**Assignment No: 1.1**

**Title: Implementation of Program based on Arrays.**

#include<iostream.h>

#include<conio.h>

class LIST\_

{

private:

int \*A,s,n;

public:

LIST\_(int par);

void ADD\_END(int ele);

void ADD\_BEG(int ele);

void ADD\_POS(int ele,int pos);

int DEL\_END();

int DEL\_BEG();

int DEL\_POS(int pos);

void DISPLAY();

};

LIST\_::LIST\_(int par)

{

n=0,s=par;

A=new int [s+1];

}

void LIST\_::ADD\_END(int ele)

{

if(n==s)

{

cout<<"Array is full";

return;

}

n=n+1;

A[n]=ele;

}

void LIST\_::ADD\_BEG(int ele)

{

if(n==s)

{

cout<<"Array is full";

return;

}

for(int i=n;i>1;i--)

{

A[i+1]=A[i];

}

A[i]=ele;

n++;

}

void LIST\_::ADD\_POS(int ele,int pos)

{

if(n==s)

{

cout<<"Array is full";

return;

}

if(pos<=1 && pos<=n+1)

{

for(int i=n;i<=pos;i++)

{

A[i+1]=A[i];

}

A[pos]=ele;

}

else

{

cout<<"Position is invalid";

}

}

int LIST\_::DEL\_END()

{

int ele;

if(n==0)

{

cout<<"Array is full";

return NULL;

}

else

{

ele = A[n];

n=n-1;

return ele;s

}

}

int LIST\_::DEL\_BEG()

{

int ele;

if(n==0)

{

cout<<"Array is full";

return NULL;

}

else

ele=A[1];

for(int i=2;i<=n;i++)

{

A[i-1]=A[i];

}

n=n-1;

return ele;

}

int LIST\_ :: DEL\_POS(int pos)

{

int ele;

if(n==0)

{

cout<<"Array is full";

return NULL;

}

ele = A[pos];

for(int i=pos+1;i<=n;i++)

{

A[i-1]=A[i];

}

n--;

return ele;

}

void LIST\_ :: DISPLAY()

{

if(n==0)

{

cout<<"Array is full";

return;

}

for(int i=1;i<=n;i++)

{

cout<<A[i]<<" ";

}

}

void MENU()

{

int opt,ele,pos,size;

cout<<"Enter size of List"<<endl;

cin>>size;

LIST\_ obj(size);

do

{

cout<<"\n 1. Add at End";

cout<<"\n 2. Add at Beginig";

cout<<"\n 3. Add at Positon";

cout<<"\n 4. Delete from End";

cout<<"\n 5. Delete from Beginig";

cout<<"\n 6. Delete from Position";

cout<<"\n 7. LIST ALL Element";

cout<<"\n 8. Exit \n";

cout<<"Enter your option: ";

cin>>opt;

switch(opt)

{

case 1:

cout<<"\n Enter element to add at end: ";

cin>>ele;

obj.ADD\_END(ele);

break;

case 2:

cout<<"\n Enter element to add at Begin: ";

cin>>ele;

obj.ADD\_BEG(ele);

break;

case 3:

cout<<"\n Enter the element: ";

cin>>ele;

cout<<"\n Enter the element position: ";

cin>>pos;

obj.ADD\_POS(ele,pos);

break;

case 4:

ele = obj.DEL\_END();

cout<<"Delete Element is: "<<ele;

break;

case 5:

ele = obj.DEL\_BEG();

cout<<"Delete Element is: "<<ele;

break;

case 6:

cout<<"Enter the Position: ";

cin>>pos;

ele = obj.DEL\_POS(pos);

cout<<"Delete Element is: "<<ele;

break;

case 7:

obj.DISPLAY();

break;

case 8:

return;

default:

cout<<"Invalid Option";

}

}while(1);

}

void main()

{

clrscr();

MENU();

getch();

}