**ADVANCED ALGORITHMS**

7/ 04 /2017

1. Prove that M = O(logn) is the upper bound on the number of children of any node belonging to a Fibonacci tree.
2. What is the maximum number of keys that will fit into a B-tree of height h and number of children at most m?
3. Proving that, managing with algorithms balanced Quick-Union, it exists a sequence of (n-1) Union operations gene rating a tree with hight (logn).
4. Adding an interval at a time, built the tree T containing the following intervals: (4,10), (15,25), (1,12), (7,16), (2,8), (14,20), (18,21). Without modifying T, describe how it is possible to list, in time O(min (n,klogn)) all the k intervals in T that overlap to the interval (7,10).