Aim:

Write a program to [sort] ([ascending order]) the given elements using [shell sort] technique.

At the time of execution, the program should print the message on the console as:

```
Enter array size :
```

For example, if the user gives the **input** as:

```
Enter array size : 5
```

Next, the program should print the following message on the console as:

```
Enter 5 elements :
```

if the user gives the **input** as:

```
Enter 5 elements : 34 67 12 45 22
```

then the program should **print** the result as:

```
Before sorting the elements are : 34 67 12 45 22
After sorting the elements are : 12 22 34 45 67
```

Note: Do use the **printf()** function with a **newline** character ([\n]).

Source Code:

ShellSort2.c

```c
#include<stdio.h>
void main(){
    int i,j,n;
    printf("Enter array size : ");
    scanf("%d",&n);
    int a[n];
    printf("Enter %d elements : ",n);
    for(int i=0;i<n;i++){
        scanf("%d",&a[i]);
    }
    printf("Before sorting the elements are : ");
    for(i=0;i<n;i++)
        printf("%d ",a[i]);
    printf("\n");

    int interval,temp;
    //sorting the elements
    for(interval=n/2;interval>0;interval/=2){
        for(i=interval;i<n;i++){
            temp = a[i];
            for(j=i;j>=interval&&a[j-interval]>temp;j-=interval)
                a[j] = a[j-interval];
            a[j] = temp;
        }
    }
}
```

```
    printf("After sorting the elements are : ");
    for(i=0;i<n;i++)
        printf("%d ",a[i]);
    printf("\n");
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter array size : 5
Enter 5 elements : 12 32 43 56 78
Before sorting the elements are : 12 32 43 56 78
After sorting the elements are : 12 32 43 56 78