

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;

}

```

```

E:\C++\week 11\2_output_manipulators.exe
-----
SNO    Rollno    Name      Precentage
-----
1      733091    ananthsekhar  93.5
2      733092    saleem      94.5
-----
Process exited after 0.02123 seconds with return value 1
Press any key to continue . . . _

```

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;

}

```

```

E:\C++\week 11\3_matrix_class_template.exe

press 1 for integer and press 2 for float : 2
enter the order of matrix : 2 2
first matrix
enter the data : 1.1
2.2
3.3
4.4
second matrix
enter the data : 1.1
2.2
3.4
4.5
the summation is :
the matrix is :
2.2 4.4
6.7 8.9
enter the search element :

```

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 : ";

```

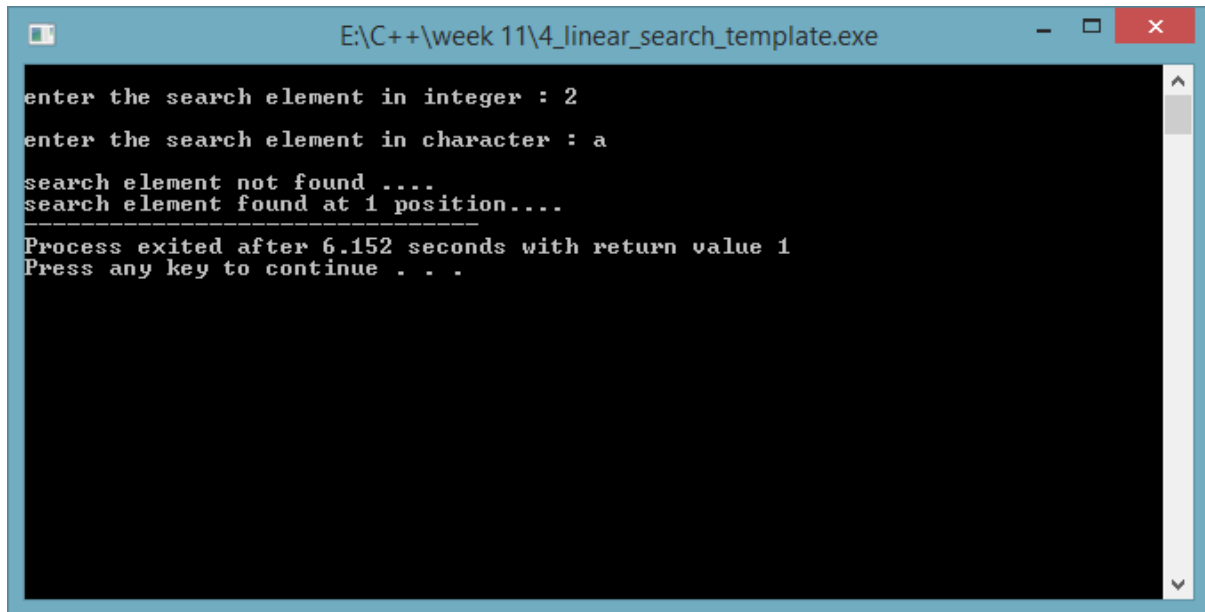
```
    cin>>b1;

    lsearch(a,a1,10);

    lsearch(b,b1,10);

    return 1;

}
```



```
E:\C++\week 11\4_linear_search_template.exe

enter the search element in integer : 2
enter the search element in character : a
search element not found ....
search element found at 1 position....
=====
Process exited after 6.152 seconds with return value 1
Press any key to continue . . .
```