

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(" !!!@ccccccccc@:::@:::ccccccccc@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(" !!!@ooooooooooooooo@oooo@\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: chatmpl-Co4MC9bcfcGM3w9MdX1WirICjmd99

Model: gpt-5.1-chat-latest

Created at: 1766049184

Finish reason: stop

Usage: 448 tokens in, and 113 tokens out

```
{
    var line := " !!!@ooooooooooooooo@oooo@\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(" !!!@oooooooooooooo\000\n", 5)
{
  var line := " !!!@oooooooooooooo\000\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)