2303. Calculate Amount Paid in Taxes

Description

You are given a **0-indexed** 2D integer array `brackets` where `brackets[i] = [upper_i, percent_i]` means that the `i^th` tax bracket has an upper bound of `upper_i` and is taxed at a rate of `percent_i`. The brackets are **sorted** by upper bound (i.e. `upper_{i-1} < upper_i` for `0 < i < brackets.length`).

Tax is calculated as follows:

- The first `upper_0` dollars earned are taxed at a rate of `percent_0`.
- The next `upper_1 - upper_0` dollars earned are taxed at a rate of `percent_1`.
- The next `upper_2 - upper_1` dollars earned are taxed at a rate of `percent_2`.
- And so on.

You are given an integer `income` representing the amount of money you earned. Return *the amount of money that you have to pay in taxes.* Answers within `10^-5` of the actual answer will be accepted.

Example 1:

```
Input: brackets = [[3,50],[7,10],[12,25]], income = 10
Output: 2.65000
Explanation:
Based on your income, you have 3 dollars in the 1st tax bracket, 4 dollars in the 2nd tax bracket, and 3 dollars in the 3rd tax bracket.
The tax rate for the three tax brackets is 50%, 10%, and 25%, respectively.
In total, you pay 3 * 50% + 4 * 10% + 3 * 25% = 2.65 in taxes.
```

Example 2:

```
Input: brackets = [[1,0],[4,25],[5,50]], income = 2
Output: 0.25000
Explanation:
Based on your income, you have 1 dollar in the 1st tax bracket and 1 dollar in the 2nd tax bracket.
The tax rate for the two tax brackets is 0% and 25%, respectively.
In total, you pay 1 * 0% + 1 * 25% = 0.25 in taxes.
```

Example 3:

```
Input: brackets = [[2,50]], income = 0
Output: 0.00000
Explanation:
You have no income to tax, so you have to pay a total of 0 in taxes.
```

Constraints:

- `1 <= brackets.length <= 100`
- `1 <= upper_i <= 1000`
- `0 <= percent_i <= 100`
- `0 <= income <= 1000`
- `upper_i` is sorted in ascending order.
- All the values of `upper_i` are **unique**.
- The upper bound of the last tax bracket is greater than or equal to `income`.