

Quick Sort

```
#include<stdio.h>
```

```
void swap(int* a, int* b)
{
    int t = *a;
    *a = *b;
    *b = t;
}
```

```
int partition (int arr[], int low, int high)
{
    int pivot = arr[high]; // pivot
    int i = (low - 1); // Index of smaller element

    for (int j = low; j <= high- 1; j++)
    {
        // If current element is smaller than the pivot
        if (arr[j] < pivot)
        {
            i++; // increment index of smaller element
            swap(&arr[i], &arr[j]);
        }
    }
    swap(&arr[i + 1], &arr[high]);
    return (i + 1);
}
```

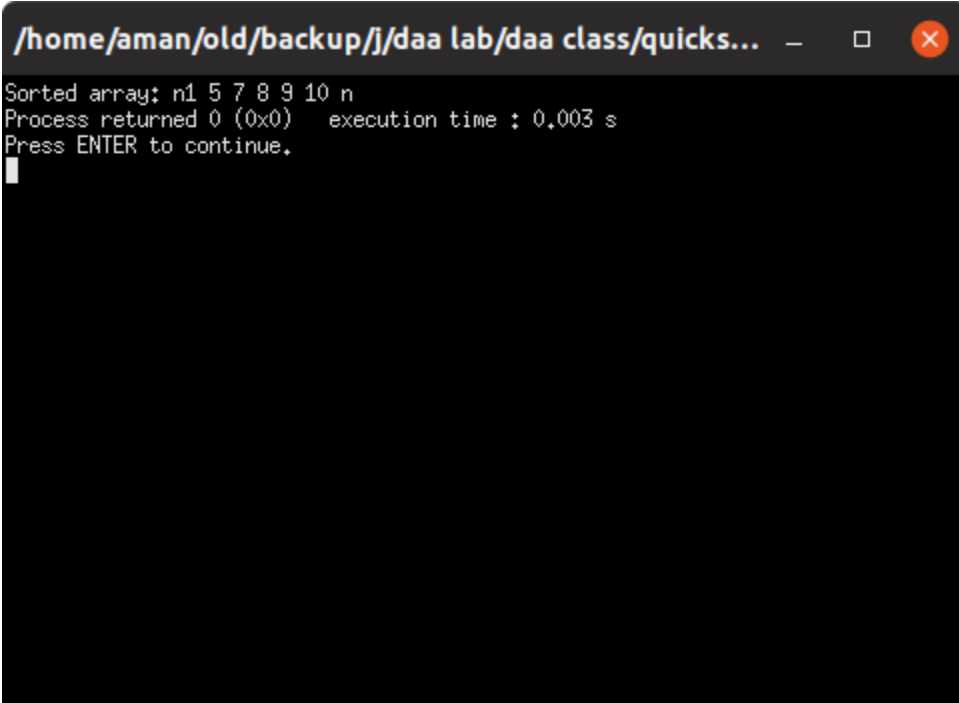
```
void quickSort(int arr[], int low, int high)
{
    if (low < high)
    {
        int pi = partition(arr, low, high);

        quickSort(arr, low, pi - 1);
        quickSort(arr, pi + 1, high);
    }
}
```

```
void printArray(int arr[], int size)
{
    int i;
```

```
        for (i=0; i < size; i++)
            printf("%d ", arr[i]);
        printf("\n");
    }

int main()
{
    int arr[] = {10, 7, 8, 9, 1, 5};
    int n = sizeof(arr)/sizeof(arr[0]);
    quickSort(arr, 0, n-1);
    printf("Sorted array: n");
    printArray(arr, n);
    return 0;
}
```

A terminal window with a dark background and a title bar. The title bar contains the path `/home/aman/old/backup/j/daa lab/daa class/quicks...` and standard window control icons. The terminal displays the output of the program: `Sorted array: n1 5 7 8 9 10 n`, `Process returned 0 (0x0) execution time : 0.003 s`, and `Press ENTER to continue.` A white cursor is visible on the line following the prompt.

```
/home/aman/old/backup/j/daa lab/daa class/quicks...  
Sorted array: n1 5 7 8 9 10 n  
Process returned 0 (0x0) execution time : 0.003 s  
Press ENTER to continue.  
█
```