i++){
30         for(j=0;j<n;j++){
31             if(j>i){
32                 printf("0 ");
33             }
34             else{
35                 printf("%d ",a[i][j]);
36             }
37         }
38         printf("\n");
39     }
40     return 0;
41 }
```

```
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
```

```

1 //.....(Question-3).....//
2
3 #include<stdio.h>
4 int main(){
5
6 // Declaring variables //
7
8     int i,j,n,sum=0;
9
10 // Scanning order of the matrix //
11
12     printf("Enter the order of the array: ");
13     scanf("%d",&n);
14
15     int a[n][n];
16
17 // Scanning the elements of the matrix//
18
19     printf("Enter the elements of the array: \n");
20
21     for(i=0;i<n;i++){
22         for(j=0;j<n;j++){
23
24             scanf("%d",&a[i][j]);
25         }
26
27 // Printing original matrix for reference //
28
29     printf("Original matrix:\n");
30     for(i=0;i<n;i++){
31         for(j=0;j<n;j++){
32
33             printf(" %d ",a[i][j]);
34             printf("\n");
35         }
36
37 // Printing the right diagonal matrix //
38
39     printf("Right diagonal matrix:\n");
40
41     for(i=0;i<n;i++){
42         for(j=0;j<n;j++){
43             if(i+j==n-1){
44                 sum=sum+a[i][j];
45                 printf(" %d ",a[i][j]);
46
47             else{
48                 printf(" 0 ");
49             }
50         }
51     }
52
53     printf("\n");
54
55 }
56
57 printf("\n");
58 printf("Sum: %d",sum);
59     return 0;
60 }

```

```

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

```

```

1 //.....(Question-4).....//
2
3 #include<stdio.h>
4 int main(){
5     int max,min,n,i,c,minpos=0,maxpos=0;
6
7 // Scanning order of the matrix //
8
9     printf("Enter the order of the array: ");
10    scanf("%d",&n);
11
12    int a[n];
13
14 // Scanning the elements of the matrix//
15
16    printf("Enter the elements of the array: \n");
17
18    for(i=0;i<n;i++){
19
20        scanf("%d",&a[i]);
21    }
22
23 // Finding maximum and its position //
24
25    max=a[0];
26    for(i=1;i<n;i++){
27        if(max<a[i]){
28            max=a[i];
29            maxpos=i;
30        }
31    }
32
33 // Finding minimum and its position //
34
35    min=a[0];
36    for(i=1;i<n;i++){
37        if(min>a[i]){
38            min=a[i];
39            minpos=i;
40        }
41    }
42
43 // Exchanging the maximum and minimum values in array //
44
45    c = a[minpos];
46    a[minpos] = a[maxpos];
47    a[maxpos] = c;
48
49 // Printing the modified array //
50
51    printf("Modified array:\n");
52    for(i=0;i<n;i++){
53        printf("%d ",a[i]);
54    }
55
56    return 0;
57 }

```

```

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

```

```
1 //.....(Question-5).....//
2
3 #include<stdio.h>
4 int main(){
5     int n,i,j,t;
6
7     // Scanning order of the matrix //
8
9     printf("Enter the order of the array: ");
10    scanf("%d",&n);
11
12    int a[n];
13
14    // Scanning the elements of the matrix//
15
16    printf("Enter the elements of the array: \n");
17
18    for(i=0;i<n;i++){
19
20        scanf("%d",&a[i]);
21    }
22
23    // Scanning the token to be deleted from array //
24
25    printf("Enter the token to be deleted: ");
26    scanf("%d",&t);
27
28    // Deleting the entered token //
29
30    for(i=0;i<n;i++){
31        if(a[i]==t){
32            for(j=i+1;j<n;j++){
33                a[j-1]=a[j];
34            }
35        }
36    }
37
38    // Printing the modified array //
39    printf("Modified array:\n");
40    for(i=0;i<n-1;i++){
41        printf("%d ",a[i]);
42    }
43    return 0;
44 }
```

```
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
```

```

1 //.....(Question-6).....//
2
3 #include<stdio.h>
4 int main(){
5     int n,i,j,t,k;
6
7     // Scanning order of the matrix //
8
9     printf("Enter the order of the array: ");
10    scanf("%d",&n);
11
12    int a[n],b[n+1];
13
14    // Scanning the elements of the matrix//
15
16    printf("Enter the elements of the array: \n");
17
18    for(i=0;i<n;i++){
19
20        scanf("%d",&a[i]);
21    }
22
23    // Scanning the index and token to be added to array //
24
25    printf("Enter the token to be added: ");
26    scanf("%d",&t);
27
28    printf("Enter the index where the token is to be added: ");
29    scanf("%d",&k);
30
31    // adding the entered token //
32
33    for(i=0;i<k;i++){
34        b[i]=a[i];
35    }
36
37    if(i==k){
38        b[k]=t;
39    }
40
41    for(j=i+1;j<n+1;j++,i++){
42        b[j]=a[i];
43    }
44
45    // Printing the modified array //
46    printf("Modified array:\n");
47
48    for(i=0;i<n+1;i++){
49        printf("%d ",b[i]);
50    }
51    return 0;
52 }
```

```

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

```

```

1 //.....(Question-7).....//
2
3 #include<stdio.h>
4 int main(){
5
6 // Declaring the variables //
7
8     int i,j,n,sum=0;
9
10 // Scanning the variables from the user //
11
12     printf("Enter the order of the array: ");
13     scanf("%d",&n);
14
15     int a[n];
16
17     printf("Enter the elements of array: \n");
18
19     for(i=0;i<n;i++){
20         scanf("\n%d",&a[i]);
21     }
22
23     for(i=0;i<n;i++){
24         for(j=0;j<n;j++){
25
26             sum = (sum + a[i] % a[j])%(1000000007);
27
28         }
29     }
30
31     printf("Sum of remainders: %d",sum);
32     return 0;
33 }

```

```

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

```

```

1 //.....(Question-8).....//
2
3 #include<stdio.h>
4 int main(){
5
6 // Declaring the variables //
7
8     int i,j,n,k;
9
10 // Scanning the variables from the user //
11
12     printf("Enter the order of the array: ");
13     scanf("%d",&n);
14
15     int a[n][n],b[n][n],c[n][n];
16
17     printf("Enter the elements of first array: \n");
18
19     for(i=0;i<n;i++){
20         for(j=0;j<n;j++){
21             scanf("\n%d", &a[i][j]);
22         }
23     }
24
25     printf("Enter the elements of second array: \n");
26
27     for(i=0;i<n;i++){
28         for(j=0;j<n;j++){
29             scanf("\n%d",& b[i][j]);
30         }
31     }
32
33     for(i=0;i<n;i++){
34         for(j=0;j<n;j++){
35             c[i][j]=0;
36             for(k=0;k<n;k++){
37                 c[i][j]+=(a[i][k])*(b[k][j]);
38             }
39         }
40     }
41
42 // First matrix //
43     printf("first matrix: \n");
44     for(i=0;i<n;i++){
45         for(j=0;j<n;j++){
46             printf("%d ",a[i][j]);
47         }
48     printf("\n");
49     }
50
51 // Second matrix //
52     printf("second matrix:\n");
53     for(i=0;i<n;i++){
54         for(j=0;j<n;j++){
55             printf("%d ",b[i][j]);
56         }
57     printf("\n");
58     }
59
60 // Multiplied matrix //
61     printf("multiplied matrix:\n");
62     for(i=0;i<n;i++){
63         for(j=0;j<n;j++){
64             printf("%d ",c[i][j]);
65         }
66     printf("\n");
67     }
68
69     return 0;
70 }

```

```

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Enter the order of the array: 3
Enter the elements of first array:
1
1
1
1
1
1
1
1
1
1
Enter the elements of second array:
1
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

```



```
1  //.....(Question-9).....//
2
3  #include<stdio.h>
4  int main(){
5      // Declaring the variables //
6
7      int i,j,n,ind;
8
9      // Scanning the variables from the user //
10
11     printf("Enter the order of the array: ");
12     scanf("%d",&n);
13
14     int a[n],rev[n];
15
16     printf("Enter the elements of array: \n");
17
18     for(i=0;i<n;i++){
19         scanf("\n%d",&a[i]);
20     }
21
22     for(i=n-1,j=0;i>=0,j<n;i--,j++){
23         rev[j]=a[i];
24     }
25
26     for(i=0;i<n;i++){
27         if(a[i]!=rev[i]){
28             ind =1;
29         }
30         else{ind=0;}
31     }
32
33     if(ind==1){
34         printf("Not a palindrome");
35     }
36
37     else{
38         printf("It is a palindrome");
39     }
40
41
42     return 0;
43 }
```

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

```

1 //.....(Question-10).....//
2
3 #include<stdio.h>
4 int main(){
5
6 // Declaring the variables //
7
8     int i,j,n,k;
9
10 // Scanning the variables from the user //
11
12     printf("Enter the order of the array: ");
13     scanf("%d",&n);
14
15     int a[n],b[n],c[n],even=0,odd=0;
16
17     printf("Enter the terms of the array: \n" );
18
19     for(i=0;i<n;i++){
20
21         scanf("%d",&a[i]);
22
23     }
24
25 // counting number of odd and even terms //
26
27     for(i=0;i<n;i++){
28         if(a[i]%2==0){even++;}
29         else{odd++;}
30     }
31
32 // entering even and odd terms of a[i] into b[i],c[i] //
33
34     for(j=0,i=0,k=0;j<even,i<n;i++){
35
36         if(a[i]%2==0){
37             b[j]=a[i];
38             j++;
39         }
40         else{
41             c[k]=a[i];
42             k++;
43         }
44     }
45
46
47 // Printing even terms //
48
49     printf("even:\n");
50     for(i=0;i<even;i++){
51         printf("%d ",b[i]);
52     }
53
54 // printing odd terms //
55
56     printf("\nodd:\n");
57     for(i=0;i<odd;i++){
58         printf("%d ",c[i]);
59     }
60
61     return 0;
62 }

```

```

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

```

```
1  //.....(Question-11).....//
2
3  #include<stdio.h>
4
5  int main() {
6
7  // Declaring variables //
8
9      int n;
10
11 // Scanning variables from the user //
12
13     printf("Enter the size of array : ");
14     scanf("%d", &n);
15     int a[n];
16
17     int sum2 = 0;
18
19     printf("Enter the array elements : \n");
20
21     for(int i = 0; i<n-1; i++) {
22         scanf("%d", &a[i]);
23         sum2 += a[i];
24     }
25
26     int sum1 = ((n)*(n+1))/2;
27
28     printf("Missing number is %d", sum1-sum2);
29
30     return 0;
31 }
```

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