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Section. A

Reg No: 2021 BSE 032

Course: Programming Fundamentals

LAB 7 and 8

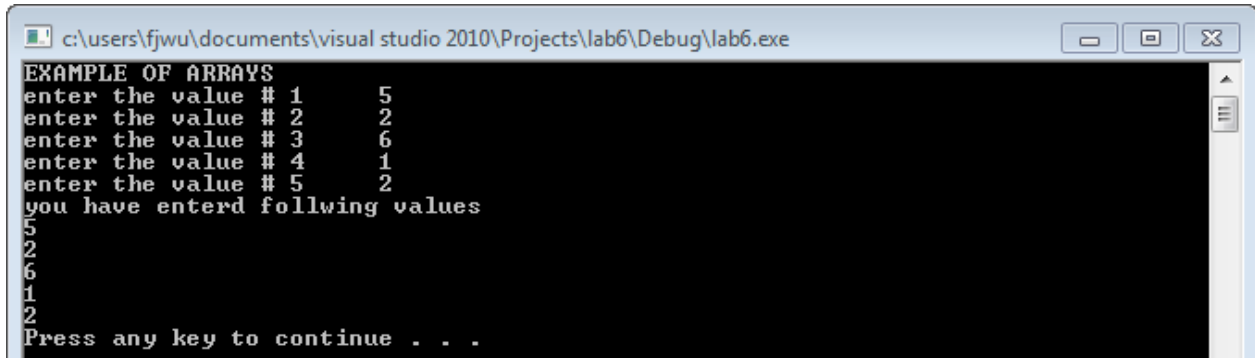
TASK#1

Sample problem#1

```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    cout<<"EXAMPLE OF ARRAYS"<<endl;
    int a[5];
    for(int i=0;i<5;i++)
    {
        cout<<"enter the value # "<<i+1<<"\t";
        cin>>a[i];
    }
    cout<<"you have entered following
values"<<endl; for(int j=0;j<5;j++)
    {
        cout<<a[j]<<endl;
    }
    system("pause");

    return 0;
}
```

OUTPUT

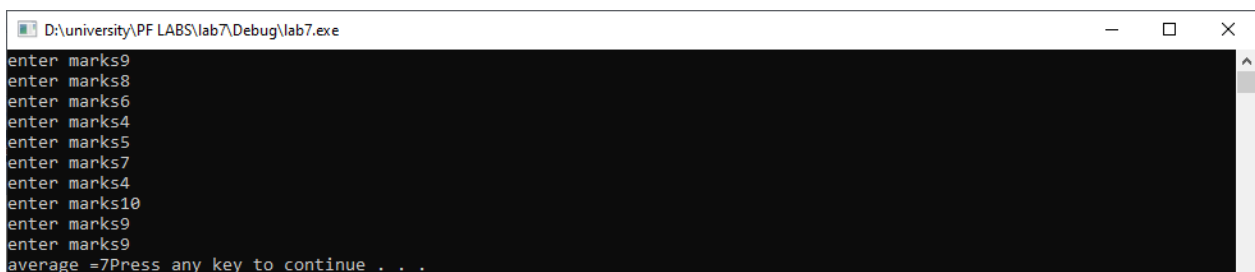


```
c:\users\fjwu\documents\visual studio 2010\Projects\lab6\Debug\lab6.exe
EXAMPLE OF ARRAYS
enter the value # 1      5
enter the value # 2      2
enter the value # 3      6
enter the value # 4      1
enter the value # 5      2
you have entered following values
5
2
6
1
2
Press any key to continue . . .
```

Sample problem#2

```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int avg, sum = 0 ;
    int i ;
    int marks[10] ; /* array declaration
    */ for ( i = 0 ; i <= 9 ; i++ )
    {
        cout<<"enter marks";
        cin>>marks[i]; /* store data in array */
    }
    for ( i = 0 ; i <= 9 ; i++ )
        sum = sum + marks[i] ; /* read data from an array*/
    avg = sum / 10 ;
    cout<<"average ="<<avg ;
    system("pause");
    return 0;
}
```

OUTPUT



```
D:\university\PF LABS\lab7\Debug\lab7.exe
enter marks9
enter marks8
enter marks6
enter marks4
enter marks5
enter marks7
enter marks4
enter marks10
enter marks9
enter marks9
average =7Press any key to continue . . .
```

TASK#2

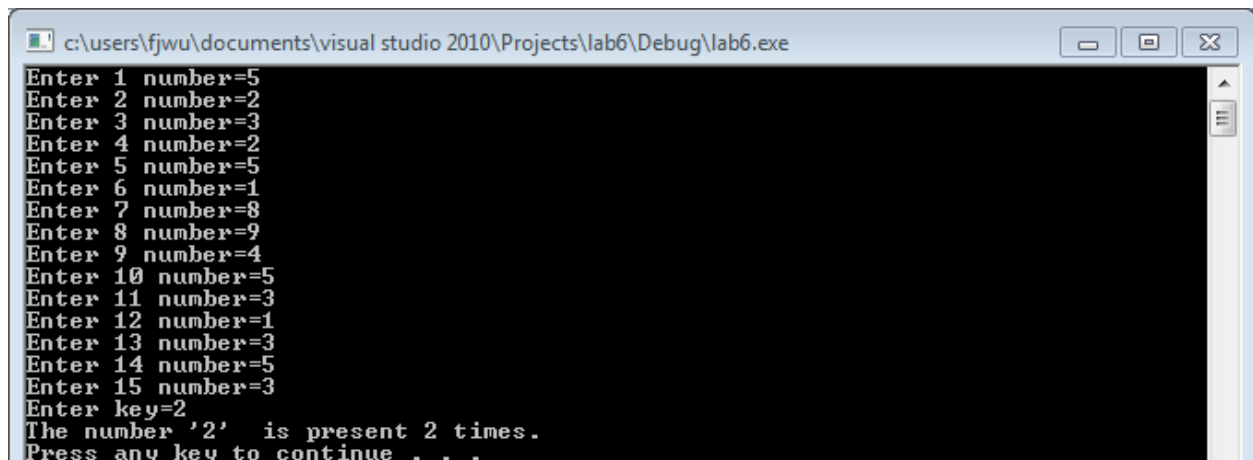
Create a program which take 15 input from user. Ask the user to enter a key your program should search for the key if it is present in array? If yes then also print the

number of times the key is present?

CODE:

```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a[15],key,count=0;
    for(int i=0;i<15;i++)
    {
        cout<<"Enter "<<i+1<<" number=";
        cin>>a[i];
    }
    cout<<"Enter key=";
    cin>>key;
    for(int i=0;i<15;i++)
    {
        if(key==a[i])
            count++;
    }
    cout<<"The number '"<<key<<" is present "<<count<<" times."<<endl;
    system("pause");
    return 0;
}
```

OUTPUT



```
c:\users\fjwu\documents\visual studio 2010\Projects\lab6\Debug\lab6.exe
Enter 1 number=5
Enter 2 number=2
Enter 3 number=3
Enter 4 number=2
Enter 5 number=5
Enter 6 number=1
Enter 7 number=8
Enter 8 number=9
Enter 9 number=4
Enter 10 number=5
Enter 11 number=3
Enter 12 number=1
Enter 13 number=3
Enter 14 number=5
Enter 15 number=3
Enter key=2
The number '2' is present 2 times.
Press any key to continue . . .
```

TASK#3

Create a C++ program to take 13 inputs from user in an array. Your program should count the number of zeros, no of positive integers, no of negative integers entered by user.

CODE:

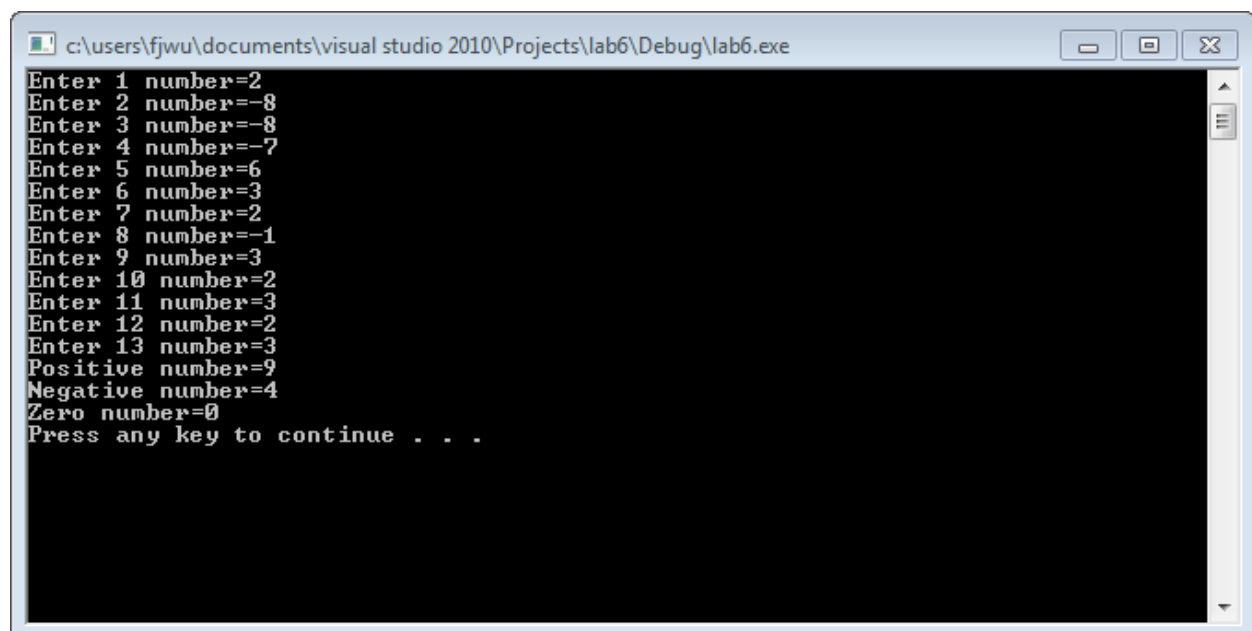
```
#include "stdafx.h"
```

```

#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a[13],pn=0,nn=0,zn=0;
    for(int i=0;i<13;i++)
    {
        cout<<"Enter "<<i+1<<" number=";
        cin>>a[i];
    }
    for(int i=0;i<13;i++)
    {
        if(a[i]>0)
            pn++;
        else if(a[i]<0)
            nn++;
        else
            zn++;
    }
    cout<<"Positive number="<<pn<<endl;
    cout<<"Negative
number="<<nn<<endl; cout<<"Zero
number="<<zn<<endl; system("pause");
    return 0;
}

```

OUTPUT



```

c:\users\fjwu\documents\visual studio 2010\Projects\lab6\Debug\lab6.exe
Enter 1 number=2
Enter 2 number=-8
Enter 3 number=-8
Enter 4 number=-7
Enter 5 number=6
Enter 6 number=3
Enter 7 number=2
Enter 8 number=-1
Enter 9 number=3
Enter 10 number=2
Enter 11 number=3
Enter 12 number=2
Enter 13 number=3
Positive number=9
Negative number=4
Zero number=0
Press any key to continue . . .

```

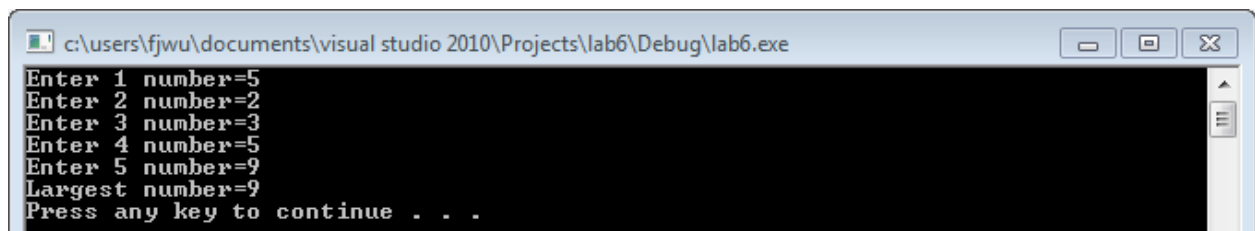
TASK#4

Create a program to find the largest number from array of 5 elements entered by user.

CODE:

```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a[5],lar;
    for(int i=0;i<5;i++)
    {
        cout<<"Enter "<<i+1<<" number=";
        cin>>a[i];
    }
    lar=a[0];
    for(int i=1;i<5;i++)
    {
        if(a[i]>lar)
            lar=a[i];
    }
    cout<<"Largest number="<<lar<<endl;
    system("pause");
    return 0;
}
```

OUTPUT



```
c:\users\fjwu\documents\visual studio 2010\Projects\lab6\Debug\lab6.exe
Enter 1 number=5
Enter 2 number=2
Enter 3 number=3
Enter 4 number=5
Enter 5 number=9
Largest number=9
Press any key to continue . . .
```

TASK#5

Write a program to take 20 values from user in an array. your code should divide the array in two equal parts

CODE:

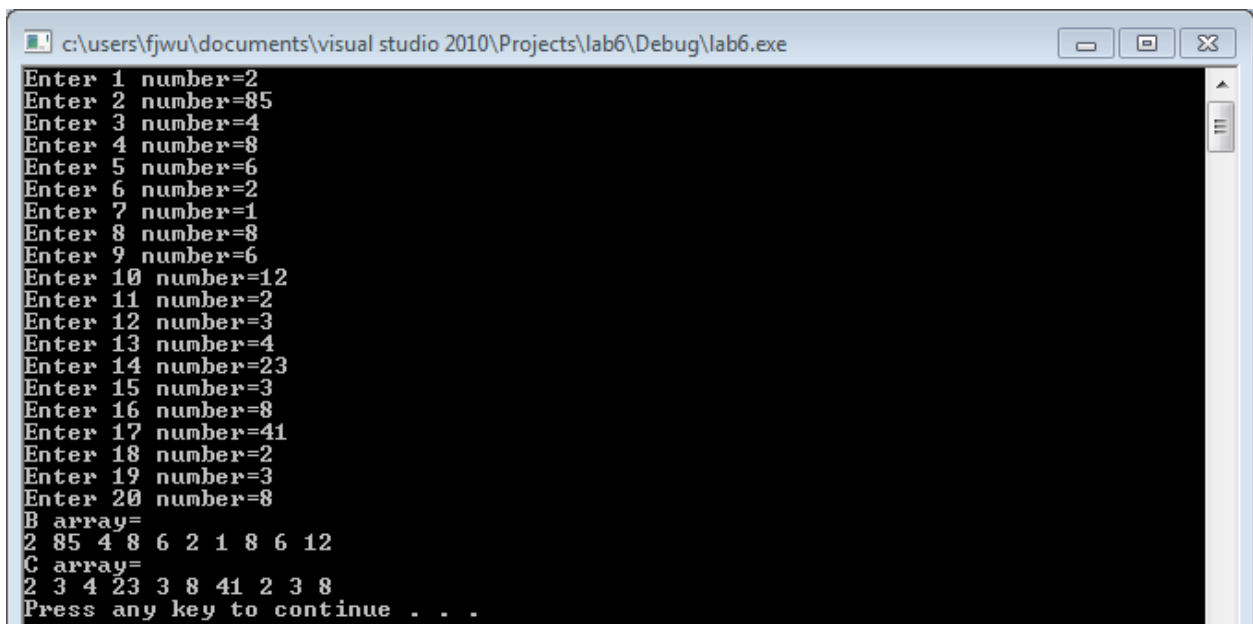
```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int A[20],B[10],C[10];
```

```

for(int i=0;i<20;i++)
{
    cout<<"Enter "<<i+1<<" number=";
    cin>>A[i];
}
for(int i=0;i<10;i++)
{
    B[i]=A[i];
}
for(int i=0;i<10;i++)
{
    C[i]=A[i+10];
}
cout<<"B array="<<endl;
for(int i=0;i<10;i++)
{
    cout<<B[i]<<" ";
}
cout<<endl;
cout<<"C array="<<endl;
for(int i=0;i<10;i++)
{
    cout<<C[i]<<" ";
}
cout<<endl;
system("pause");
return 0;
}

```

OUTPUT



```

c:\users\fjwu\documents\visual studio 2010\Projects\lab6\Debug\lab6.exe
Enter 1 number=2
Enter 2 number=85
Enter 3 number=4
Enter 4 number=8
Enter 5 number=6
Enter 6 number=2
Enter 7 number=1
Enter 8 number=8
Enter 9 number=6
Enter 10 number=12
Enter 11 number=2
Enter 12 number=3
Enter 13 number=4
Enter 14 number=23
Enter 15 number=3
Enter 16 number=8
Enter 17 number=41
Enter 18 number=2
Enter 19 number=3
Enter 20 number=8
B array=
2 85 4 8 6 2 1 8 6 12
C array=
2 3 4 23 3 8 41 2 3 8
Press any key to continue . . .

```

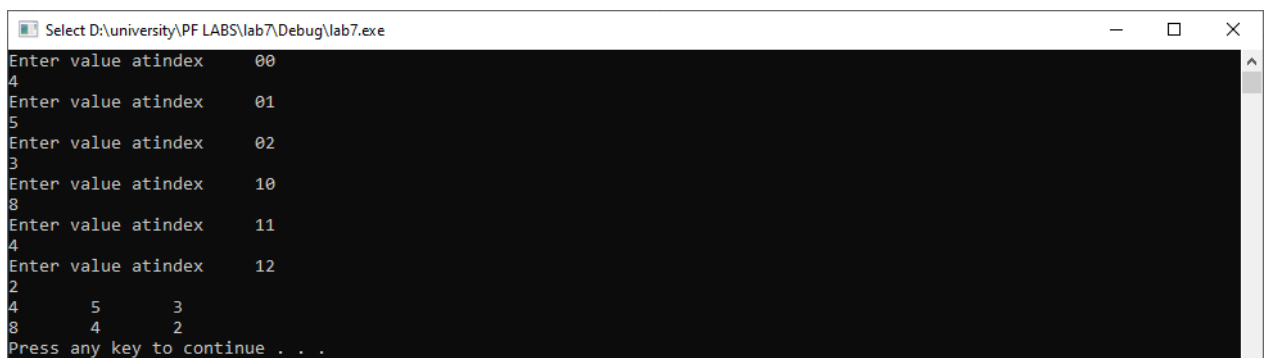
LAB#8

TASK#1

Sample problem#1

```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int A[2][3];
    // taking input in 2D array from
    user for(int i=0;i<2;i++)
    {
        for(int j=0;j<3;j++)
        {
            cout<<"Enter value atindex \t" <<i<<j<<endl;
            cin>>A[i][j];
        }
    }
    //Display value stored in 2D
    Array for(int w=0;w<2;w++)
    {
        for(int x=0;x<3;x++)
        {
            cout<<A[w][x]<<"\t";
        }
        cout<<endl;
    }
    system("pause");
    return 0;
}
```

OUTPUT



```
Select D:\university\PF LABS\lab7\Debug\lab7.exe
Enter value atindex    00
4
Enter value atindex    01
5
Enter value atindex    02
3
Enter value atindex    10
8
Enter value atindex    11
4
Enter value atindex    12
2
      5      3
      4      2
      8
Press any key to continue . . .
```

TASK#2

Create program which take two matrices of size 3x3 from the user, your program should calculate the sum of both the matrices and display the result on the screen in the form of matrix

CODE

```
#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a[3][3],b[3][3],sum[3][3];
    cout<<"Enter 9 numbers of first matrice of [3][3]:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>a[i][j];
        }
    }
    cout<<"Enter 9 numbers of second matrice of [3][3]:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>b[i][j];
        }
    }
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            sum[i][j]=a[i][j]+b[i][j];
        }
    }
    cout<<"First Matrice"<<endl;
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cout<<a[i][j]
            ; cout<<"\t";
        }
        cout<<endl;
    }
```



```

    }
    cout<<"Second matrice:"<<endl;
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cout<<b[i][j];
            cout<<"\t";
        }
        cout<<endl;
    }
    cout<<"Sum of two
matrices"<<endl; for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cout<<sum[i][j];
            cout<<"\t";
        }
        cout<<endl;
    }
    system("pause");
    return 0;
}

```

OUTPUT

```
D:\university\PF LABS\lab7\Debug\lab7.exe
Enter 9 numbers of first matrice of [3][3]:5
5
4
3
5
3
8
3
9
Enter 9 numbers of second matrice of [3][3]:3
4
2
1
9
8
5
4
0
First Matrice
5      5      4
3      5      3
8      3      9
Second matrice:
3      4      2
1      9      8
5      4      0
Sum of two matrices
8      9      6
4      14     11
13     7      9
Press any key to continue . . .
```

TASK#3

Create program which take two matrices of size 6x6 from the user, your program should perform the subtraction of the matrices and display the result on the screen in the form of matrix

CODE

```
#include "stdafx.h"
#include<iostream>
using namespace
std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a[3][3],b[3][3],sub[3][3];
    cout<<"Enter 9numbersof first matrice of [3][3]:";
    for(int i=0;i<3;i++)
    {
        for(int j=0;j<3;j++)
        {
            cin>>a[i][j];
        }
    }
}
```

```

cout<<"Enter 9 numbers of second matrice of
[3][3]."; for(int i=0;i<3;i++)
{
    for(int j=0;j<3;j++)
    {
        cin>>b[i][j];
    }
}
for(int i=0;i<3;i++)
{
    for(int j=0;j<3;j++)
    {
        sub[i][j]=a[i][j]+b[i][j];
    }
}
cout<<"First Matrice"<<endl;
for(int i=0;i<3;i++)
{
    for(int j=0;j<3;j++)
    {
        cout<<a[i][j]
        ; cout<<"\t";
    }
    cout<<endl;
}
cout<<"Second matrice:"<<endl;
for(int i=0;i<3;i++)
{
    for(int j=0;j<3;j++)
    {
        cout<<b[i][j];
        cout<<"\t";
    }
    cout<<endl;
}
cout<<"Subtraction of two matrices"<<endl; for(int i=0;i<3;i++)
{
    for(int j=0;j<3;j++)
    {
        cout<<sub[i][j]
        ; cout<<"\t";
    }
    cout<<endl;
}
system("pause");

```

```

    return 0;
}

```

OUTPUT

```

D:\university\PF LABS\lab7\Debug\lab7.exe
Enter 9 numbers of first matrix of [3][3]:4
5
3
4
2
3
5
2
2
9
Enter 9 numbers of second matrix of [3][3]:5
2
0
5
2
3
1
8
4
4
First Matrix
4      5      3
4      2      3
5      2      9
Second matrix:
5      2      0
5      2      3
1      8      4
Subtraction of two matrices
9      7      3
9      4      6
6      10     13
Press any key to continue . . .

```

TASK#4

Create program to create a 3D Array having size [3][2][2] take values from user then display the values.

CODE:

```

#include "stdafx.h"
#include<iostream>
using namespace std;
int _tmain(int argc, _TCHAR* argv[])
{
    int a[3][2][2];
    cout<<"Enter numbers for 3 dimensional
    array="; for(int i=0;i<3;i++)
    {
        for(int j=0;j<2;j++)
        {
            for(int k=0;k<2;k++)
            {
                cin>>a[i][j][k];
            }
        }
    }
}

```

```

        cout<<"Three dimensional
        Array"<<endl; for(int i=0;i<3;i++)
        {
            for(int j=0;j<2;j++)
            {
                for(int k=0;k<2;k++)
                {
                    cout<<a[i][j][k];
                    cout<<"\t";
                }
                cout<<endl;
            }
            cout<<endl;
        }

        system("pause");
        return 0;
    }

```

OUTPUT

```

D:\university\PF LABS\lab7\Debug\lab7.exe
Enter numbers for 3 dimensional array=2
3
4
2
6
8
9
0
4
2
6
9
Three dimensional Array
2      3
4      2
6      8
9      0
4      2
6      9
Press any key to continue . . .

```