

Aim:

To sort array using Quick Sort.

Algorithm:

1. Choose a pivot.
2. Partition array.
3. Recursively sort left and right subarrays.

Code (Quick Sort):

```
#include <stdio.h>

void quicksort(int a[], int low, int high) {
    if (low < high) {
        int pivot = a[high], i = low - 1, temp;
        for (int j = low; j < high; j++) {
            if (a[j] <= pivot) {
                i++;
                temp = a[i]; a[i] = a[j]; a[j] = temp;
            }
        }
        temp = a[i+1]; a[i+1] = a[high]; a[high] = temp;
        quicksort(a, low, i);
        quicksort(a, i + 2, high);
    }
}

int main() {
    int a[] = {5, 3, 7, 2, 1}, n = 5;
    quicksort(a, 0, n - 1);
    for (int i = 0; i < n; i++)
        printf("%d ", a[i]);
    return 0;
}
```

Input:

{5, 3, 7, 2, 1}

Output:

1 2 3 5 7

Result:

Array sorted successfully.