1.Addition of matrix

```
#include<stdio.h>
int main()
{
  int a1[3][3],a2[3][3],a3[3][3];
  int i,j,r,c;


scanf("%d%d",&r,&c);
 printf("Enter elements in matrix1 : ");
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      scanf("%d",&a1[i][j]);
    }
  }
  printf("Enter elements in matrix2 : ");
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      scanf("%d",&a2[i][j]);
    }
  }
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      a3[i][j]=a1[1][j]+a2[i][j];
    }
  }
```

```
 for(i=0;i<r;i++)
 {
  for(j=0;j<c;j++)
  {
   printf("%d ",a3[i][j]);
  }
  printf("\n");
 }
 return 0;
}
```

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```
Enter elements in matrix1 : 1 2 3
1 2 3
1 2 3
Enter elements in matrix2 : 1 2 3
1 2 3
1 2 3
2 4 6
2 4 6
2 4 6

--------------------------------
Process exited after 25.88 seconds with return value 0
Press any key to continue . . .
```

2.delete element

```
#include <stdio.h>
#define MAX_SIZE 100
int main()
{
   int arr[MAX_SIZE];
   int i,size,p;
```

```
    printf("Enter size of the array : ");
    scanf("%d",&size);
    printf("Enter elements in array : ");
    for(i=0;i<size;i++)
    {
        scanf("%d",&arr[i]);
    }
    printf("Enter the element position to delete : ");
    scanf("%d",&p);
    if(p<0||p>size)
    {
        printf("Invalid position!");
    }
    else
    {
        for(i=p-1;i<size-1;i++)
        {
            arr[i]=arr[i+1];
        }
        size=size-1;
        printf("\nElements of array after delete are : ");
        for(i=0;i<size;i++)
        {
            printf("%d ", arr[i]);
        }
    }
    return 0;
}
```

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```
Enter size of the array : 5
Enter elements in array : 1 2 3 4 5
Enter the element position to delete : 3

Elements of array after delete are : 1 2 4 5
--------------------------------
Process exited after 18.96 seconds with return value 0
Press any key to continue . . .
```

3.insert new element

```
#include <stdio.h>

#define MAX_SIZE 100

int main()

{

   int arr[MAX_SIZE];

   int i, size,n,p;

   printf("Enter size of the array : ");

   scanf("%d",&size);

   printf("Enter elements in array : ");

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

   {

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

   }

   printf("Enter element to insert : ");

   scanf("%d",&n);

   printf("Enter the element position : ");

   scanf("%d",&p);

   if(p>size+1||p<=0)

   {

      printf("Invalid position!");

   }

   else
```

```
    {
        for(i=size;i>=p;i--)
        {
            arr[i]=arr[i-1];
        }
        arr[p-1]=n;
        size++;
        printf("Array elements after insertion : ");
        for(i=0;i<size;i++)
        {
            printf("%d  ",arr[i]);
        }
    }
    return 0;
}
```

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```
Enter size of the array : 5
Enter elements in array : 1 2 3 4 5
Enter element to insert : 3
Enter the element position : 4
Array elements after insertion : 1  2  3  3  4  5
--------------------------------
Process exited after 17.31 seconds with return value 0
Press any key to continue . . .
```

4.largest element

```
#include<stdio.h>
#define MAX_SIZE 100
int main()
{
  int arr[MAX_SIZE];
```

```
 int n,i,j,max;
 printf("Enter size of the array : ");
 scanf("%d",&n);
 printf("Enter elements in array : ");
 for(i=0;i<n;i++)
 {
  scanf("%d",&arr[i]);
 }
 max=arr[0];
 for(i=0;i<n;i++)
 {
  if(max<arr[i])
  {
    max=arr[i];
  }
 }
 printf("\nLargest Element in the Array : %d",max);
 return 0;
}
```

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```
Enter size of the array : 5
Enter elements in array : 1 2 3 4 5

Largest Element in the Array : 5
--------------------------------
Process exited after 6.908 seconds with return value 0
Press any key to continue . . .
```

5.Merge

```
#include<stdio.h>
#define MAX_SIZE 100
```

```
int main()
{
 int arr1[MAX_SIZE],arr2[MAX_SIZE],arr3[MAX_SIZE];
 int n,n1,n2,i,j;
 printf("Enter size of the array1 : ");
 scanf("%d",&n1);
 printf("Enter size of the array2 : ");
 scanf("%d",&n2);
 for(i=0;i<n1;i++)
 {
  scanf("%d",&arr1[i]);
 }
 for(j=0;j<n2;j++)
 {
  scanf("%d",&arr2[j]);
 }
 n=n1+n2;
 for(i=0;i<n1;i++)
 {
  arr3[i]=arr1[i];
 }
 for(j=0,i=n1;j<n2&&i<n;i++,j++)
 {
  arr3[i]=arr2[j];
 }
 printf("Merged array : ");
 for(i=0;i<n;i++)
 {
  printf("%d ",arr3[i]);
 }
 return 0;
```

}

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```
Enter size of the array1 : 5
Enter size of the array2 : 5
enter the first array: 1 2 3 4 5
enter the second array: 6 7 8 9 0
Merged array : 1 2 3 4 5 6 7 8 9 0
--------------------------------
Process exited after 16.47 seconds with return value 0
Press any key to continue . . .
```

6.multiplication

```
#include<stdio.h>
int main()
{
  int a1[3][3],a2[3][3],a3[3][3];
  int i,j,k,sum=0;
  printf("Enter elements in matrix1 : \n");
  for(i=0;i<3;i++)
  {
    for(j=0;j<3;j++)
    {
      scanf("%d",&a1[i][j]);
    }
  }
  printf("Enter elements in matrix2 : \n");
  for(i=0;i<3;i++)
  {
    for(j=0;j<3;j++)
    {
      scanf("%d",&a2[i][j]);
```

```
   }
  }
  for(i=0;i<3;i++) //mutliplication starts
  {
    for(j=0;j<3;j++)
    {
       sum=0;
      for(k=0;k<3;k++)
      {
        sum=sum+a1[i][k]*a2[k][j];
      }
      a3[i][j]=sum;
    }
  }
  for(i=0;i<3;i++)
  {
    for(j=0;j<3;j++)
    {
      printf("%d ",a3[i][j]);
    }
    printf("\n");
  }
  return 0;
}
```

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```
Enter elements in matrix1 :
2 3 4
3 4 5
2 3 4
Enter elements in matrix2 :
2 3 4
3 4 5
3 4 5
25 34 43
33 45 57
25 34 43

--------------------------------
Process exited after 24.65 seconds with return value 0
Press any key to continue . . .
```

7.Even or odd

```
#include<stdio.h>

#define MAX_SIZE 100

int main()

{

 int arr[MAX_SIZE],n,i,odd,even;

 printf("\nEnter size of array: ");

 scanf("%d",&n);

 printf("Enter elements: \n");

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

 {

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

 }

 printf("\nEven elements of array : \n");

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

 {

  if(arr[i]%2==0)

  {

   printf("%d ",arr[i]);

  }

 }
```

```
 printf("\nOdd elements of array : \n");
 for(i=0;i<n;i++)
 {
  if(arr[i]%2!=0)
  {
   printf("%d ",arr[i]);
  }
 }
 return 0;
}
```

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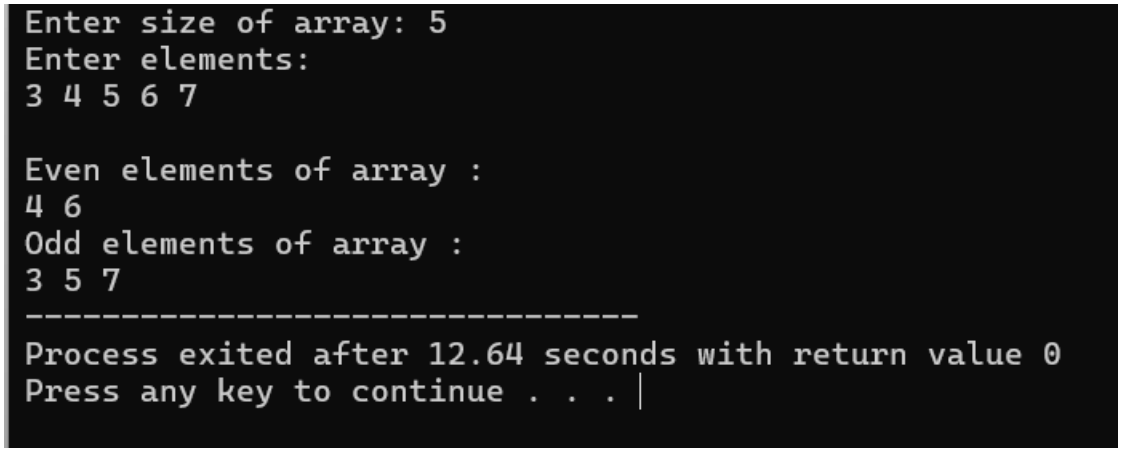

8.Sum of rows and columns

```
#include <stdio.h>
#define SIZE 3
int main()
{
   int A[SIZE][SIZE],n;
   int row,col,sum = 0;
   printf("Enter elements in matrix of size %dx%d: \n",SIZE,SIZE);
   for(row=0;row<SIZE;row++)
```

```
    {
        for(col=0;col<SIZE;col++)
        {
            scanf("%d",&A[row][col]);
        }
    }
    for(row=0;row<SIZE;row++)
    {
        sum = 0;
        for(col=0; col<SIZE; col++)
        {
            sum+=A[row][col];
        }
        printf("Sum of elements of Row %d = %d\n",row+1,sum);
    }
    for(row=0;row<SIZE;row++)
    {
        sum=0;
        for(col=0;col<SIZE;col++)
        {
            sum+=A[col][row];
        }
        printf("Sum of elements of Column %d = %d\n",row+1,sum);
    }

    return 0;
}
```

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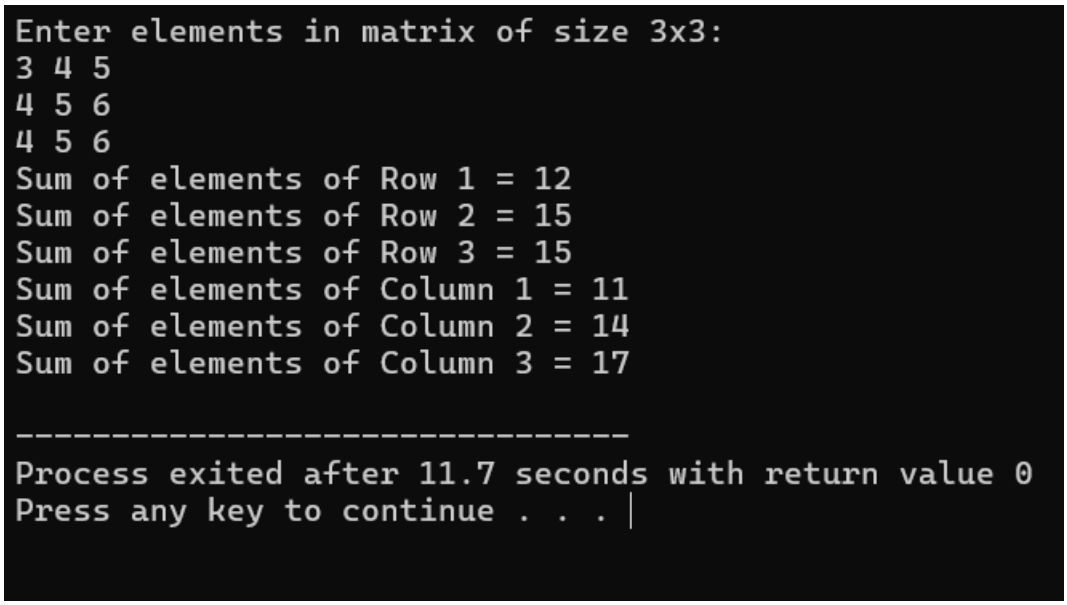

9.transpose

```
#include<stdio.h>

int main()

{

 int arr[3][3];

 int i,j;

 printf("\nEnter elements of array: \n");

 for(i=0;i<3;i++)

 {

  for(j=0;j<3;j++)

  {

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

  }

 }

 printf("\nOriginal matrix:\n");

 for(i=0;i<3;i++)

 {

  for(j=0;j<3;j++)

  {
```

```
      printf("%d ",arr[i][j]);
    }
    printf("\n");
  }
  printf("\nTranspose matrix:\n");
  for(i=0;i<3;i++)
  {
    for(j=0;j<3;j++)
    {
      printf("%d ",arr[j][i]);
    }
    printf("\n");
  }
}
```

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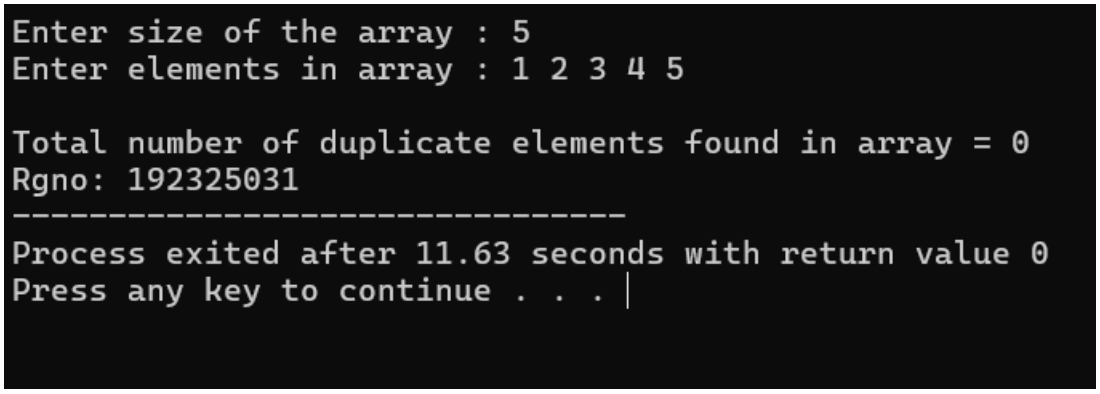
```
Enter elements of array:
1 2 3
4 5 6
7 8 9

Original matrix:
1 2 3
4 5 6
7 8 9

Transpose matrix:
1 4 7
2 5 8
3 6 9

--------------------------------
Process exited after 20.85 seconds with return value 0
Press any key to continue . . .
```

10.duolicate element

```c
#include <stdio.h>
#define MAX_SIZE 100
int main()
{
  int arr[MAX_SIZE];
  int i, j, n, count = 0;
  printf("Enter size of the array : ");
  scanf("%d",&n);
  printf("Enter elements in array : ");
  for(i=0; i<n; i++)
  {
    scanf("%d", &arr[i]);
  }
  for(i=0; i<n; i++)
  {
    for(j=i+1; j<n; j++)
    {
      if(arr[i] == arr[j])
      {
        count++;
        break;
      }
    }
  }
  printf("\nTotal number of duplicate elements found in array = %d", count);
  printf("\nRgno: 192372131");
  return 0;
}
```



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