Experiment 'p6_1_process_array_first_and_last' 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: p6_1_process_array_first_and_last
Natural language statement: Write a method that takes an array of ten integers and then returns the first and last elements.
Method signature: p6_1_process_array_first_and_last(arr: seq<int>) returns (first_and_last: seq<int>)

Ensures

- `first_and_last == [arr[0], arr[|arr| - 1]]`

Requires

- `|arr| == 10`

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 takes an array of ten integers and then returns the first and last
    ↪ elements.

The signature should be:

method p6_1_process_array_first_and_last(arr: seq<int>) returns (first_and_last: seq<int
    ↪ >)

The method should respect the following contract:

requires |arr| == 10, ensures first_and_last == [arr[0], arr[|arr| - 1]]

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-Co55mtNL3auKAzDaArNWqu7lxLbTE
Model: gpt-5.1-chat-latest
Created at: 1766052010
Finish reason: stop
Usage: 310 tokens in, and 41 tokens out

```
{
  first_and_last := [arr[0], arr[|arr| - 1]];
}
```

Final Program

```
method p6_1_process_array_first_and_last(arr: seq<int>) returns (first_and_last: seq<int
    ↪ >)
       requires |arr| == 10
       ensures first_and_last == [arr[0], arr[|arr| - 1]]
{
  first_and_last := [arr[0], arr[|arr| - 1]];
}
```

Total Token Usage

Input tokens: 310
Output tokens: 41
Reasoning tokens: 0
Sum of 'total tokens': 351

Experiment Timings

Overall Experiment started at 1766052012575, ended at 1766052015389, lasting 2814ms (2.81 seconds)
Iteration #1 started at 1766052012575, ended at 1766052015389, lasting 2814ms (2.81 seconds)