

Experiment ‘p_1_2’ 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_2

Natural language statement: Write a method that returns the sum of the first ten positive integers, $1 + 2 + \dots + 10$.

Method signature: p_1_2() returns (i : int)

Ensures

- $i == (10 * 11) / 2$

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 sum of the first ten positive integers, $1 + 2 + \dots + 10$.

The signature should be:

method p_1_2() returns (i : int)

The method should respect the following contract:

ensures i == (10 * 11) / 2

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-Co4LhWDjlOmq3NW72OJRVh9RQMxdj

Model: gpt-5.1-chat-latest

Created at: 1766049153

Finish reason: stop

Usage: 272 tokens in, and 228 tokens out

```
{
  var sum := 0;
  var k := 1;
  while k <= 10
    invariant 1 <= k && k <= 11
    invariant sum == (k - 1) * k / 2
  {
    sum := sum + k;
    k := k + 1;
  }
  i := sum;
}
```

Final Program

```
method p_1_2() returns (i : int)
  ensures i == (10 * 11) / 2
{
  var sum := 0;
```

```
var k := 1;
while k <= 10
  invariant 1 <= k && k <= 11
  invariant sum == (k - 1) * k / 2
{
  sum := sum + k;
  k := k + 1;
}
i := sum;
}
```

Total Token Usage

Input tokens: 272

Output tokens: 228

Reasoning tokens: 128

Sum of 'total tokens': 500

Experiment Timings

Overall Experiment started at 1766049154896, ended at 1766049158737, lasting 3841ms (3.84 seconds)

Iteration #1 started at 1766049154897, ended at 1766049158737, lasting 3840ms (3.84 seconds)