rting

sing

Wrexternally

The sequence to be sorted is stored externally Wn files e.g. disk Wr tape. Performance - O(n^2)* ... O(n (log n))

Algoritm

O (n 2) - Elementary / Simple so

O(n *

Sort algorithms can be grouped ac

1. **InsertiWn: e.g.**
   Merge sort -
2.
3. **Exchange: e.g.**

Internal:

A sort like Shell Sort is difficult to classify even though it may be considered an Insertion

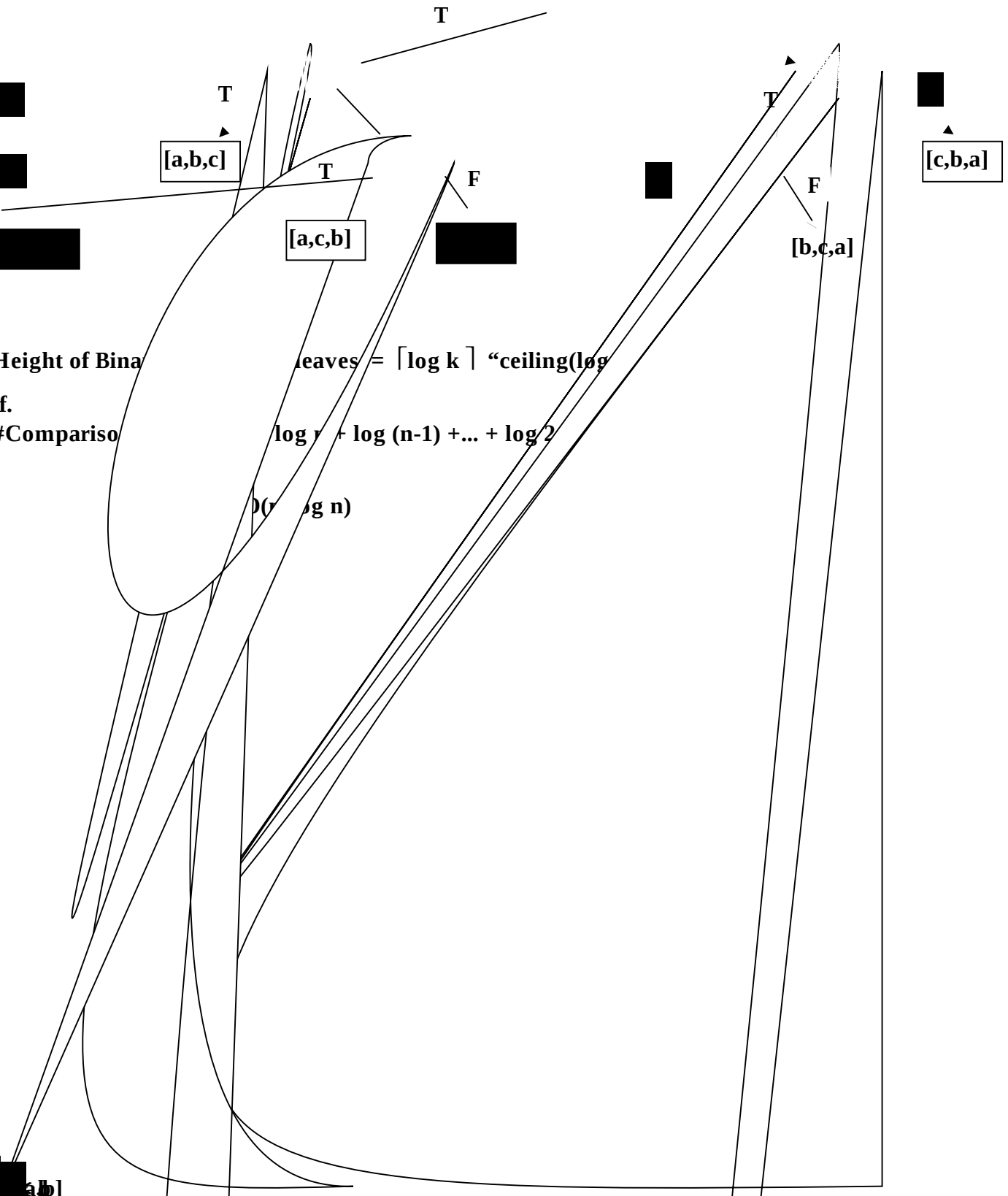
comparisons is O(n Log n).

Assume the sequence has n distQnct elements.

ary comparison. The optimal number of

e.g. n = 3

has values a,b,c. Let use the notatQon [a,b,c] for the sequence s.



Height of Bina leaves = ⌈log k⌉ "ceiling(log

f.

#Compariso log n + log (n-1) +... + log 2

)(n g n)

a,b]

uence

ype T is a function from Nat $_n$ to T.

$$x : g.Nat_n \rightarrow Real$$

$$k \quad f \quad x(S)$$

where $Nat_n = \{1,2,...,n\}$

We can use the notation

$[x(1),..., x(n)]$ or $[x_1,.., x_n]$

to denote the sequence x.

Permutation of a Sequence

Then B(a) = 3, B(b) = 0, B(c) = 2 and B(x) = 0, for other x : T

S→ BOOLEAN

where t ε S ≡S(t)

Note: