!!! Attention: You will find a lot of examples with ‘order’ of B-Tree, order! = degree

There are two definitions of a B-tree:

Knuth Order (*Order*) is used by Knuth’s definition. The Knuth order m is the maximum number of children. A Knuth order of m means every node must have a max = m, and a min = ceil(m/2) children.

CLRS Degree (*Degree*) is used in the definition in Cormen et al in Introduction to Algorithms (CLRS). The CLRS degree t is the minimum number of children. A CLRS degree of t means every node must have a min = t and a max = 2t children. Link to the book: <https://web.ist.utl.pt/~fabio.ferreira/material/asa/clrs.pdf>

The number of keys in both cases is equal to the number of children minus one.

Example:

B-tree of order 5 OR m=5

max children = m = 5

min children = ceil(m/2) = 3

max keys = m-1 = 4

min keys = ceil(m/2)-1 = 2

B-tree of degree 5 OR t=5

max children = 2t = 10

min children = t = 5

max keys = 2t-1 = 9

min keys = t-1 = 4

Homework:

* Build a B-Tree with min degree t=2 (each node can contain 1-3 keys) by inserting in order following keys: 35, 2, 1, 89, 4, 33, 24, 6, 7, 88, 14, 23, 22
* Build a B-Tree with min degree t=3 (each node can contain 2-5 keys) by inserting in order following keys: 35, 2, 1, 89, 4, 33, 24, 6, 7, 88, 14, 23, 22
* Implement a trie tree datastructure and add operations to:
  + add a new word to the trie tree
  + print (in alphabetical order) all the words contained in the trie tree