

## Program - 12

**Title :** Write a Program to Sort the set of elements by using Quick Sort

**Code:**

```
#include <stdio.h>

void quick_sort(int arr[], int left, int right)
{
    int i, j, pivot, temp;
    if (left < right)
    {
        pivot = left;
        i = left;
        j = right;
        while (i < j)
        {
            while (arr[i] <= arr[pivot] && i < right)
                i++;
            while (arr[j] > arr[pivot])
                j--;
            if (i < j)
            {
                temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }
        temp = arr[pivot];
        arr[pivot] = arr[j];
        arr[j] = temp;
        quick_sort(arr, left, j - 1);
        quick_sort(arr, j + 1, right);
    }
}

int main()
{
    int n, i;
    printf("Enter array size: ");
    scanf("%d", &n);
    int arr[n];
    printf("Enter the elements:\n");
    for (i = 0; i < n; i++)
    {
        scanf("%d", &arr[i]);
    }
    quick_sort(arr, 0, n - 1);
    printf("Sorted elements are:\n");
    for (i = 0; i < n; i++)
    {
        printf("%d ", arr[i]);
    }
    printf("\n");
    return 0;
}
```

Output:

```
Enter array size: 10
Enter the elements:
2 4 7 8 5 9 0 1 3 6
Sorted elements are:
0 1 2 3 4 5 6 7 8 9
```

Date : \_\_/\_\_/\_\_

Teacher Sign .....