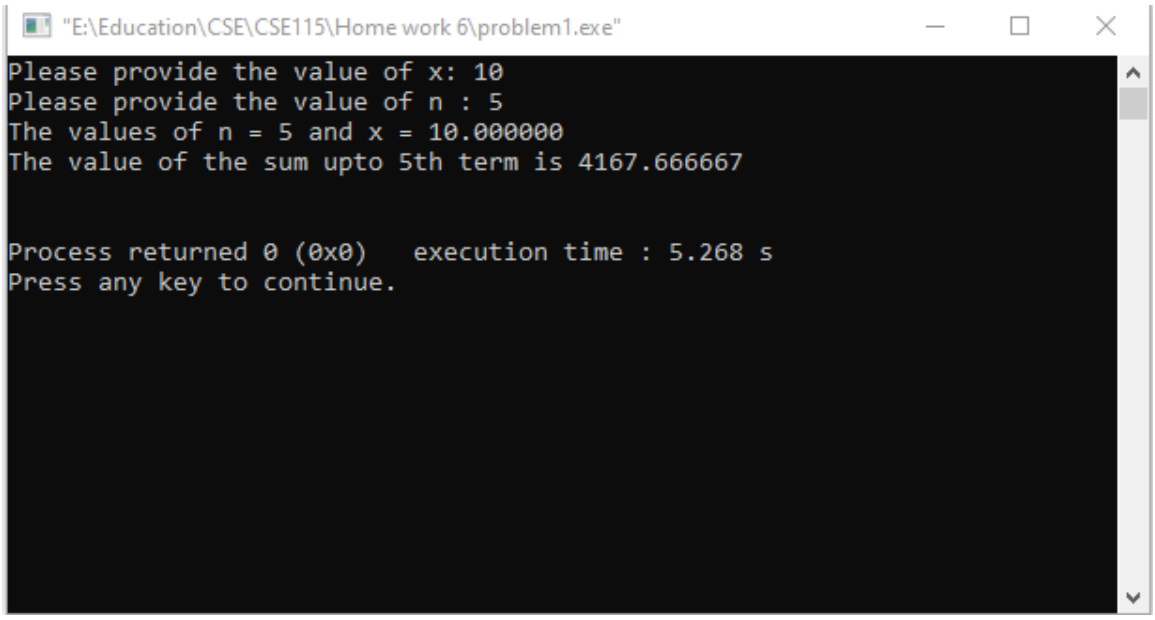
Home Work 6

1.

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

int fact(int n)
{
  int factn=1, i;
  for(i = 1; i<=n; i++)
  {
     factn *= i;
  }
  return factn;
}

int main()
{
  int n, i;
  double x, sum = 1.0;
  printf("Please provide the value of x: ");
  scanf("%lf", &x);
  printf("Please provide the value of n : ");
  scanf("%d", &n);
  printf("The values of n = %d and x = %lf\n", n, x);
```

```
  for(i=1; i<=n; i++)
  {
     sum += (pow(x, n)*1.0)/(fact(n)*1.0);
  }
  printf("The value of the sum upto %dth term is %lf\n\n", n, sum);
}
```

Output:

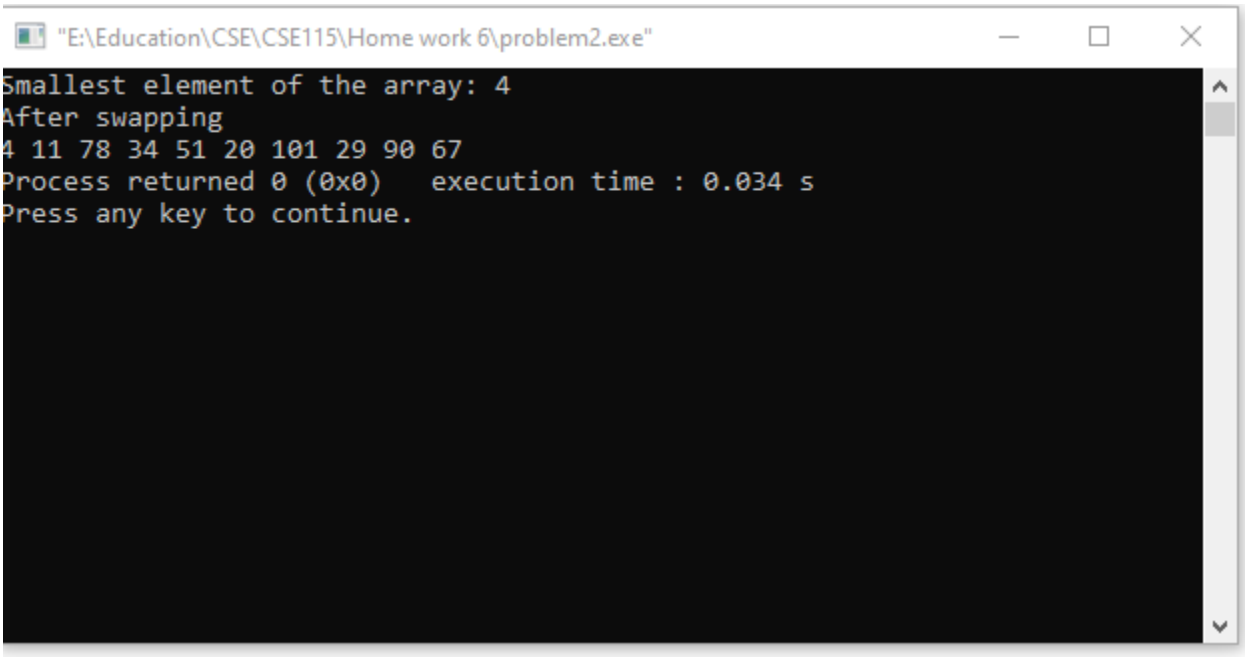


2.

```
#include <stdio.h>

int main()
{
int arr1[]={20,11,78,34,51,4,101,29,90,67};
```

```
int length=sizeof(arr1)/sizeof(arr1[0]);
int min=arr1[0];
int index=0;
for(int i=0;i<length;i++)
{
if(min>arr1[i])
{
min=arr1[i];
index=i;
}
}
printf("Smallest element of the array: %d\n",min);
int temp=arr1[0];
arr1[0]=arr1[index];
arr1[index]=temp;
printf("After swapping\n");
for(int i=0;i<length;i++)
{
printf("%d ",arr1[i]);
}

return 0;
}
```

Output:

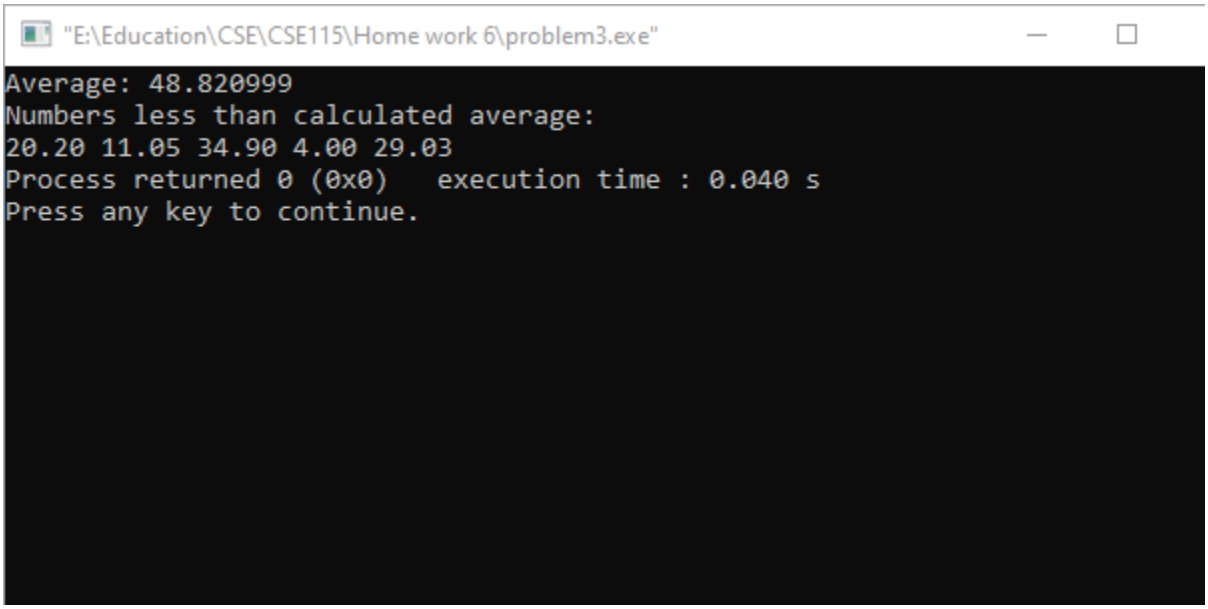


3.

```
#include <stdio.h>


int main()
{
float arr1[]={20.2,11.05,78.1,34.9,51.11,4.0,101.8,29.03,90.42,67.6};
int length=sizeof(arr1)/sizeof(arr1[0]);
float sum=0;
for(int i=0;i<length;i++)
{
sum+=arr1[i];
}
```

```
float average=sum/length;
printf("Average: %f",average);
printf("\nNumbers less than calculated average:\n");
for(int i=0;i<length;i++)
{
if(average>arr1[i])
{
printf("%.2f ",arr1[i]);
}
}
return 0;
}
```

Output:



4.

```
#include <stdio.h>

int main()
{
int arr1[5][5],i,j,temp;
printf("Enter any 5x5 matrix:");
for(i=0;i<=4;i++)
{
for(j=0;j<=4;j++)
{
scanf("%d",&arr1[i][j]);
}
printf("\n");
}

printf("original matrix:\n");
for(i=0;i<=4;i++)
{
for(j=0;j<=4;j++)
{
printf("%d ",arr1[i][j]);
}
printf("\n");
```

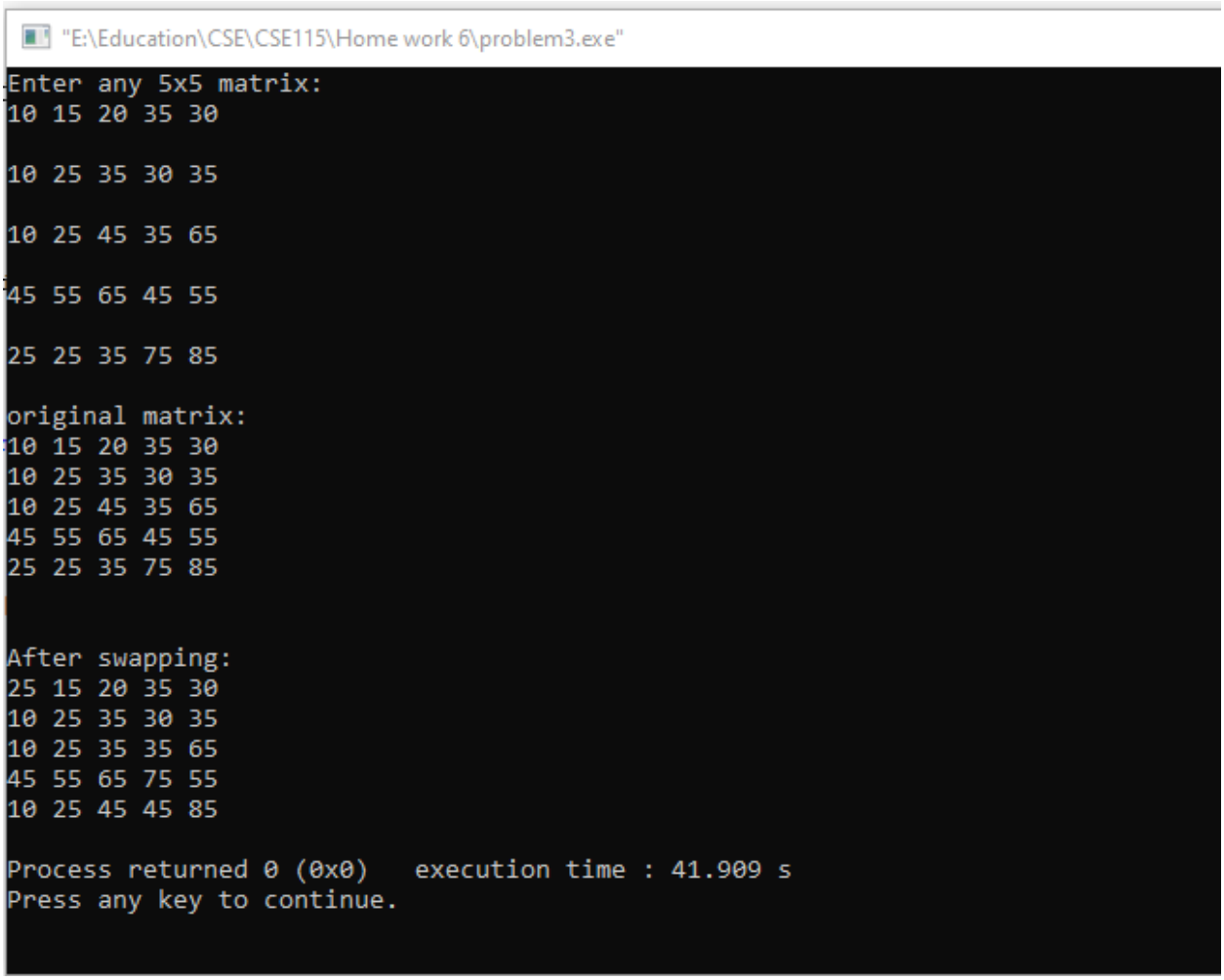
```
}
int k=4,m=0;
for(i=0;i<=4;i++)
{
for(j=0;j<=4;j++)
{
if (i==j)
{
temp=arr1[i][j];
arr1[i][j]=arr1[k][m];
arr1[k][m]=temp;
m++;
}
}
}

printf("\n\nAfter swapping:\n");
for(i=0;i<=4;i++)
{
for(j=0;j<=4;j++)
{
printf("%d ",arr1[i][j]);
}
printf("\n");
```

}

return 0;

}

Output:



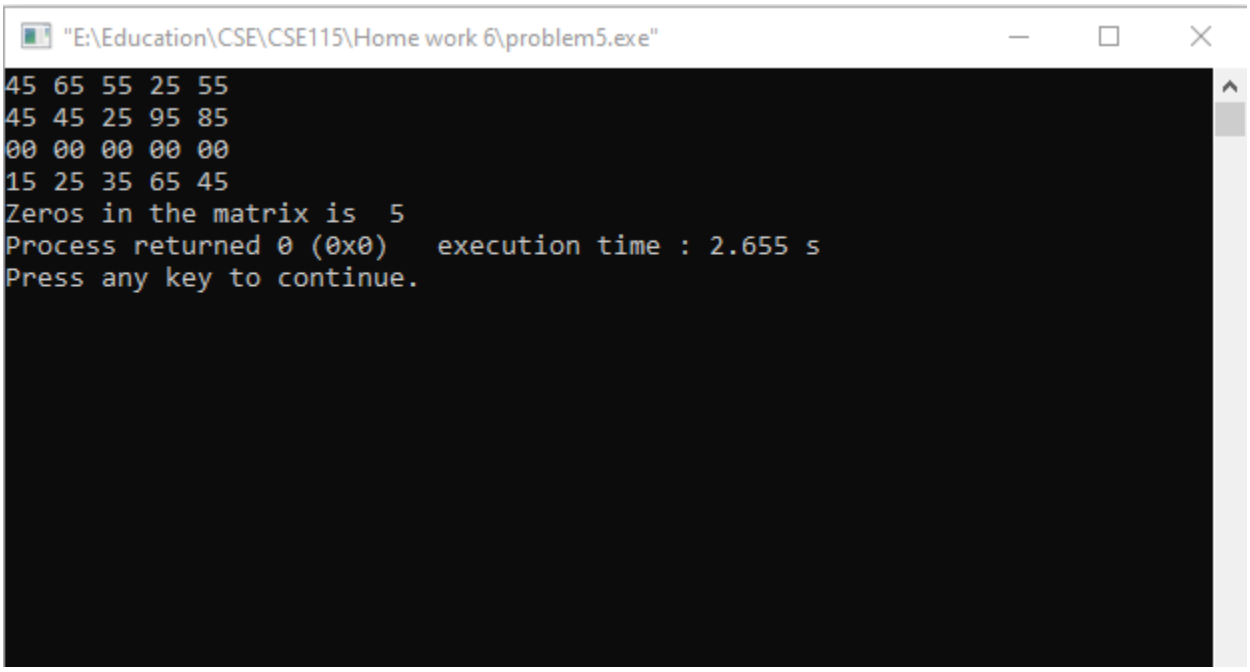
5.

```
#include <stdio.h>

int main()

{

   int array[5][5];



   for(int i=0;i<4;i++){

      for(int j=0;j<5;j++){

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

      }

   }
```

```
int calculate=0;



for(int i=0;i<4;i++){

   for(int j=0;j<5;j++){

      if(array[i][j]==0){

         calculate++;

      }

   }

}









printf("Zeros in the matrix is  %d", calculate);

return 0;
```

}

Output:



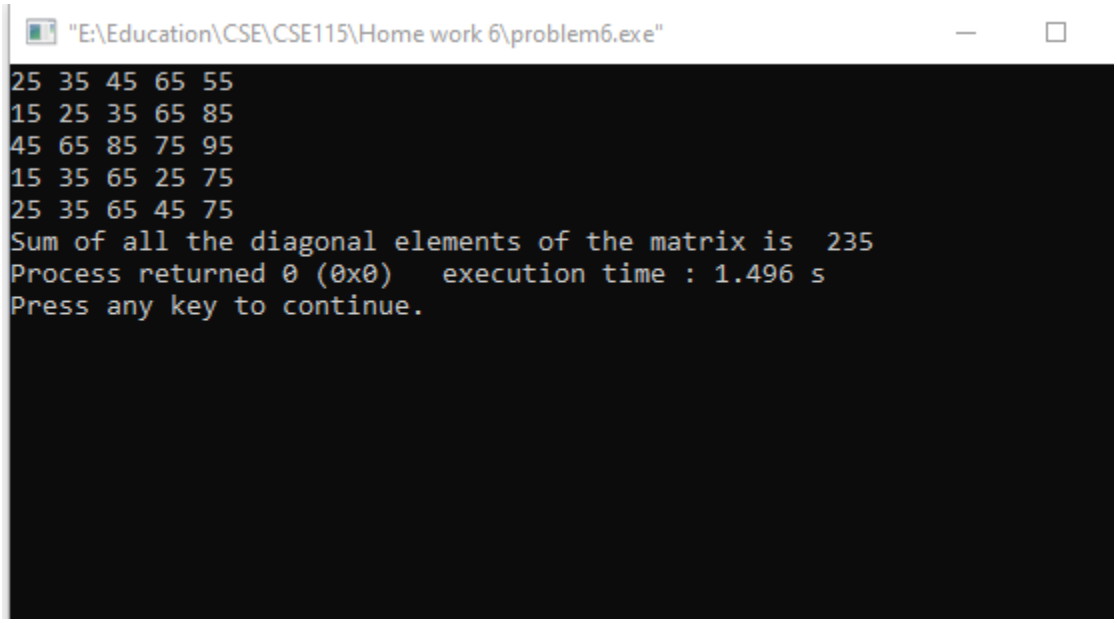
6.

```
#include <stdio.h>

int main()

{
```

```
int calculate[5][5];




for(int i=0;i<5;i++){

   for(int j=0;j<5;j++){

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

   }

}




int add=0;



for(int i=0;i<5;i++){
```

```
        for(int j=i;j<5;j++){

            if(i==j){

                add+=calculate[i][j];

                break;

            }

        }

    }

    printf("Sum of the diagonal elements matrix is  %d", add);

    return 0;

}
```

Output:


"E:\Education\CSE\CSE115\Home work 6\problem6.exe"
25 35 45 65 55
15 25 35 65 85
45 65 85 75 95
15 35 65 25 75
25 35 65 45 75
Sum of all the diagonal elements of the matrix is 235
Process returned 0 (0x0)   execution time : 1.496 s
Press any key to continue.