SHORT PROGRAMMING QUESTIONS

Please complete this test using Java, Python or Javascript, and submit by pushing to a new github repository and submit the link to the github repo via email.

DEPTH FIRST TREE TRAVERSAL
Discuss an algorithm to traverse a tree, depth first.

CHARACTERS IN STRINGS
Implement a function with signature find_chars(string1, string2) that takes two strings and returns a string that contains only the characters found in string1 and string two in the order that they are found in string1. Implement a version of order N*N and one of order N.

ARRAY COMPACTION
Write a function that takes as input a sorted array and modifies the array to compact it, removing duplicates.
Notes: The input array might be very large.
For example:
● input array = [1, 3, 7, 7, 8, 9, 9, 9, 10]
● transformed array = [1, 3, 7, 8, 9, 10]

ROTATING AN ARRAY
Write a function that takes an array of integers and returns that array rotated by N positions.
For example, if N=2, given the input array [1, 2, 3, 4, 5, 6] the function should return [5, 6, 1, 2, 3, 4]

LEAST COMMON MULTIPLE
The least common multiple of a set of integers is the smallest positive integer that is a multiple of all of the integers in the set.
Write a function that takes an array of integers and efficiently calculates and returns the LCM.

ANGULARJS
Please create an angularjs app that uses angular-pouchdb. It should contain some **automated tests** (Jasmine, Mochai etc) for the angular-pouchdb put function (not the underlying pouchdb one).
That's all. Recommend Karma and Jasmine for tests. No need to add tests optional arguments, just basic **put**.