Java Software Development Final Exam (June 20, 2019)

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Problem 1. Pyramid (35%)

Problem Description

Input a number n from keyboard, and then you should print a hollow pyramid inside a rectangle with height n.

Input Format

A single number n $(2 \leq n \leq 100)$ from **keyboard(stdin)**.

Output Format

A hollow pyramid inside a rectangle with height n.

Example

Sample Input:	Sample Output:
2	.*. ***
3	..*.. .*.*. *****
4	...*... ..*.*.. .*...*. *******

Problem 2. Bulls and Cows (35%)

Problem Description

Given two numbers n_1 and n_2 from arguments of main method, where the lengths of their digits are equal, and there is no same digit in n_1 or n_2 itself.

For every digit in n_1, if it's also appeared in n_2 at same position, it's called a A, but if it's appeared n_2 with different position, it's called a B.

Please calculate how many A and B hit between n_1 and n_2.

Input Format

Two numbers n_1, n_2 from **arguments(args)**. The length of each number will ≤ 10, without same digit.

Output Format

How many A and B hits with ?A?B format

Example

Sample Input:	Sample Output:
12345 54321	1A4B
0123 1089	0A2B

Problem 3. Permutations (40%)

Problem Description

Find the permutations of a string.

Input Format

The input is given from the first program **argument(args)**. You can assume that there is no duplicate character in the string.

Output Format

Each permutation is separated by a newline character ('\n'). You should fix the first character and permute the other characters, and then fix the second character and so forth.

Example

Sample Input:	Sample Output:
ABC	ABC ACB BAC BCA CAB CBA
9527	9527 9572 9257 9275 9752 9725 5927 5972 5297 5279 5792 5729 2957 2975 2597

	2579 2795 2759 7952 7925 7592 7529 7295 7259