

Experiment ‘p_1_8’ 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_8

Natural language statement: Write a method that returns an imitation of a Piet Mondrian painting. (Search the Internet if you are not familiar with his paintings.) Use character sequences such as @@@ or ::: to indicate different colors, and use - and | to form lines.

Method signature: p_1_8() returns (s : string)

Ensures

- `s == mystring(" !!!@@@@@@@@@@@@@@@@@@@@\n", 5)`

Functional Code Given

```
function mystring(s : string, n : nat): string
{
  if n == 0 then "" else s + mystring(s, n - 1)
}
```

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 an imitation of a Piet Mondrian painting. (Search the
→ Internet if you are not familiar with his paintings.) Use character sequences such
→ as @@@ or ::: to indicate different colors, and use - and | to form lines.

The signature should be:

method p_1_8() returns (s : string)

The method should respect the following contract:

ensures s == mystring(" !!!@@@@@@@@@@@@@@@@@@@@\n", 5)

The contract uses the following dafny code:

```
function mystring(s : string, n : nat): string
{
  if n == 0 then "" else s + mystring(s, n - 1)
}
```

These function(s) must not be used in your implementation of the method.

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-Co4MC9bcfcGM3w9MdX1WirICjmd99

Model: gpt-5.1-chat-latest

Created at: 1766049184

Finish reason: stop

Usage: 448 tokens in, and 113 tokens out

```
{
  var line := " !!!@@@@@@@@@@@@@@@@@@@@\n";
  s := line + line + line + line + line;
}
```

Final Program

```
function mystring(s : string, n : nat): string
```

```
{
  if n == 0 then "" else s + mystring(s, n - 1)
}

method p_1_8() returns (s : string)
  ensures s == mystring(" !!!@@@@@@@@@@@@@@@@@@@@\n", 5)
{
  var line := " !!!@@@@@@@@@@@@@@@@@@@@\n";
  s := line + line + line + line + line;
}
```

Total Token Usage

Input tokens: 448

Output tokens: 113

Reasoning tokens: 64

Sum of 'total tokens': 561

Experiment Timings

Overall Experiment started at 1766049185847, ended at 1766049189504, lasting 3657ms (3.66 seconds)

Iteration #1 started at 1766049185847, ended at 1766049189504, lasting 3657ms (3.66 seconds)