

# OOP LAB

**Lab Report No. 01**

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**Section: B**

**Batch: 18**

**Department: CSE**

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**University of Engineering and Technology Peshawar**

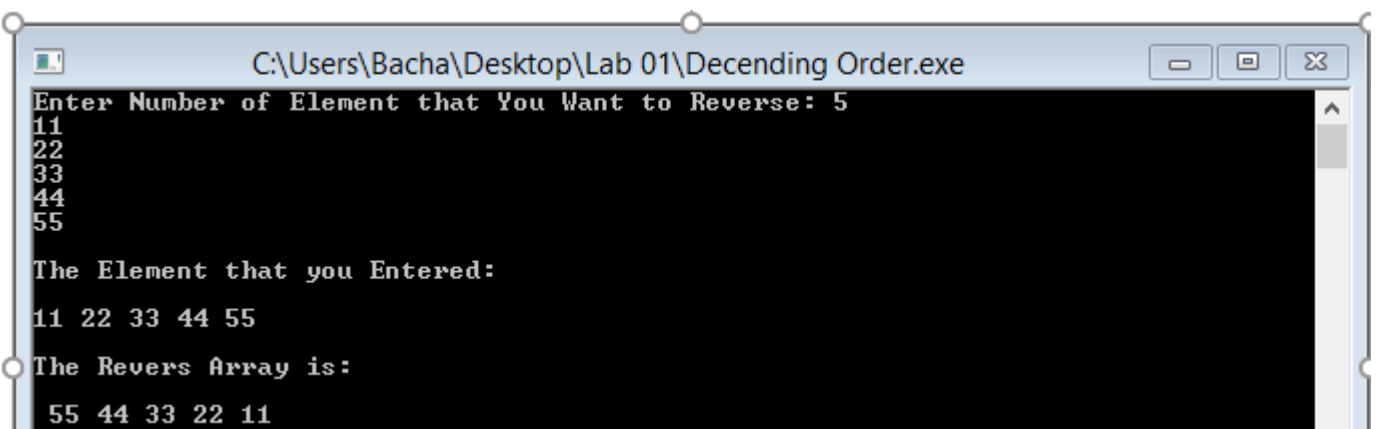
## **Task 01:**

**CODE:**

```
#include<iostream>
#include<stdlib.h>
void swp(int &a,int &b);
using namespace std;
int main()
{
    int i,j,size;
    cout<<"Enter Number of Element that You Want to Reverse: ";
    cin>>size;
    int arr[size];
    for(i=0;i<size;i++)
    {
        cin>>arr[i];
    }
    cout<<endl<<"The Element that you Entered: "<<endl<<endl;
    for(i=0;i<size;i++)
    {
        cout<<arr[i]<<" ";
    }
    cout<<endl;
    for(i=0;i<size;i++)
    {
        for(j=0;j<size-1;j++)
        {
            if(arr[j]<arr[j+1])
                swp(arr[j],arr[j+1]);
        }
    }
    cout<<endl<<"The Revers Array is: "<<endl<<endl;
    for(i=0;i<size;i++)
    {
        cout<<" "<<arr[i];
    }
}

void swp(int &a,int &b)
{
    int temp;
    temp=a;
    a=b;
    b=temp;
}
```

**RUN:**



```
C:\Users\Bacha\Desktop\Lab 01\Decending Order.exe
Enter Number of Element that You Want to Reverse: 5
11
22
33
44
55

The Element that you Entered:
11 22 33 44 55

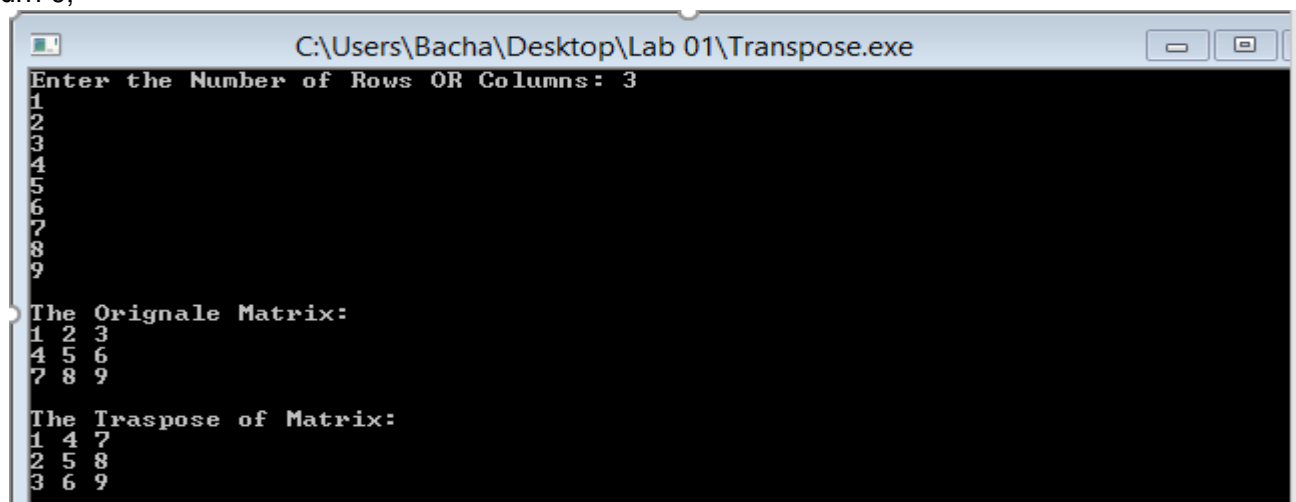
The Revers Array is:
55 44 33 22 11
```

## **Task 2 : 1.2.3 Activity**

### **CODE:**

```
#include<iostream>
using namespace std;
int main()
{
    int n,i,j;
    cout<<"Enter the Number of Rows OR Columns: ";
    cin>>n;
    int arr[n][n];
    int arrt[n][n];
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            cin>>arr[i][j];
        }
    }
    cout<<endl;
    cout<<"The Orignale Matrix: "<<endl;
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            cout<<arr[i][j]<<" ";
        }
        cout<<endl;
    }
    cout<<endl;
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            arrt[i][j]=arr[j][i];
        }
    }
    cout<<"The Traspose of Matrix: "<<endl;
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            cout<<arrt[i][j]<<" ";
        }
        cout<<endl;
    }
    return 0;
}
```

### **RUN:**

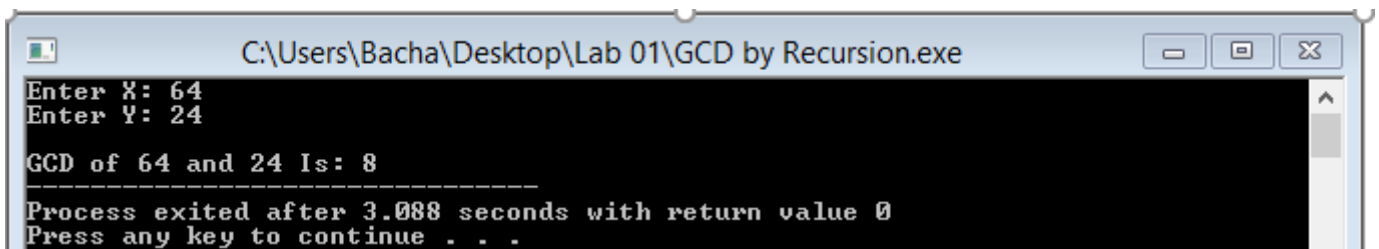


```
C:\Users\Bacha\Desktop\Lab 01\Transpose.exe
Enter the Number of Rows OR Columns: 3
1
2
3
4
5
6
7
8
9
The Orignale Matrix:
1 2 3
4 5 6
7 8 9
The Traspose of Matrix:
1 4 7
2 5 8
3 6 9
```

### TASK 03: 1.2.4 Activity

#### CODE:

```
#include<iostream>
int gcd(int x,int y);
using namespace std;
int main()
{
    int x,y;
    cout<<"Enter X: ";
    cin>>x;
    cout<<"Enter Y: ";
    cin>>y;
    cout<<endl<<"GCD of "<<x<<" and "<<y<<" Is: "<<gcd(x,y);
    return 0;
}
int gcd(int x,int y)
{
    if(y==0)
        return x;
    else
        return gcd(y,x%y);
}
```

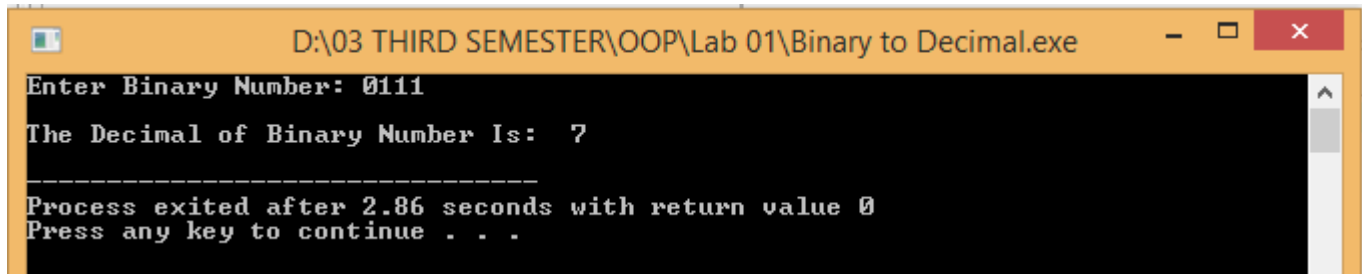


### Task 04 1.2.7 Activity

#### CODE:

```
#include<iostream>
using namespace std;
int main()
{
    int binum,temp,i=1,decimal=0;
    cout<<"Enter Binary Number: ";
    cin>>binum;
    while(binum!=0)
    {
        temp=binum%10;
        decimal=decimal+temp*i;
        binum=binum/10;
        i=i*2;
    }
    cout<<endl<<"The Decimal of Binary Number Is: "<<decimal<<endl;
    return 0;
}
```

**RUN:**



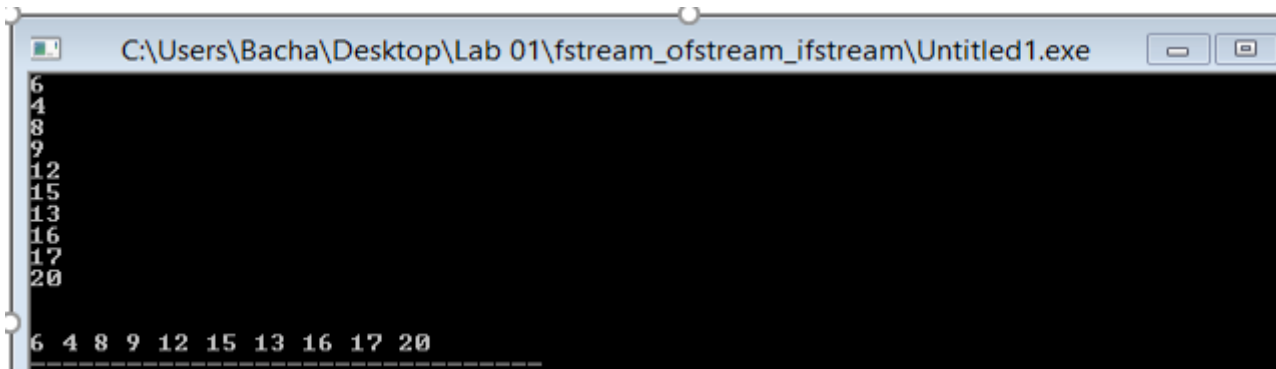
```
D:\03 THIRD SEMESTER\OOP\Lab 01\Binary to Decimal.exe
Enter Binary Number: 0111
The Decimal of Binary Number Is: 7
-----
Process exited after 2.86 seconds with return value 0
Press any key to continue . . .
```

## TASK 05 1.2.9 Activity

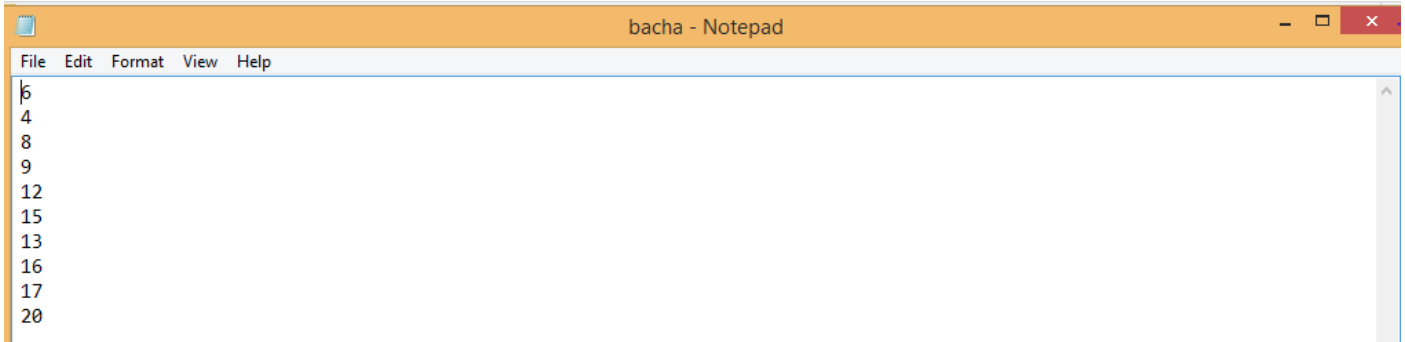
**CODE:**

```
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
    int arr[10];
    ofstream file("bacha.txt");
    for(int i=0;i<10;i++)
    {
        cin>>arr[i];
    }
    if(!file.is_open())
    {
        cout<<"Not Open "<<endl;
    }
    else
    {
        for(int i=0;i<10;i++)
        {
            file<<arr[i]<<endl;
        }
    }
    cout<<endl<<endl;
    ifstream fileread;
    fileread.open("bacha.txt");
    if(!fileread.is_open())
    {
        cout<<"Error: ";
    }
    else
    {
        string line;
        while(fileread.good())
        {
            getline(fileread,line);
            cout<<line<<" ";
        }
    }
    return 0;
}
```

**RUN:**



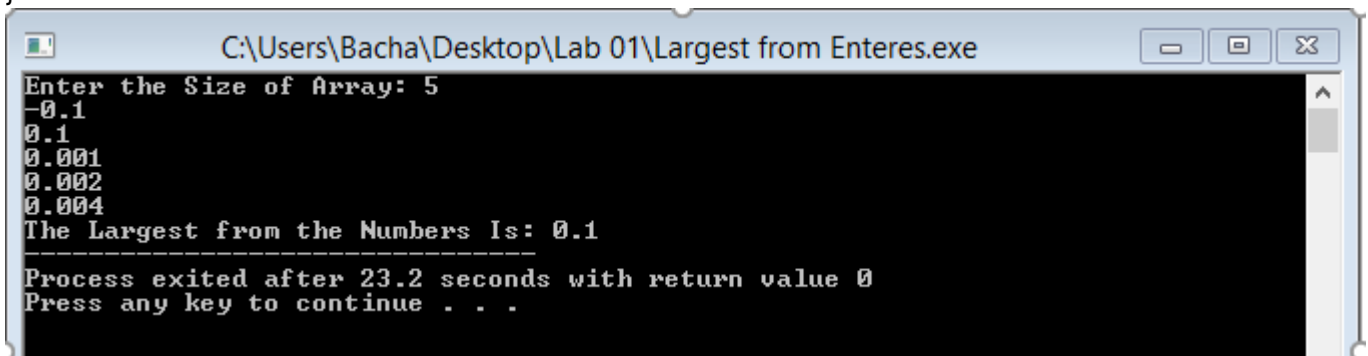
```
C:\Users\Bacha\Desktop\Lab 01\fstream_ofstream_ifstream\Untitled1.exe
6
4
8
9
12
15
13
16
17
20
6 4 8 9 12 15 13 16 17 20
```



## TASK 06: 1.2.5 Activity

### CODE:

```
#include<iostream>
#include<stdlib.h>
using namespace std;
int main()
{
    int size,i,j;
    cout<<"Enter the Size of Array: ";
    cin>>size;
    float *arr = new float[size];
    for(i=0;i<size;i++)
    {
        cin>>*(arr+i);
    }
    for(i=1;i<size;i++)
    {
        if(arr[0]<*(arr+i))
        {
            arr[0]=*(arr+i);
        }
    }
    cout<<"The Largest from the Numbers Is: "<<arr[0]<<" ";
    return 0;
}
```



## TASK 07: 1.2.6 Activity

### CODE:

```
#include<iostream>
using namespace std;
int main()
```

```

{
    int arr[4],i,encr[4],decr[4];
    for(i=0;i<4;i++)
    {
        cin>>arr[i];
    }
    cout<<endl;
    cout<<"Originol Number: "<<endl;
    for(i=0;i<4;i++)
    {
        cout<<arr[i];
    }
    cout<<endl;
    for(i=0;i<4;i++)
    {
        encr[i]=(arr[i]+7)%10;
    }
    cout<<endl;
    cout<<"Encrepted: "<<endl;
    for(i=0;i<4;i++)
    {
        cout<<encr[i];
    }
    cout<<endl<<endl;
    cout<<"After swaping: "<<endl;
    cout<<encr[2]<<encr[3]<<encr[0]<<encr[1];

    for(i=0;i<4;i++)
    {
        decr[i]=(encr[i]+10)-7;
    }
    cout<<endl;
    cout<<endl<<"Decripped: "<<endl;
    for(i=0;i<4;i++)
    {
        cout<<decr[i];
    }
    cout<<endl;
    return 0;
}

```

```

3
4
5
6
Originol Number:
3456
Encrepted:
0123
After swaping:
2301
Decripped:
3456
-----

```

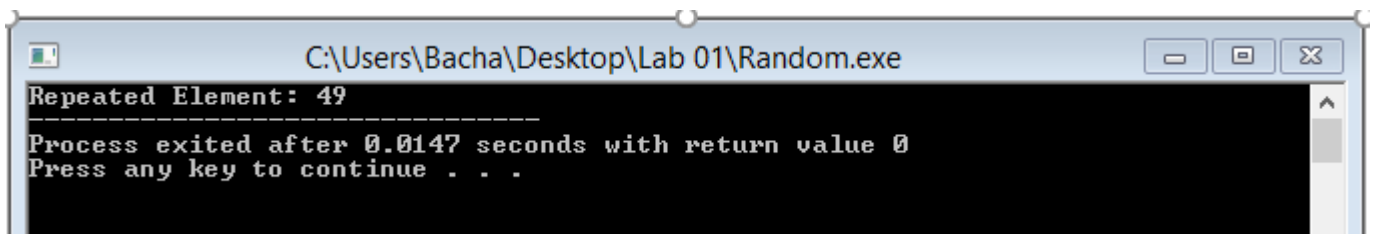
## TASK 08: 1.2.8 Activity

### CODE:

```
#include<iostream>
#include <stdlib.h>
#include <time.h>

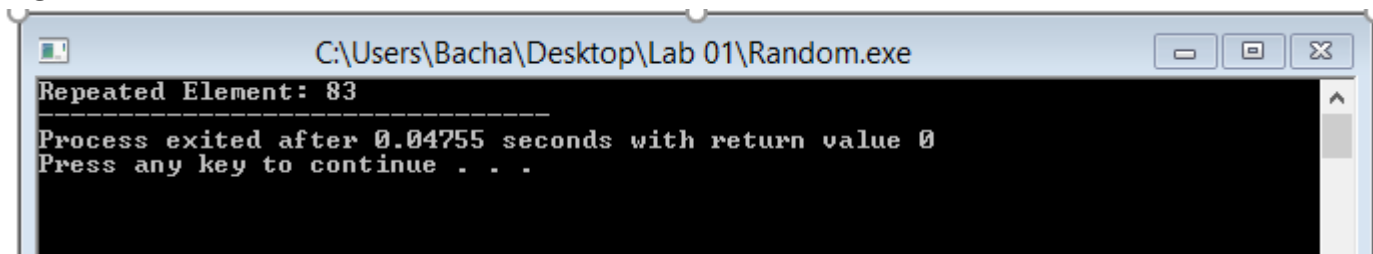
using namespace std;
int main()
{
    int array[100],i;
    int repet[100]={};
    srand(time(NULL));
    for(i=0;i<100;i++)
    {
        array[i]=rand()%100;
    }
    for(i=0;i<100;i++)
    {
        repet[array[i]]++;
        if(repet[array[i]]==2)
        {
            cout<<"Repeated Element: "<<array[i];
            break;
        }
    }
    return 0;
}
```

### RUN 1:



```
C:\Users\Bacha\Desktop\Lab 01\Random.exe
Repeated Element: 49
-----
Process exited after 0.0147 seconds with return value 0
Press any key to continue . . .
```

### RUN 2:



```
C:\Users\Bacha\Desktop\Lab 01\Random.exe
Repeated Element: 83
-----
Process exited after 0.04755 seconds with return value 0
Press any key to continue . . .
```

## Task 09: 1.2.2 Activity

### CODE:

```
#include<iostream>
#include<cmath>
using namespace std;
int main()
{
    int n;
    double mean,ans=0,res,answer;
    double sum=0;
```



```

    cin>>n;
    int arr[n],i,j;
    for(i=0;i<n;i++)
    {
        cin>>arr[i];
    }

    for(i=0;i<n;i++)
    {
        sum+=arr[i];
    }
    cout<<"Totle: "<<sum<<endl;
    mean=sum/n;
    cout<<"Mean: "<<mean<<endl;
    for(i=0;i<n;i++)
    {
        ans+=pow((arr[i]-mean),2);
    }
    res=ans/(n-1);
    cout<<endl<<"Before squire root: "<<res<<endl;
    answer=pow(res,0.5);
    cout<<"Answer: (+-) ";
    cout<<answer;

    return 0;
}

```

```

D:\03 THIRD SEMESTER\OOP\Lab 01\1.2.2.exe
3
4
3
3
Totle: 10
Mean: 3.33333

Before squire root: 0.333333
Answer: (+-) 0.57735
-----
Process exited after 5.097 seconds with return value 0
Press any key to continue . . .

```