

Experiment No 1.6

Shell Sort :

```
#include<iostream>

#include<math.h>

#define max 100

using namespace std;

class Shell

{

    public:

        int n,arr[max];

        void getData()          { int i;

                                cout<<"How many array Elements :";

cin>>n;

                                cout<<"Enter Array Elements : "<<endl;

                                for(i=0;i<n;i++) cin>>arr[i];

                                } void

ShellSort()

{

    int i, j, k, temp,f=0;          for(i = n/2.0 ; i > 0 ; i = i/2.0){

    cout<<endl<<"(Pass : "<<f++<<" )(inc = "<<i<<") : \t ";

    displayData();

    for(j = i; j < n; j++){

        for(k = j-i; k >= 0; k = k-i){

            if(arr[k+i] >= arr[k])

                break;

            else {

                temp = arr[k];

                arr[k] =

arr[k+i];

                arr[k+i] = temp;
```

```

        }
    }
}

}

}

void displayData()
{
    int i;    for(i=0;i<n;i++)
        cout<<arr[i]<<"\t";
}

}b;

int main()
{
    b.getData();
    b.ShellSort(); cout<<endl<<"Sorted Array
Elements are :"<<endl;

    b.displayData();
    cout<<endl;
}

```

Output :

How many array Elements :4

Enter Array Elements :

20

10

1

3

(Pass : 0)(inc = 2): 20 10 1 3

(Pass : 1)(inc = 1): 1 3 20 10

Sorted Array Elements are :

1 3 10 20