Program No:	**3**
Roll No :	**1525**
Title of Program :	
Objective :	Shell sorting

SOURCE CODE:

```java
import java.util.*;

public class ShellSort {
  public static void SSort(int[] arr) {
    int n = arr.length; // Corrected to use length without parentheses
    // Start with increment n/2
    for (int gap = n / 2; gap > 0; gap /= 2) { // Use gap /= 2 for clarity
      for (int i = gap; i < n; i++) {
        // Save the current element
        int temp = arr[i];
        int j;

        // Shift gap sorted elements until temp position is found
        for (j = i; j >= gap && arr[j - gap] > temp; j -= gap) {
          arr[j] = arr[j - gap];
        }
        // Put temp in its correct position
        arr[j] = temp; // Corrected to use j instead of i
      }
    }
  }

  public static void Display(int[] arr) {
    for (int i : arr) {
      System.out.print(i + " "); // Changed to print on the same line
    }
    System.out.println();
  }

  // Interface
  public static void main(String[] args) {
    int[] arr = {12, 34, 21, 54, 2};

    System.out.println("Original Array:");
    Display(arr); // Corrected to match method name

    SSort(arr);
```

```java
        System.out.println("Sorted Array:");
        Display(arr); // Display the sorted array
    }
}
```

OUTPUT:

```
PS C:\Users\mcamock\DSAlab\sorting> java   ShellSort
Original Array:
12 34 21 54 2
Sorted Array:
2 12 21 34 54
PS C:\Users\mcamock\DSAlab\sorting> |
```