Question 1) Programs on Files

```
//A program to demonstrate copying of files

#include<iostream>

#include<fstream>

using namespace std;

int main()

{

    cout<<"\nenter the file name to be copied : ";

    char n1[80];

    cin>>n1;

    cout<<"\nenter the destination file name : ";

    char n2[80];

    cin>>n2;

    ifstream filein;

    filein.open(n1,ios::in);

    ofstream fileout;

    fileout.open(n2,ios::out);

    char ch;

    while((ch=filein.get())!=EOF)

    {

    fileout<<ch;

    }

    filein.close();

    fileout.close();
```

```
return 1;
}



//A program to demonstrate write and read functions
#include<iostream>
#include<fstream>
using namespace std;
class student
{
        int rno;
        char name[80];
        float marks;
        public:
                void getdata()
                {
                        cout<<"\nenter name : ";
                        cin>>name;
                        cout<<"\nenter roll no : ";
                        cin>>rno;
                        cout<<"\nenter marks : ";
                        cin>>marks;
                }
```

```
        void display()
        {
                cout<<"\n\n\nNAME : "<<name;
                cout<<"\nROLL NO : "<<rno;
                cout<<"\nMARKS : "<<marks;
        }
};
int main()
{
        student stu;
        ofstream fileout;
        fileout.open("record.dat",ios::app);
        ifstream filein("record.dat");
        cout<<"\npress 1 for a new record , \npress 2 to retrieve the data \n: ";
        int n;
        cin>>n;
        switch(n)
        {
                case 1:{stu.getdata();
                fileout.write((char*)&stu,sizeof(stu));
                        break;
                        }
                case 2:{while(filein.read((char*)&stu,sizeof(stu)))
```

```
                {
                        stu.display();
                }
                        break;
                }
                default:cout<<"\nwrong option ...";
        }
        return 1;
}

//A program to demonstrate seek and tell functions
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
        ifstream filein;
        filein.open("test.txt",ios::in);
        int n;
        filein.seekg(0,ios::end);
        n=filein.tellg();
        cout<<"\nthe total number of charcters is : "<<n;
        cout<<"\nenter the cursor position from where the file is to be read : ";
```

```
        int m;char ch;
        cin>>m;
        filein.seekg(m,ios::beg);
        while(filein)
        {
                ch=filein.get();
                cout<<ch;
        }
        filein.close();
        return 1;
}
```

Question 2)Student information Display

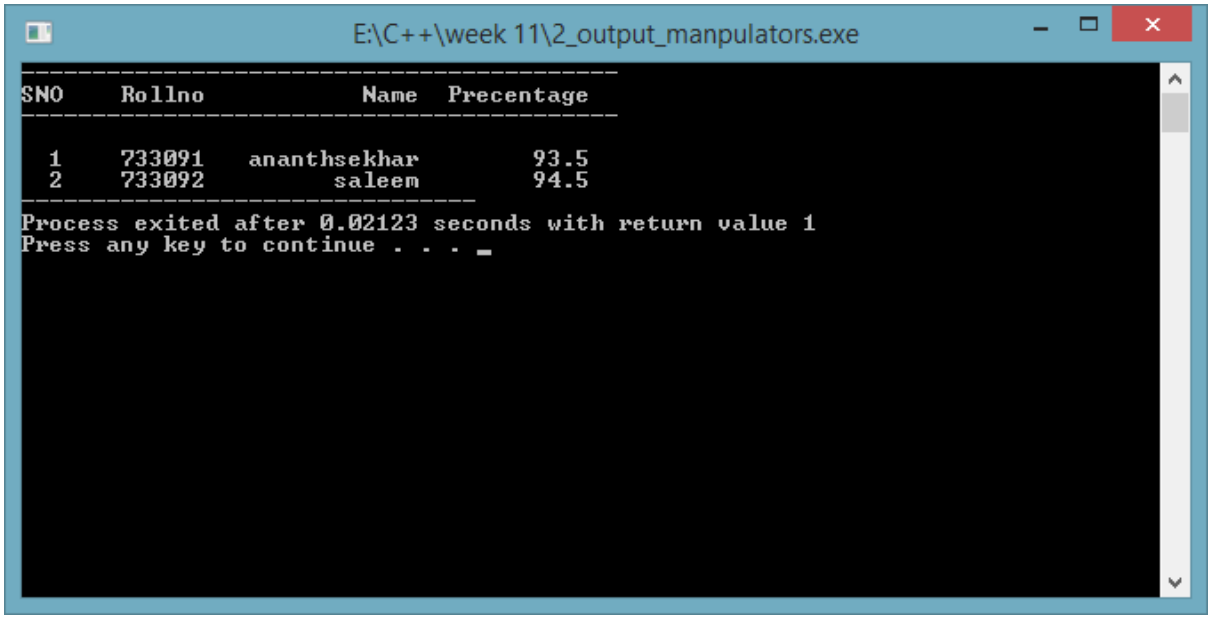
```
//A program to write the records in input.txt
#include<iostream>
#include<cstring>
#include<fstream>
using namespace std;
int main()
{
    char name[80];int rno;int m[6];
    ofstream fileout;
    fileout.open("input.txt",ios::app);
    cout<<"\nEnter name , roll no , marks of 6 subjects : after entering press
#:\n";
```

```
        while(1)
        {
        cin>>name;
        if(strcmp(name,"#")==0)
        break;
        cin>>rno;
        for(int i=0;i<6;i++)
        cin>>m[i];
        rno=733000+rno;
        fileout<<endl<<rno<<" "<<name;
        for(int i=0;i<6;i++)
        fileout<<" "<<m[i];
        }
return 1;
fileout.close();
}

//The program to display the output
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
```

```
ifstream infile;
infile.open("input.txt",ios::in);
int rno,m[6],i;i=0;
char name[80];
cout<<"----------------------------------------\n";
cout.width(3);
cout<<"SNO";
cout.width(10);
cout<<"Rollno";
cout.width(15);
cout<<"Name";
cout.width(12);
cout<<"Precentage";
cout<<"\n----------------------------------------\n";
while(!infile.eof())
{
        float p=0;
        infile>>rno>>name;
        for(int i=0;i<6;i++)
        {
                infile>>m[i];p=p+m[i];
        }
        p=p/6;
```

```
            cout<<endl;
            cout.width(3);
            cout<<++i;
            cout.width(10);
            cout<<rno;
            cout.width(15);
            cout<<name;
            cout.width(12);
            cout<<p;
        }
        return 1;
}
```



Question 3)Class template

```
#include<iostream>
```

```
using namespace std;
template<class T>
class matrix1
{
	T **p;
	int m,n;
	public:
		matrix1()
		{}
		matrix1(int l,int k)
		{
			int i;
			m=l;n=k;
			p=new T*[m];
			for(i=0;i<m;i++)
			p[i]=new T[n];
		}
		void getdata()
		{
			int i,j;
			cout<<"\nenter the data : ";
			for(i=0;i<m;i++)
			{
```

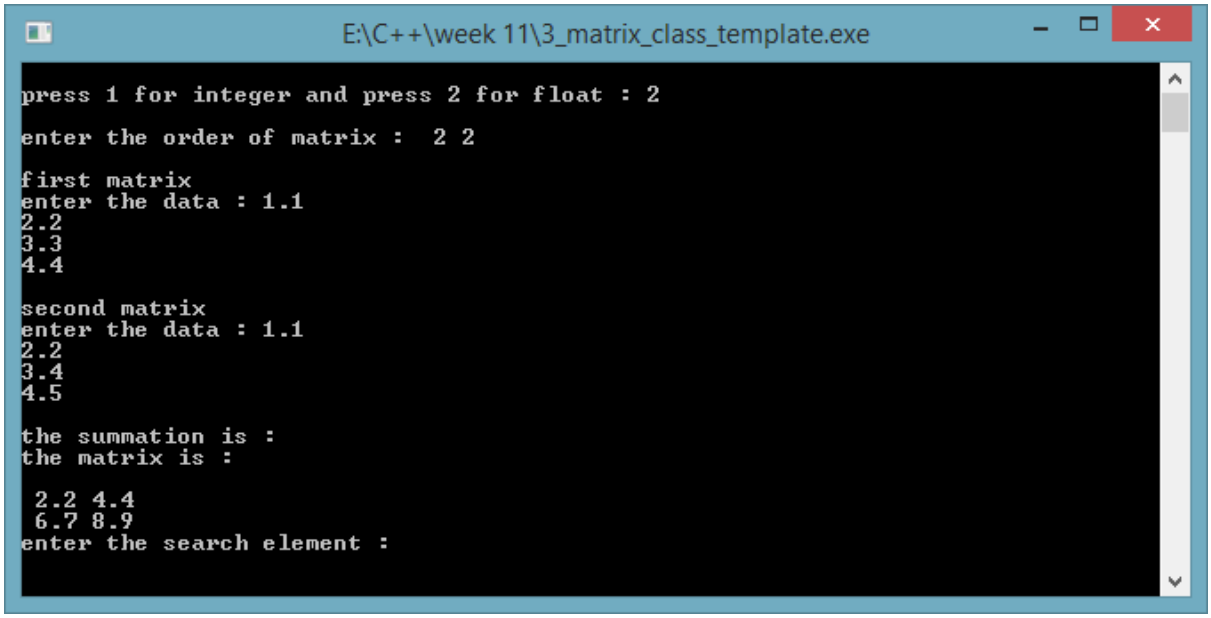
```
                for(j=0;j<n;j++)
                {
                        cin>>p[i][j];
                }
        }
}
void display()
{
        cout<<"\nthe matrix is : \n";
        int i,j;
        for(i=0;i<m;i++)
        {
                cout<<endl;
                for(j=0;j<n;j++)
                {
                        cout<<" "<<p[i][j];
                }
        }
}
void search(T &k)
{
        int i,j,flag;flag=0;
        for(i=0;i<n;i++)
```

```
                {
                        for(j=0;j<m;j++)
                        {
                                if(p[i][j]==k)
                                {
                                        cout<<"\nsearch element found at
"<<i<<" "<<j<<" position...";
                                        flag=1;
                                }
                        }
                }
                if(flag==0)
                cout<<"\nsearch element not found ....";
        }
        friend matrix1 add(matrix1 r,matrix1 s)
        {
                matrix1 temp(r.m,r.n);
                temp.m=r.m;
                temp.n=r.n;
                int i,j;
                for(i=0;i<(temp.m);i++)
                {
                        for(j=0;j<(temp.n);j++)
                        {
```

```
                                temp.p[i][j]=r.p[i][j]+s.p[i][j];
                        }
                }
                return temp;
        }
};
int main()
{
        int ch;
        cout<<"\npress 1 for integer and press 2 for float : ";
        cin>>ch;
        switch(ch)
        {
                case 1:
                        {
                                int x;int m,n;
                                cout<<"\nenter the order of matrix :  ";
                                cin>>m>>n;
                                matrix1 <int>a(m,n);
                                matrix1 <int>b(m,n);
                                matrix1 <int>c(m,n);
                                cout<<"\nfirst matrix";
                                a.getdata();
```

```
                cout<<"\nsecond matrix";
                b.getdata();
                c=add(a,b);
                cout<<"\nthe summation is : ";
                c.display();
                cout<<"\nenter the search element : ";
                cin>>x;
                c.search(x);
        }break;
case 2:
        {
                float x;int m,n;
                cout<<"\nenter the order of matrix :  ";
                cin>>m>>n;
                matrix1 <float>a(m,n);
                matrix1 <float>b(m,n);
                matrix1 <float>c(m,n);
                cout<<"\nfirst matrix";
                a.getdata();
                cout<<"\nsecond matrix";
                b.getdata();
                c=add(a,b);
                cout<<"\nthe summation is : ";
```

```
                    c.display();
                    cout<<"\nenter the search element : ";
                    cin>>x;
                    c.search(x);
                }break;
            default:cout<<"\ninvalid choice .....";
        }
        return 1;
}
```



Question 3)Function Template

```
#include<iostream>

using namespace std;

template<class T>

void lsearch(T *p,T x,int n)
```

```
{
        int i,flag;flag=0;
        for(i=0;i<n;i++)
        {
                if(p[i]==x)
                {
                        cout<<"\nsearch element found at "<<i+1<<" position....";
                        flag=1;
                }
        }
        if(flag==0)
        {
                cout<<"\nsearch element not found ....";
        }
}
int main()
{
        int a[10]={11,22,33,44,55,66,77,88,99,0};
        char b[10]="aqwrtypol";
        int a1;char b1;
        cout<<"\nenter the search element in integer : ";
        cin>>a1;
        cout<<"\nenter the search element in character : ";
```

```
    cin>>b1;
    lsearch(a,a1,10);
    lsearch(b,b1,10);
    return 1;
}
```