

Make a tree in the class **LRCMap** (25%)

The tree node can have *references to other tree nodes* and a single data variable, **nothing else**. The tree node can **not** hold the key value itself. The key must be represented only by the placement of the node in the tree. *There can be data in any node, not only leaves.*

The keys are strings which only have three possible characters, but as many of those as needed. The characters are 'l' (*left*), 'r' (*right*) and 'c' (*center*), so an example is: "llrcrlccllr".

The tree class has two operations:

- put\_data(key, data)
  - Places this **data** in the tree corresponding to this **key**
  - Overwrite/update if data is already there.
- get\_data(key)
  - returns **data** for that **key**
  - returns **None** if non-existent
  - Returns as soon as it is evident the key is not there
    - Does not initialize any new nodes while searching

The constructor takes a boolean parameter.

- \_\_init\_\_(self, build = False)
  - If **build** is set to True, build a tree that can be used for strings of length up to 8 characters, without adding new nodes after the initialization.
  - If **build** is set to false, initialize an empty tree, or root only.

Example input and tree:

