

FII CODE CTF 2025

A PIN code $P = p_1p_2\dots$ is an arbitrary number consisting of a few pairwise different digits in ascending order ($p_1 < p_2 < \dots$). Tudor got his personal PIN code in the bank, but he decided that the code is not secure enough and changed it in the following way:

1. Tudor multiplied his PIN code P by 999 and obtained the number $A = a_1a_2\dots$;
2. Then he found the sum of all digits of A : $a_1 + a_2 + \dots = S = s_1s_2\dots$;
3. Finally, he took all digits (starting from 0) that are smaller than s_1 , sorted them in ascending order and inserted between digits s_1 and s_2 in the number S .

Resulting number P' is Tudor's new PIN code. For example, if S was 345, then, after such insertion we obtain $P' = 301245$.

Find the new code P' !

