Analisis y Diseño de Algoritmos

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Análisis probabilístico


```
HIRE-ASSISTANT(n)
1  best = 0          // candidate 0 is a least-qualified dummy candidate
2  for i = 1 to n
3      interview candidate i
4      if candidate i is better than candidate best
5          best = i
6          hire candidate i
```

Figure: Tomada del libro Cormen, Introduction to Algorithms

Análisis probabilístico


```
RANDOMIZED-HIRE-ASSISTANT(n)
1  randomly permute the list of candidates
2  best = 0            // candidate 0 is a least-qualified dummy
3  for i = 1 to n
4      interview candidate i
5      if candidate i is better than candidate best
6          best = i
7          hire candidate i
```

Figure: Tomada del libro Cormen, Introduction to Algorithms

Análisis probabilístico


```
PERMUTE-BY-SORTING(A)
1  n = A.length
2  let P[1..n] be a new array
3  for i = 1 to n
4      P[i] = RANDOM(1, n^3)
5  sort A, using P as sort keys
```

Figure: Tomada del libro Cormen, Introduction to Algorithms

Análisis probabilístico


```
RANDOMIZE-IN-PLACE(A)
1  n = A.length
2  for i = 1 to n
3      swap A[i] with A[RANDOM(i, n)]
```

Figure: Tomada del libro Cormen, Introduction to Algorithms

Quicksort


```
QUICKSORT(A, p, r)
1  if p < r
2      q = PARTITION(A, p, r)
3      QUICKSORT(A, p, q − 1)
4      QUICKSORT(A, q + 1, r)
```

Figure: Tomada del libro Cormen, Introduction to Algorithms

Quicksort


```
PARTITION(A, p, r)
1  x = A[r]
2  i = p − 1
3  for j = p to r − 1
4      if A[j] ≤ x
5          i = i + 1
6          exchange A[i] with A[j]
7  exchange A[i + 1] with A[r]
8  return i + 1
```

Figure: Tomada del libro Cormen, Introduction to Algorithms

Quicksort

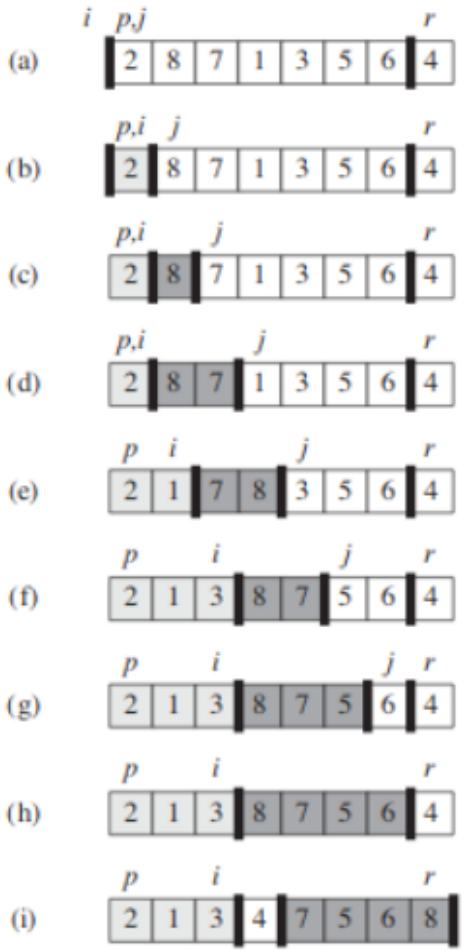
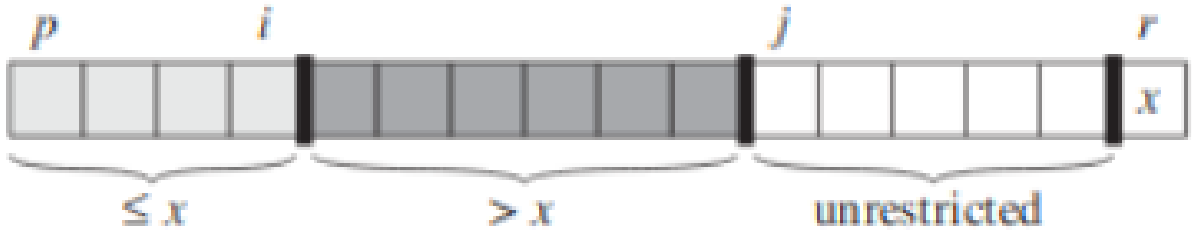


Figure: Tomada del libro Cormen, Introduction to Algorithms

Quicksort



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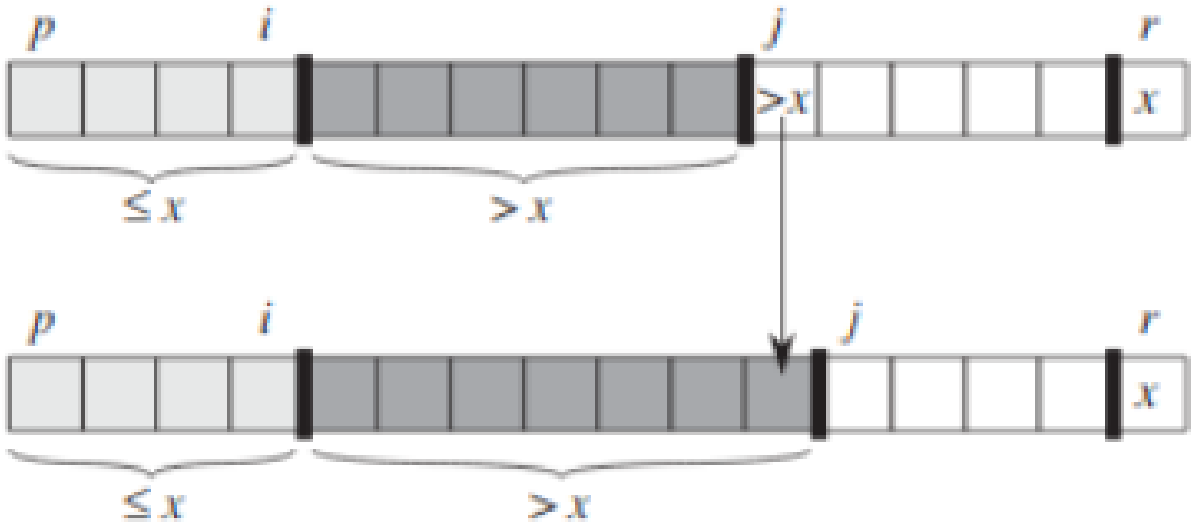
Quicksort



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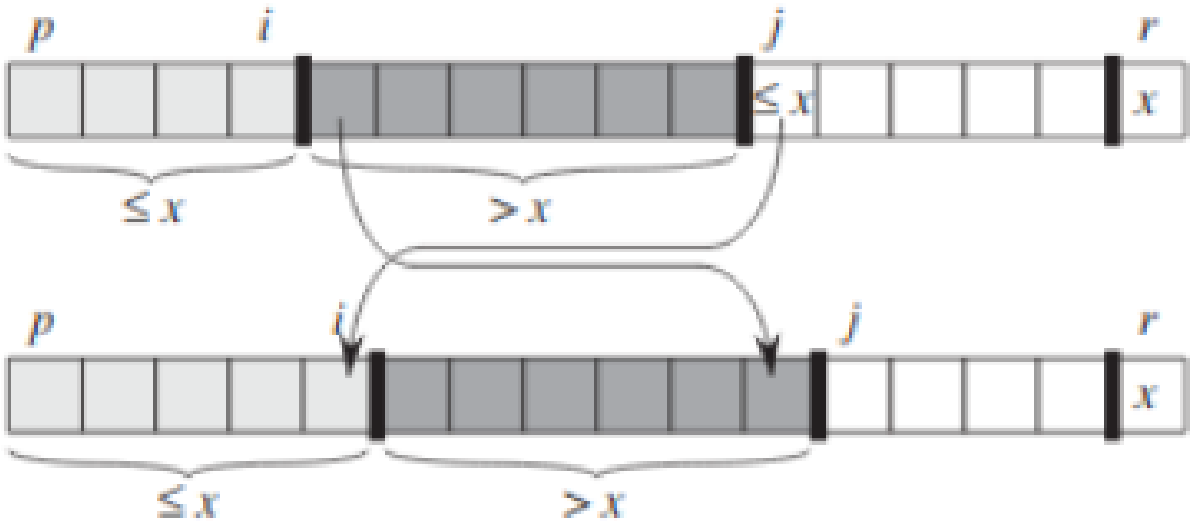
Quicksort



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Gracias