Algorithms and Data Structures for Data Science

lab_avl

CS 277
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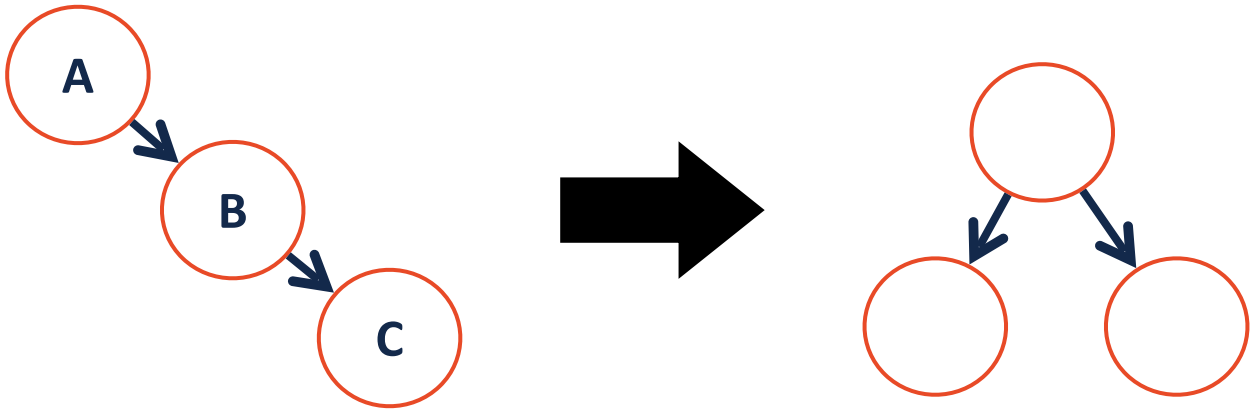
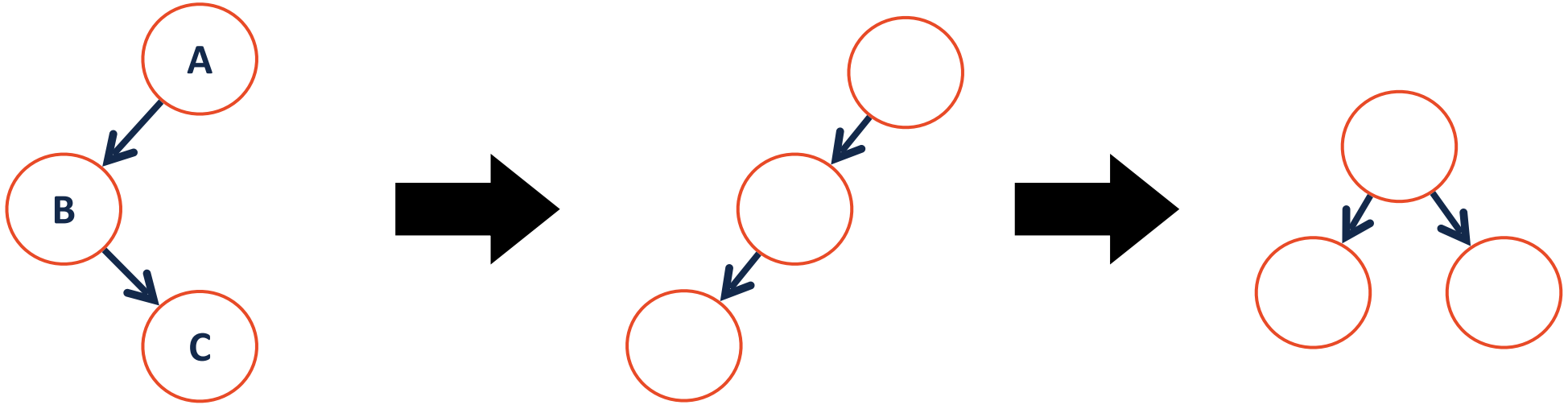
Learning Objectives

Implement tree balancing functions (rotations)

Modify a BST function into an AVL function (rebalance)

AVL Tree Rotations





AVL Insertion

```
class treeNode:
    def __init__(self, key, val, left=None, right=None):
        self.key = key
        self.val = val
        self.left = left
        self.right = right

```

```
def insert(self, key, val):
    self.root = self.insert_helper(self.root, key, val)

def insert_helper(self, node, key, val):
    if node == None:
        return treeNode(key, val)

    if key < node.key:
        node.left = self.insert_helper(node.left, key, val)
    else:
        node.right = self.insert_helper(node.right, key, val)

    return rebalance(node)
```

Rebalancing on insert