

Data Warehousing

Practical Task # 03 **Indexes**

Task 3C

1. Consider a DBMS that has the following characteristics:

- 2KB fixed-size blocks
- 12-byte pointers
- 56-byte block headers

We want to build an index on a search key that is 8 bytes long. Calculate the maximum number of records that can index with a 3-level B tree.

2. Create a B-tree of order 5, with following data

{10, 18, 9, 4, 3, 12, 22, 28, 5, 2, 17, 11}

3. Considering the R-Tree graphically represented through the MBR with a maximal node size of 3, in Fig 1 , perform the following tasks:

- a. Insert, in this order the following data (each of them will be represented as the small red squares): (“08 Qtr2”, “b”), (“08 Qtr2”, “c”), (“09 Qtr1”, “c”). Represent each step graphically, indicating the produced split. As split method use the linear cost algorithm and as heuristics, the least enlargement criterion.
- b. Draw the R-Tree according to the obtained graphical representation of the MBR, after performing exercise 3a.

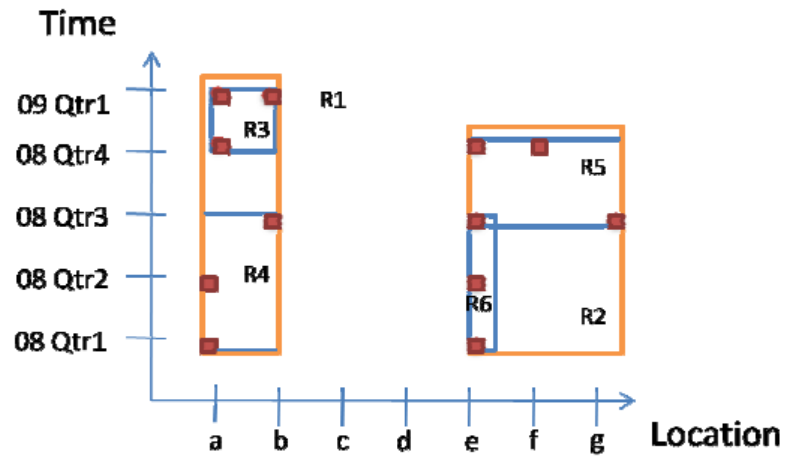


Fig 1

4. Considering the structure of R-tree in Fig 2, Draw R-tree with MBR, that represents relation exist between its rectangles.

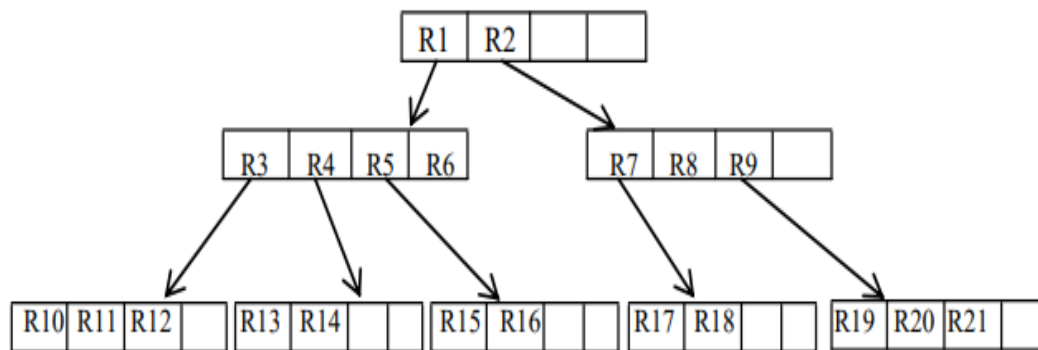


Fig 2