Quicksort

Computational effort

Best Case	Average Case	Worst Case
$O(n\,log(n))$	$O(n\,log(n))$	$o(n^2)$

WORST CASE: sorted or reversely sorted list

BEST CASE: pivot = median for every iteration

Pseudocode

```
procedure quicksort(a,l,r)
```

```
begin
  if r > l then
    begin
      i := l - 1
      j := r
      pivot :=  a[r].key
      "begin - loop"
        repeat i := i + 1 until a[i].key >= pivot;
        repeat j := j - 1 until a[j].key <= pivot;
        if i >= j
          then "exit-loop";
        t := a[i];
        a[i] := a[j];
        a[j] := t;
      "end-loop";
      t := a[i];
      a[i] := a[r];
      a[r] := t
      quicksort(a,l,i - 1)
      quicksort(a,i+1,r)
    end
end
```