Experiment ‘p_1_4’ Results

December 18, 2025

Experiment outcome: SUCCESS
Bad responses: 0
Responses containing `assume` : 0
Resolution attempts: 1
Hard fails (resolution): 0
Soft fails (resolution): 0
Verification attempts: 1

Problem Specification

Problem name: p_1_4
Natural language statement: Write a method that returns the balance of an account after the first, second, and third year. The account has an initial balance of $1,000 and earns 5 percent interest per year.
Method signature: p_1_4() returns (first : real, second : real, third : real)

Ensures

- `first == 1000.0 + 1000.0 * 0.05`
- `second == first + first * 0.05`
- `third == second + second * 0.05`

GenAI interactions

Below you will find all interactions between the ‘user’ (program) and the ‘assistant’ (OpenAI).

Program → GenAI

```
You are given the following task to perform in Dafny:

Write a method that returns the balance of an account after the first, second, and third
    ↪ year. The account has an initial balance of $1,000 and earns 5 percent interest
    ↪ per year.

The signature should be:

method p_1_4() returns (first : real, second : real, third : real)

The method should respect the following contract:

ensures first == 1000.0 + 1000.0 * 0.05, ensures second == first + first * 0.05, ensures
    ↪ third == second + second * 0.05

Produce and show only the Dafny body of this method, including the curly braces that
    ↪ surround it. Do not show the signature nor contract. You must not use 'assume'
    ↪ anywhere in your code.
```

GenAI → Program

System fingerprint:
ID: chatcmpl-Co4LtLiqDf5lt933fq7niQll85kbt
Model: gpt-5.1-chat-latest
Created at: 1766049165
Finish reason: stop
Usage: 380 tokens in, and 131 tokens out

```
{
  first := 1000.0 + 1000.0 * 0.05;
  second := first + first * 0.05;
  third := second + second * 0.05;
}
```

Final Program

```
method p_1_4() returns (first : real, second : real, third : real)
        ensures first == 1000.0 + 1000.0 * 0.05
        ensures second == first + first * 0.05
        ensures third == second + second * 0.05
{
  first := 1000.0 + 1000.0 * 0.05;
  second := first + first * 0.05;
  third := second + second * 0.05;
}
```

Total Token Usage

Input tokens: 380
Output tokens: 131
Reasoning tokens: 64
Sum of 'total tokens': 511

Experiment Timings

Overall Experiment started at 1766049166007, ended at 1766049170434, lasting 4427ms (4.43 seconds)
Iteration #1 started at 1766049166007, ended at 1766049170434, lasting 4427ms (4.43 seconds)