

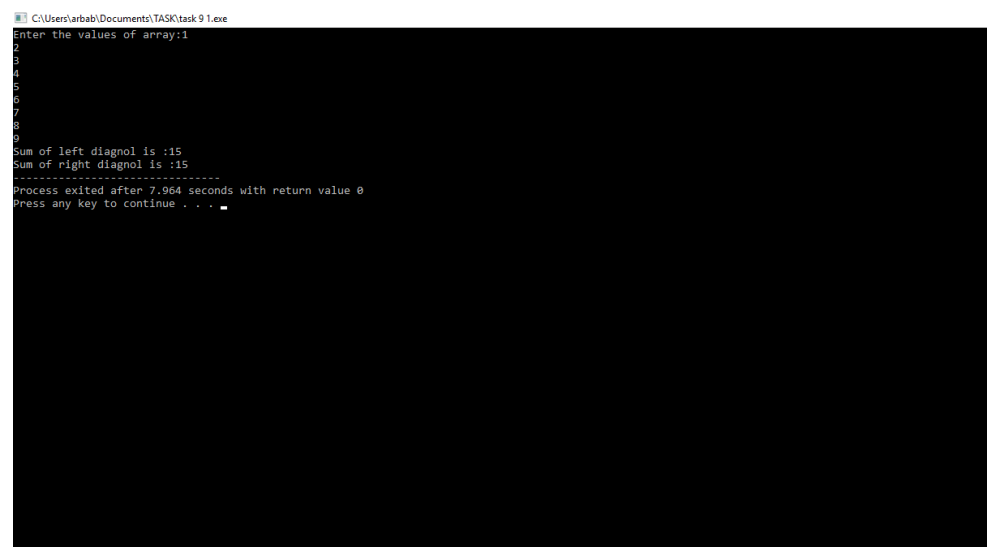
Fundamentals of programming

Lab task 9

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CLASS	ME-15
SECTION	A

TASK 1

```
#include<iostream>
using namespace std;
int main()
{
    int a[3][3],sum1(0),sum2(0);
    cout<<"Enter the values of array:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>a[i][j];
        }
    }
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            if(i==j)
            {
                sum1=sum1+a[i][j];
            }
            if(i+j==2)
            {
                sum2=sum2+a[i][j];
            }
            else
            {
                continue;
            }
        }
    }
    cout<<"Sum of left diagonol is :"<<sum1<<endl;
    cout<<"Sum of right diagonol is :"<<sum2;
}
```



```
C:\Users\arbab\Documents\TASK\task 9 1.exe
Enter the values of array:1
2
3
4
5
6
7
8
9
Sum of left diagonol is :15
Sum of right diagonol is :15
-----
Process exited after 7.964 seconds with return value 0
Press any key to continue . . .
```

TASK 2

```
#include<iostream>
using namespace std;
void add(int arr[3][3],int arr2[3][3])
{
    int add[3][3];
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            add[i][j]=arr[i][j]+arr2[i][j];
            cout<<add[i][j];
        }
        cout<<endl;
    }
}
int main()
{
    int a[3][3],b[3][3],sum[3][3];
    cout<<"Enter the values for array a:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>a[i][j];
        }
    }
    cout<<"Enter the values for array b:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>b[i][j];
        }
    }
    add(a,b);
}
```

C:\Users\arbab\Documents\TASK\task 9 2.exe

```
Enter the values for array a:1
2
3
4
5
4
3
2
1
Enter the values for array b:3
4
3
2
5
1
2
3
4
466
6105
555
-----
Process exited after 19.26 seconds with return value 0
Press any key to continue . . .
```

TASK 3

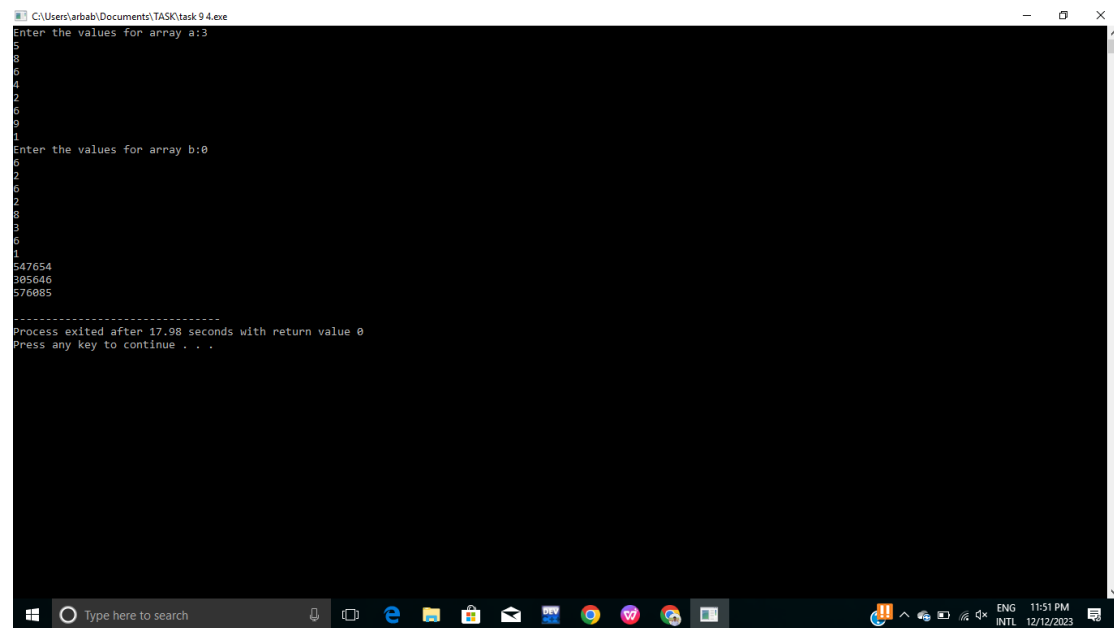
```
#include<iostream>
using namespace std;
int transpose(int arr[3][3])
{
    int temp;
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {if(i<j)
        {
            temp=arr[i][j];
            arr[i][j]=arr[j][i];
            arr[j][i]=temp;
        }
        }
    }
}
int main()
{
    int a[3][3],temp;
    cout<<"Enter the values of element of array:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>a[i][j];
        }
    }
    transpose(a);
    cout<<"Transpose of matrix a is : "<<endl;
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cout<<a[i][j];
        }
        cout<<endl;
    }
}
```

```
Enter the values of element of array:3
5
7
9
4
2
8
4
0
Transpose of matrix a is :
398
544
720
-----
Process exited after 9.854 seconds with return value 0
Press any key to continue . . .
```

TASK 4

```
#include<iostream>
using namespace std;
int multiplication(int arr[3][3],int arr2[3][3])
{
    int product,sum[3][3]={0,0,0},{0,0,0},{0,0,0};
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            product=arr[i][j]*arr2[j][0];
            sum[i][0]=sum[i][0]+product;
        }
        for(int i=0;i<3;i++)
        {
            for(int j=0;j<3;j++)
            {
                product=arr[i][j]*arr2[j][1];
                sum[i][1]=sum[i][1]+product;
            }
            for(int i=0;i<3;i++)
            {
                for(int j=0;j<3;j++)
                {
                    product=arr[i][j]*arr2[j][2];
                    sum[i][2]=sum[i][2]+product;
                }
            }
        }
        for(int i=0;i<3;i++)
        {
            for(int j=0;j<3;j++)
            {
                cout<<sum[i][j];
            }
            cout<<endl;
        }
    }
}
int main()
{
    int a[3][3],b[3][3];
    cout<<"Enter the values for array a:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>a[i][j];
        }
    }
    cout<<"Enter the values for array b:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>b[i][j];
        }
    }
}
```

```
    multiplication(a,b);  
}
```

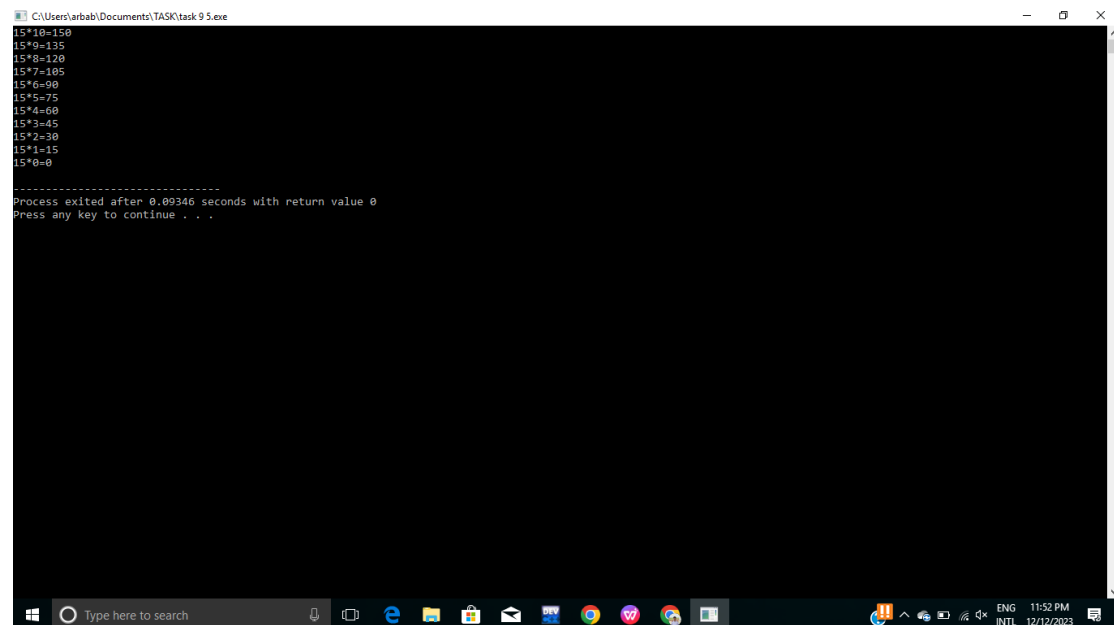


```
C:\Users\arbab\Documents\TASK\task 9 4.exe  
Enter the values for array a:3  
5  
8  
6  
Enter the values for array b:8  
2  
6  
2  
8  
3  
6  
1  
5  
547654  
885646  
576085  
-----  
Process exited after 17.98 seconds with return value 0  
Press any key to continue . . .
```

TASK 5

```
#include<iostream>
using namespace std;
void recursion(int a,int n)
{
if(n>=0)
{
    int product;
    product=n*a;
    cout<<a<<"*"<<n<<"="<<product<<endl;
    recursion(a,n-1);
}
}

int main()
{
int num(15),times(10);
recursion(15,10);
return 0;
}
```



```
C:\Users\arbab\Documents\TASK\task 9.5.exe
15*10=150
15*9=135
15*8=120
15*7=105
15*6=90
15*5=75
15*4=60
15*3=45
15*2=30
15*1=15
15*0=0

-----
Process exited after 0.00346 seconds with return value 0
Press any key to continue . . .
```