2023-06-18 - Handout – Recursion

# Q1. Power of Two

Link: <https://leetcode.com/problems/power-of-two/>

Given an integer , return if it is a power of two. Otherwise, return . An integer is a power of two if there exists an integer such that .

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# Q2. Add Two Numbers

Link: <https://leetcode.com/problems/add-two-numbers/>

You are given two **non-empty** linked lists representing two non-negative integers. The digits are stored in **reverse order**, and each of their nodes contains a single digit. Add the two numbers and return the sum as a linked list. You may assume the two numbers do not contain any leading zero, except the number 0 itself.

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Constraints:

* The number of nodes in each list is in range .
* list represents a number that does not have leading zeros.

# Q3. Predict The Winner

Link: <https://leetcode.com/problems/predict-the-winner/>

You are given an integer array . Two players are playing a game with this array: player 1 and player 2. Both players take turns, with player 1 starting first. Both players start the game with a score of 0. At each turn, the player takes one of the numbers from either end of the array (i.e., or ) which reduces the size of the array by 1. The player adds the chosen number to their score. The game ends when there are no more elements in the array. Return if Player 1 can win the game. If the scores of both players are equal, then player 1 is still the winner, and you should also return . You may assume that both players are playing optimally.

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A screenshot of a video game

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Constraints:



# Q4. Wildcard Matching

Link: <https://leetcode.com/problems/wildcard-matching/>

Given an input string () and a pattern (), implement wildcard pattern matching with support for “” and “\*” where:

* “” Matches any single character.
* “\*” Matches any sequence of characters (including the empty sequence).

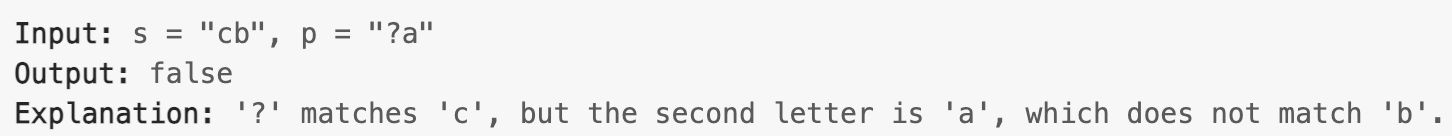
The matching should cover the **entire** input string (not partial).

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A picture containing text, font, receipt, white

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Constraints:

* contains only lowercase English letters.
* contains only lowercase English letters, “” or “\*”