

Experiment ‘P_3_6_ParametrizedOrder’ 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_3_6_ParametrizedOrder

Natural language statement: Write a method that takes three numbers and returns "increasing" if they are in increasing order, "decreasing" if they are in decreasing order, and "neither" otherwise. A Boolean parameter triggers the method to be "strict" or "lenient". In lenient mode, the sequence 3 4 4 is increasing and the sequence 4 4 4 is both increasing and decreasing.

Method signature: P_3_6_ParametrizedOrder (i:int, j: int, k: int, strict: bool) returns (s: string)

Ensures

- if strict then if i < j < k then s == "increasing" else if i > j && j > k then s == "decreasing" else s == "neither" else if i <= j <= k then if i == j == k then s == "increasing and decreasing" else s == "increasing" else if i >= j && j >= k then s == "decreasing" else s == "neither"

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 three numbers and returns "increasing" if they are in
→ increasing order, "decreasing" if they are in decreasing order, and "neither"
→ otherwise. A Boolean parameter triggers the method to be "strict" or "lenient". In
→ lenient mode, the sequence 3 4 4 is increasing and the sequence 4 4 4 is both
→ increasing and decreasing.

The signature should be:

```
method P_3_6_ParametrizedOrder (i:int, j: int, k: int, strict: bool ) returns (s: string)
```

The method should respect the following contract:

```
ensures if strict then if i < j < k then s == "increasing" else if i > j && j > k then s  
→ == "decreasing" else s == "neither" else if i <= j <= k then if i == j == k then s  
→ == "increasing and decreasing" else s == "increasing" else if i >= j && j >= k  
→ then s == "decreasing" else s == "neither"
```

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-Co4SjnWKJCnzRbeNYpKI59vfCSr0B

Model: gpt-5.1-chat-latest

Created at: 1766049589

Finish reason: stop

Usage: 588 tokens in, and 245 tokens out

```
{  
    if strict {  
        if i < j && j < k {  
            s := "increasing";  
        } else if i > j && j > k {  
            s := "decreasing";  
        } else {  
            s := "neither";  
        }  
    } else {  
        if i <= j && j <= k {  
            if i == j && j == k {  
                s := "increasing and decreasing";  
            } else {  
                s := "neither";  
            }  
        } else {  
            if i > j && j > k {  
                s := "decreasing";  
            } else {  
                s := "increasing";  
            }  
        }  
    }  
}
```

```

        s := "increasing";
    }
} else if i >= j && j >= k {
    s := "decreasing";
} else {
    s := "neither";
}
}
}

```

Final Program

```

method P_3_6_ParametrizedOrder (i:int, j: int, k: int, strict: bool ) returns (s: string)
    ensures if strict then if i < j < k then s == "increasing" else if i > j && j > k
        then s == "decreasing" else s == "neither" else if i <= j <= k then if i ==
            j == k then s == "increasing and decreasing" else s == "increasing" else
            if i >= j && j >= k then s == "decreasing" else s == "neither"
{
    if strict {
        if i < j && j < k {
            s := "increasing";
        } else if i > j && j > k {
            s := "decreasing";
        } else {
            s := "neither";
        }
    } else {
        if i <= j && j <= k {
            if i == j && j == k {
                s := "increasing and decreasing";
            } else {
                s := "increasing";
            }
        } else if i >= j && j >= k {
            s := "decreasing";
        } else {
            s := "neither";
        }
    }
}

```

Total Token Usage

Input tokens: 588
Output tokens: 245
Reasoning tokens: 64
Sum of ‘total tokens’: 833

Experiment Timings

Overall Experiment started at 1766049590872, ended at 1766049595896, lasting 5024ms (5.02 seconds)
Iteration #1 started at 1766049590872, ended at 1766049595896, lasting 5024ms (5.02 seconds)