S.No: 7	Exp. Name: *Program to sort a list of elements using Quick Sort*	Date:

Aim:

Program to sort a list of elements using Quick Sort

Source Code:

QuickSort.c

```c
#include<stdio.h>
void quicksort (int [], int, int);
int main()
   {
      int list[50];
      int size, i;
      printf("Enter Number of elements : ");
      scanf("%d", &size);
      printf("Enter %d Elements : ",size);
      for(i = 0; i < size; i++)
      {
         scanf("%d", &list[i]);
      }
      quicksort(list, 0, size -1);
      printf("Sorted Numbers are : ");
      for(i = 0; i < size; i++)
      {
         printf(" %4d", list[i]);
      }
      printf("\n");
      return 0;
   }
void quicksort(int list[],int low, int high)
{
   int pivot, i, j, temp;
   if(low < high)
   {
      pivot = low;
      i= low;
      j= high;
      while (i < j)
      {
         while (list[i] <= list[pivot] && i <= high)
         {
            i++;
         }
         while (list[j] > list[pivot] && j >= low)
         {
            j--;
         }
            if(i < j)
            {
               temp = list[i];
               list[i] = list[j];
               list[j] = temp;
            }
      }
      temp = list[j];
      list[j] = list[pivot];
      list[pivot] = temp;
      quicksort(list, low, j-1);
      quicksort(list,j+1,high);
```

Page No:

ID: 0201DCS281

Noida Institute of Engineering and Technology

```
    }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1

User Output

Enter Number of elements : 5
Enter 5 Elements : 37 2 4 5 1
Sorted Numbers are :   1   2   4   5   37

Test Case - 2

User Output

Enter Number of elements : 3
Enter 3 Elements : 8 4 10
Sorted Numbers are :   4   8   10

Test Case - 3

User Output

Enter Number of elements : 4
Enter 4 Elements : 8 3 5 1
Sorted Numbers are :   1   3   5   8