DSME

Quicksort

Data Structures Made Easy

DUBLIN CITY UNIVERSITY

1. ***Quicksort***

```
class quick_Sort{

        private static void swap(int [] quick_Array, int low, int high){

                int temporary = quick_Array[low];
                quick_Array[low] = quick_Array[high];
                quick_Array[high] = temporary;
        }

        public static void quick(int [] quick_Array, int low, int high){

                int lo = low;
                int hi = high;

                if (lo >= hi)
                        return;

                int pivot = quick_Array[(lo + hi) / 2];

                while (lo < hi) {

                        while (quick_Array[lo] < pivot)
                                lo++;

                        while (quick_Array[hi] > pivot)
                                hi--;

                        swap(quick_Array, lo, hi);

                }

                if (hi < lo) {

                        swap(quick_Array, hi, lo);
                }

                int element = lo;

                if(lo == low)
                        element++;

                quick(quick_Array, low, lo);
                quick(quick_Array, element, high);
        }
```

```
    public static void main(String [] args){

        System.out.print("Enter the number of elements: ");
        int size = Console.readInt();

        int [] quick_Array = new int[size];

        System.out.print('\n' + "Enter the elements: ");

        for(int index_1 = 0; index_1 < size; index_1++){

            int element = Console.readInt();
            quick_Array[index_1] = element;
        }

        quick(quick_Array, 0, size-1);

        System.out.print('\n' + "The sorted list is: ");

        for(int index_2 = 0; index_2 < size; index_2++)
            System.out.print(quick_Array[index_2] + " ");
    }
}
```