```
function quicksort ( int[] data , int lo, int hi )
    if ( lo < hi )
        int p = partition(data, lo, hi);
        quicksort(data, lo, p - 1);
        quicksort(data, p + 1, hi);
    end if;
end;

function partition(int[] data, int lo, int hi)
    int pivot = data[hi];
    int i = lo - 1;
    for( int j = lo; j < hi; j++ )
        if ( data[j] <= pivot )
            i = i + 1;
            if ( i != j )
                swap(data[i], data[j]);
            end if;
        end for;
    swap(data[i+1], data[j]);
    return i + 1 ;
end;
```