Arrayreverse

```
#include <stdio.h>
int main(void) {
  int arr[10],i,temp,n;
  printf("Enter Array Limit:");
  scanf("%d",&n);
  printf("Enter Array Elements...\n");
  for(i=0;i<n;i++)
  {
    printf("Enter Element[%d]:",i+1);
    scanf("%d",&arr[i]);
  }
  printf("Array Elements before reverse.....\n");
  for(i=0;i<n;i++)
  printf("%d\t",arr[i]);
  for(i=0;i<n/2;i++)
  {
    temp=arr[i];
    arr[i]=arr[n-1-i];
    arr[n-1-i]=temp;
  }
  printf("\nArray Elements after reverse....\n");
  for(i=0;i<n;i++)
  printf("%d\t",arr[i]);
  return 0;
}
```

arr

0	1	2	3	4	5
4	8	6	5	3	1

N=6
Array Elements before reverse.....
1 3 5 6 8 4
i=0, 1, 2, 3
n/2=3
temp=5
arr[2]=arr[3]
arr[3]=5
6-1=5-2=3
Array Elements after reverse....
4 8 6 5 3 1

output

Enter Array Limit:5

Enter Array Elements...

Enter Element[1]:3

Enter Element[2]:5

Enter Element[3]:7

Enter Element[4]:4

Enter Element[5]:2

Array Elements before reverse.....

3 5 7 4 2

Array Elements after reverse....

2 4 7 5 3

Search

```
#include <stdio.h>
int main(void) {
  int i,n,arr[10],num,flag=0;
  printf("Enter Array Limit:");
  scanf("%d",&n);
  printf("Enter Array Elements....\n");
  for(i=0;i<n;i++)
  {
    printf("Enter Element[%d]:",i+1);
    scanf("%d",&arr[i]);
  }
  printf("Enter Number to search:");
  scanf("%d",&num);
  printf("Array Elements are.....\n");
  for(i=0;i<n;i++)
  {
    printf("%d\t",arr[i]);
  }
  for(i=0;i<n;i++)
  {
    if(num==arr[i])
    {
      printf("\n%d found at position %d",num,i+1);
      flag=1;
    }
  }
  if(!flag)
  {
    printf("\n%d is not found",num);
  }
  return 0;
}
```

arr

0	1	2	3
4	2	9	5

Flag=1
n=4
arr[0]=4
arr[1]=2
arr[2]=9
arr[3]=5
Enter Number to search:9
num=9
Array Elements are.....
4 2 9 5
i=0, 1, 2, 3, 4
9 found at position 3

output

Enter Array Limit:6

Enter Array Elements....

Enter Element[1]:3

Enter Element[2]:9

Enter Element[3]:7

Enter Element[4]:5

Enter Element[5]:6

Enter Element[6]:8

Enter Number to search:2

Array Elements are.....

3 9 7 5 6 8

2 is not found

Bubblesort

```
#include <stdio.h>
int main(void) {
  int arr[10],temp,i,j,n;
  printf("Enter Array Limit:");
  scanf("%d",&n);
  printf("Enter Array Elements....\n");
  for(i=0;i<n;i++)
  {
    printf("Enter Element[%d]:",i+1);
    scanf("%d",&arr[i]);
  }
  printf("Array Before sort.....\n");
  for(i=0;i<n;i++)
  {
    printf("%d\t",arr[i]);
  }
  for(i=0;i<n-1;i++)
  {
    for(j=0;j<n-i-1;j++)
    {
      if(arr[j]>arr[j+1])
      {
        temp=arr[j];
        arr[j]=arr[j+1];
        arr[j+1]=temp;
      }
    }
  }
  printf("\nArray Elements after sort.....\n");
  for(i=0;i<n;i++)
  {
    printf("%d\t",arr[i]);
  }
  return 0;
}
```

arr

0	1	2	3
3	5	6	8

N=4
arr[0]=5
arr[1]=3
arr[2]=8
arr[3]=6
Array Before sort.....
5 3 8 6
i=0, 1, 2, 3
n-1=3
n-i-1=4-2-1=1
j=0, 1
arr[0]>arr[1] 8>6
temp=8
Array Elements after sort.....
3 5 6 8

output

Enter Array Limit:4

Enter Array Elements....

Enter Element[1]:5

Enter Element[2]:3

Enter Element[3]:8

Enter Element[4]:6

Array Before sort.....

5 3 8 6

Array Elements after sort.....

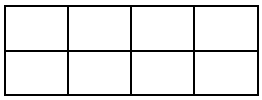
3 5 6 8

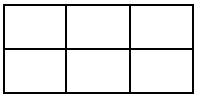
Merge

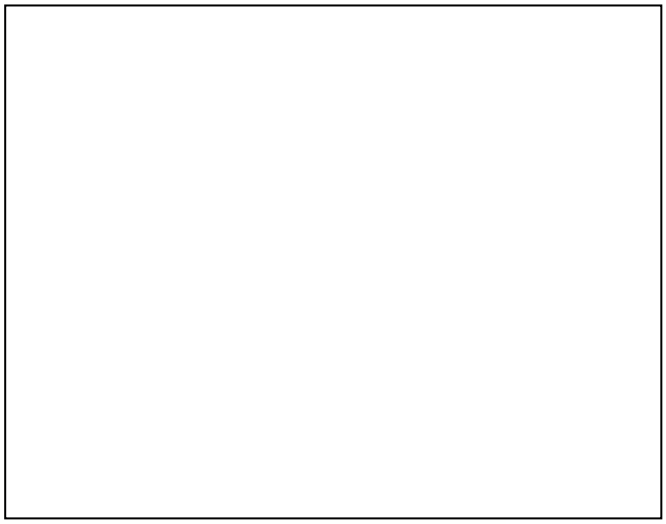
```
#include <stdio.h>

int main(void) {

  int n1,n2,i,arr1[20],arr2[20],j;
  printf("Enter first array limit:");
  scanf("%d",&n1);
  printf("Enter first array elements.....\n");
  for(i=0;i<n1;i++)
  {
    printf("Enter Element[%d]:",i+1);
    scanf("%d",&arr1[i]);
  }
  printf("Enter Second array limit:");
  scanf("%d",&n2);
  printf("Enter Second array elements.....\n");
  for(i=0;i<n2;i++)
  {
    printf("Enter Element[%d]:",i+1);
    scanf("%d",&arr2[i]);
  }
  printf("Fisrt array elements are....\n");
  for(i=0;i<n1;i++)
  {
    printf("%d\t",arr1[i]);
  }
  printf("\nSecond array elements are....\n");
  for(i=0;i<n2;i++)
  {
    printf("%d\t",arr2[i]);
  }
  for(i=n1,j=0;j<n2;i++,j++)
  {
    arr1[i]=arr2[j];
  }
  printf("\nMerged array elements are....\n");
  for(i=0;i<n1+n2;i++)
  {
    printf("%d\t",arr1[i]);
  }
  return 0;
}
```







output

Enter first array limit:5

Enter first array elements.....

Enter Element[1]:1

Enter Element[2]:2

Enter Element[3]:3

Enter Element[4]:4

Enter Element[5]:5

Enter Second array limit:4

Enter Second array elements.....

Enter Element[1]:5

Enter Element[2]:3

Enter Element[3]:8

Enter Element[4]:2

First array elements are....

1 2 3 4 5

Second array elements are....

5 3 8 2

Merged array elements are....

1 2 3 4 5 5 3 8 2

Total

```
#include <stdio.h>

int main(void) {
```

```
 int arr[10],n,sum,avg,big,small,i;
 printf("Enter array limit:");
 scanf("%d",&n);
 printf("Enter array elements...\n");
 for(i=0;i<n;i++)
 {
  printf("Enter element[%d]:",i+1);
  scanf("%d",&arr[i]);
 }
 printf("Array elements are....\n");
 for(i=0;i<n;i++)
 {
  printf("%d\t",arr[i]);
 }
 sum=arr[0];
 big=arr[0];
 small=arr[0];
 for(i=1;i<n;i++)
 {
  sum=sum+arr[i];
  if(big<arr[i])
  {
   big=arr[i];
  }
  if(small>arr[i])
  {
   small=arr[i];
  }
 }
 avg=sum/n;
 printf("\nSum = %d",sum);
 printf("\nAverage = %d",avg);
 printf("\nBig = %d",big);
 printf("\nSmall = %d",small);
 return 0;
}
```

output

```
Enter array limit:4
Enter array elements...
Enter element[1]:6
Enter element[2]:3
Enter element[3]:2
Enter element[4]:7
```

```
Array elements are....
6   3   2   7
Sum = 18
Average = 4
Big = 7
Small = 2
```

2dtraverse

```c
#include <stdio.h>

int main(void) {
  int arr[5][5],r,c,i,j;
  printf("Enter how many rows in your 2D:");
  scanf("%d",&r);
  printf("Enter how many columns in your 2D:");
  scanf("%d",&c);
  printf("Enter %d x %d 2D array elements....\n",r,c);
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr[i][j]);
    }
  }
  printf("Traversing the 2D Array....\n");
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("%d\t",arr[i][j]);
    }
    printf("\n");
  }
  return 0;
}
```

output

```
Enter how many rows in your 2D:3
Enter how many columns in your 2D:3
Enter 3 x 3 2D array elements....
Enter element [1][1]:4
Enter element [1][2]:2
Enter element [1][3]:7
Enter element [2][1]:4
```

```
Enter element [2][2]:2
Enter element [2][3]:7
Enter element [3][1]:2
Enter element [3][2]:8
Enter element [3][3]:5
Traversing the 2D Array....
4   2   7
4   2   7
2   8   5
```

transpose

```c
#include <stdio.h>

int main(void) {
  int arr[5][5],r,c,i,j;
  printf("Enter how many rows in your 2D:");
  scanf("%d",&r);
  printf("Enter how many columns in your 2D:");
  scanf("%d",&c);
  printf("Enter %d x %d 2D array elements....\n",r,c);
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr[i][j]);
    }
  }
  printf("Traversing the 2D Array....\n");
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("%d\t",arr[i][j]);
    }
    printf("\n");
  }
  printf("Transpose of the 2D Array....\n");
  for(i=0;i<c;i++)
  {
    for(j=0;j<r;j++)
    {
      printf("%d\t",arr[j][i]);
```

```
    }
    printf("\n");
  }
  return 0;
}
```

output

Enter how many rows in your 2D:3

Enter how many columns in your 2D:2

Enter 3 x 2 2D array elements....

Enter element [1][1]:5

Enter element [1][2]:3

Enter element [2][1]:8

Enter element [2][2]:2

Enter element [3][1]:5

Enter element [3][2]:9

Traversing the 2D Array....

5 3

8 2

5 9

Transpose of the 2D Array....

5 8 5

3 2 9

Search2d

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

```c
int main(void) {
  int arr[5][5],r,c,i,j,num,flag=0;
  printf("Enter how many rows in your 2D:");
  scanf("%d",&r);
  printf("Enter how many columns in your 2D:");
  scanf("%d",&c);
  printf("Enter %d x %d 2D array elements....\n",r,c);
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr[i][j]);
    }
  }
  printf("Enter number for search:");
  scanf("%d",&num);
  printf("Traversing the 2D Array....\n");
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("%d\t",arr[i][j]);
    }
    printf("\n");
  }
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      if(num==arr[i][j])
      {
        printf("%d is found at position [%d][%d]\n",num,i+1,j+1);
        flag=1;
      }
    }
  }
  if(!flag)
  {
    printf("%d is not found in this array",num);
  }
  return 0;
}
```

Output

Enter how many rows in your 2D:2

Enter how many columns in your 2D:3

Enter 2 x 3 2D array elements....

Enter element [1][1]:5

Enter element [1][2]:2

Enter element [1][3]:8

Enter element [2][1]:3

Enter element [2][2]:6

Enter element [2][3]:4

Enter number for search:3

Traversing the 2D Array....

5 2 8

3 6 4

3 is found at position [2][1]

Add2d

```
#include <stdio.h>

int main(void) {
  int arr1[5][5],arr2[5][5],arr3[5][5],r,c,i,j;
  printf("Enter how many rows in your 2D:");
  scanf("%d",&r);
  printf("Enter how many columns in your 2D:");
  scanf("%d",&c);
  printf("Enter first %d x %d 2D array elements....\n",r,c);
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
```

```
    printf("Enter element [%d][%d]:",i+1,j+1);
    scanf("%d",&arr1[i][j]);
  }
}
printf("Enter second %d x %d 2D array elements....\n",r,c);
for(i=0;i<r;i++)
{
  for(j=0;j<c;j++)
  {
    printf("Enter element [%d][%d]:",i+1,j+1);
    scanf("%d",&arr2[i][j]);
  }
}
printf("Traversing the first 2D Array....\n");
for(i=0;i<r;i++)
{
  for(j=0;j<c;j++)
  {
    printf("%d\t",arr1[i][j]);
  }
  printf("\n");
}
printf("Traversing the second 2D Array....\n");
for(i=0;i<r;i++)
{
  for(j=0;j<c;j++)
  {
    printf("%d\t",arr2[i][j]);
  }
  printf("\n");
}
for(i=0;i<r;i++)
{
  for(j=0;j<c;j++)
  {
    arr3[i][j]=arr1[i][j]+arr2[i][j];
  }
}
printf("sum of the  2 Arrays....\n");
for(i=0;i<r;i++)
{
  for(j=0;j<c;j++)
  {
    printf("%d\t",arr3[i][j]);
```

```
    }
    printf("\n");
  }
 return 0;
}
```

Output

Enter how many rows in your 2D:2

Enter how many columns in your 2D:2

Enter first 2 x 2 2D array elements....

Enter element [1][1]:3

Enter element [1][2]:5

Enter element [2][1]:4

Enter element [2][2]:8

Enter second 2 x 2 2D array elements....

Enter element [1][1]:1

Enter element [1][2]:6

Enter element [2][1]:3

Enter element [2][2]:5

Traversing the first 2D Array....

3 5

4 8

Traversing the second 2D Array....

1 6

3 5

sum of the 2 Arrays....

4 11

7 13

product

```
#include <stdio.h>

int main(void) {
  int arr1[5][5],arr2[5][5],arr3[5][5],r1,c1,i,j,r2,c2,k;
  printf("Enter how many rows in your first 2D:");
  scanf("%d",&r1);
  printf("Enter how many columns in your first 2D:");
  scanf("%d",&c1);
  printf("Enter first %d x %d 2D array elements....\n",r1,c1);
  for(i=0;i<r1;i++)
  {
    for(j=0;j<c1;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr1[i][j]);
    }
  }
  printf("Enter how many rows in your second 2D:");
  scanf("%d",&r2);
  printf("Enter how many columns in your second 2D:");
  scanf("%d",&c2);
  printf("Enter second %d x %d 2D array elements....\n",r2,c2);
  for(i=0;i<r2;i++)
  {
    for(j=0;j<c2;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr2[i][j]);
    }
  }
  printf("Traversing the first 2D Array....\n");
  for(i=0;i<r1;i++)
  {
    for(j=0;j<c1;j++)
    {
      printf("%d\t",arr1[i][j]);
    }
    printf("\n");
```

```
 }
 printf("Traversing the second 2D Array....\n");
 for(i=0;i<r2;i++)
 {
  for(j=0;j<c2;j++)
  {
   printf("%d\t",arr2[i][j]);
  }
  printf("\n");
 }
 if(c1==r2)
 {
  for(i=0;i<r1;i++)
  {
   for(j=0;j<c2;j++)
   {
    arr3[i][j]=0;
    for(k=0;k<c1;k++)
    {
     arr3[i][j]=arr3[i][j]+arr1[i][k]*arr2[k][j];
    }
   }
  }
  printf("Product of two arrays...\n");
  for(i=0;i<r1;i++)
  {
   for(j=0;j<c2;j++)
   {
    printf("%d\t",arr3[i][j]);
   }
   printf("\n");
  }
 }
 else
 {
  printf("Row and column are mismatching");
 }
 return 0;
}
```

Output

Enter how many rows in your first 2D:2

Enter how many columns in your first 2D:3

Enter first 2 x 3 2D array elements....

Enter element [1][1]:3

Enter element [1][2]:2

Enter element [1][3]:3

Enter element [2][1]:1

Enter element [2][2]:4

Enter element [2][3]:2

Enter how many rows in your second 2D:3

Enter how many columns in your second 2D:2

Enter second 3 x 2 2D array elements....

Enter element [1][1]:5

Enter element [1][2]:3

Enter element [2][1]:2

Enter element [2][2]:1

Enter element [3][1]:4

Enter element [3][2]:3

Traversing the first 2D Array....

3 2 3

1 4 2

Traversing the second 2D Array....

5 3

2 1

4 3

Product of two arrays...

31 20

21 13

2ndtotal

```
#include <stdio.h>

int main(void) {
  int arr[5][5],r,c,i,j,sum=0,avg=0;
  printf("Enter how many rows in your 2D:");
  scanf("%d",&r);
  printf("Enter how many columns in your 2D:");
  scanf("%d",&c);
  printf("Enter first %d x %d 2D array elements....\n",r,c);
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr[i][j]);
    }
  }
  printf("Traversing the 2D Array....\n");
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("%d\t",arr[i][j]);
    }
    printf("\n");
  }
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      sum+=arr[i][j];
    }
  }
  avg=sum/(r*c);
  printf("\nSum= %d",sum);
  printf("\nAverage= %d",avg);
  return 0;
}
```

Output

Enter how many rows in your 2D:2

Enter how many columns in your 2D:2

Enter first 2 x 2 2D array elements....

Enter element [1][1]:3

Enter element [1][2]:1

Enter element [2][1]:2

Enter element [2][2]:4

Traversing the 2D Array....

3 1

2 4

Sum= 10

Average= 2

bigsmall

```
#include <stdio.h>

int main(void) {
  int arr[5][5],r,c,i,j,big=0,small=0;
  printf("Enter how many rows in your 2D:");
  scanf("%d",&r);
  printf("Enter how many columns in your 2D:");
  scanf("%d",&c);
  printf("Enter first %d x %d 2D array elements....\n",r,c);
  for(i=0;i<r;i++)
  {
    for(j=0;j<c;j++)
    {
      printf("Enter element [%d][%d]:",i+1,j+1);
      scanf("%d",&arr[i][j]);
```

```
  }
 }
 printf("Traversing the 2D Array....\n");
 for(i=0;i<r;i++)
 {
  for(j=0;j<c;j++)
  {
   printf("%d\t",arr[i][j]);
  }
  printf("\n");
 }
 big=arr[0][0];
 small=arr[0][0];
 for(i=0;i<r;i++)
 {
  for(j=0;j<c;j++)
  {
   if(arr[i][j]>big)
   {
    big=arr[i][j];
   }
   if(arr[i][j]<small)
   {
    small=arr[i][j];
   }
  }
 }
  printf("\nBiggest value = %d",big);
 printf("\nSmallest value = %d",small);
 return 0;
}
```

Output

Enter how many rows in your 2D:3

Enter how many columns in your 2D:3

Enter first 3 x 3 2D array elements....

Enter element [1][1]:54

Enter element [1][2]:23

Enter element [1][3]:64

Enter element [2][1]:2

Enter element [2][2]:3

Enter element [2][3]:4

Enter element [3][1]:2

Enter element [3][2]:43

Enter element [3][3]:65

Traversing the 2D Array....

54 23 64

2   3   4

2   43 65

Biggest value = 65

Smallest value = 2