Sandwich numbers V37339_en

We define a *sandwich* number as a natural number n with only two different digits d and e, forming a sequence $de_1e_2 \cdots e_kd$. That is, the digit d is the first and last digit of n (it's the bread), and the digit e is repeated $k \geq 1$ times in between the two d digits (it's the filling). For example, 121 is a sandwich number with $d = 1$, $e = 2$, and $k = 1$. And 4004 is a sandwich number with $d = 4$, $e = 0$ and $k = 2$.

More examples of sandwich numbers: 7227, 41114, 966669, 10001, and 535.
Examples of numbers that are **not** sandwich numbers: 9, 12, 113311, 7878, 1234, 9991, 1000.

Implement a **function** `is_sandwich` that receives a natural number and returns `true` if it is a sandwich number and `false` otherwise.

The function header should be:

```
/**
 * @pre  n >= 0
 * @post returns true if n is a sandwich number, false otherwise
 */
bool is_sandwich(int n);
```

Observation

You only need to submit the requested function; the main program will be ignored.

Problem information

Author: PRO1

Generation: 2026-01-25T13:08:43.058Z