**ROLL NO:-45**

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**PRACTICAL NO:-8**

**PRACTICAL NAME :- IMPLEMENTATION OF ARRAY**

//Implementation of programs based on Arrays (INSERT & DEL from beg and end)

#include"iostream"

#include"conio.h"

using namespace std;

class array

{

public:

int arr[20],ele,n,size;

public:

array(int n);

int isempty();

int isfull();

int getArray();

int view\_all();

int insertAtFrist(int iteam);

int insertAtEnd(int iteam);

int insertAtAnyPosition(int iteam,int pos);

int deleteFromStart();

int deleteFromEnd();

};

array::array(int size)

{

n=size;

ele=0;

}

int array::isempty()

{

if(ele==0)

{

cout<<endl<<"array is empty";

return 1;

}

return 0;

}

int array::isfull()

{

if(n==ele)

{

cout<<endl<<"array is full";

return 1;

}

return 0;

}

int array::view\_all()

{

if (isempty())

{

return NULL;

}

cout<<endl<<" Array is : ";

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

{

cout<<arr[i]<<" ";

}

}

int array::getArray()

{

if (isfull())

{

return NULL;

}

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

{

cout<<endl<<"enter the "<<i<<" th "<<"element";

cin>>arr[i];

ele++;

}

view\_all();

}

int array::insertAtFrist(int iteam)

{

if (isfull())

{

return NULL;

}

int loc=1;

cout<<endl<<"Entering at frist position : ";

int index =n;

while(loc<=index)

{

arr[index+1]=arr[index];

index--;

}

index++;

arr[index]=iteam;

n++;

ele++;

view\_all();

}

int array::insertAtEnd(int iteam)

{

if (isfull())

{

return NULL;

}

n=n+1;

ele++;

arr[n]=iteam;

view\_all();

}

int array::insertAtAnyPosition(int iteam,int pos)

{

if (isfull())

{

return NULL;

}

int index =n;

while(pos<=index)

{

arr[index+1]=arr[index];

index--;

}

index++;

arr[index]=iteam;

n++;

ele++;

view\_all();

}

int array::deleteFromStart()

{

if (isempty())

{

return NULL;

}

int i=0;

int iteam = arr[0];

while(i<n)

{

arr[i]=arr[i+1];

i++;

}

n--;

ele--;

cout<<endl<<"iteam is Deleted"<<iteam;

view\_all();

}

int array::deleteFromEnd()

{

if (isempty())

{

return NULL;

}

int iteam = arr[n];

n=n-1;

ele--;

cout<<endl<<"iteam is Deleted"<<iteam;

view\_all();

}

menu()

{

int size,option,data,pos;

cout<<endl<<"Enter the size of array";

cin>>size;

array obj(size);

do{

cout<<endl<<"Enter 1 for insert the element";

cout<<endl<<"Enter 2 for insert at start";

cout<<endl<<"Enter 3 for insert at end";

cout<<endl<<"enter 4 fro inset at any position";

cout<<endl<<"Enter 5 for delete from start";

cout<<endl<<"Enter 6 for delete from end";

cout<<endl<<"Enter 7 for check isempty";

cout<<endl<<"Enter 8 for check isfull";

cout<<endl<<"Enter 9 for exit";

cin>>option;

switch(option){

case 1:

obj.getArray();

break;

case 2:

cout<<"Enter the number";

cin>>data;

obj.insertAtFrist(data);

break;

case 3:

cout<<"Enter the number";

cin>>data;

obj.insertAtEnd(data);

break;

case 4:

cout<<"Enter the number";

cin>>data;

cout<<"Enter the position";

cin>>pos;

obj.insertAtAnyPosition(data,pos);

break;

case 5:

obj.deleteFromStart();

break;

case 6:

obj.deleteFromEnd();

break;

case 7:

obj.isempty();

break;

case 8:

obj.isfull();

break;

case 9:

return NULL;

break;

default:

cout<<"invalid option";

}

}while(1);

}

main()

{

menu();

// array obj;

// int n=4;

// int arr[n]={20,30,40,50};

//

//

// cout<<endl<<"Enter the size of array";

// int d;

// cin>>d;

// int iteam;

// cout<<endl<<"Enter the element";

// cin>>iteam;

// cout<<endl<<" Array is : ";

// for(int i=0;i<n;i++)

// {

// cout<<arr[i]<<" ";

// }

}