

# Evaluation: Hashi-Solver (Group M)

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## 1 Introduction

In the context of Hashi puzzles, also known as Bridges, we aim to evaluate the scalability of our encoding method as grid sizes increase. This assessment will measure the performance of our solver and explore ways to make the encoding more efficient. Our objective is to ensure that our solver can efficiently handle larger grids while maintaining accuracy. The following sections will present our analysis of the solver's performance using Criterion and the steps we've taken to optimize its efficiency.

## 2 Benchmark Setup

The benchmarks were set up using a variety of the provided test files, each representing different sizes and complexities. The files used are:

- `test1.txt`
- `test8.txt`
- `test20.txt`

## 3 Performance Metrics

TODO

## 4 Function Performance Comparison

A comparative analysis of the `encode_mode`, `solve_mode`, and `esr_mode` functions was conducted. The analysis focused on evaluating the execution time and resource usage of each function.

## **5 Impact of Test File Size**

The influence of the size and complexity of input data on the performance of each function was analyzed. This section highlights how varying file sizes impact the execution time and efficiency.

## **6 Anomalies and Outliers**

Any anomalies or outliers observed in the benchmark results are discussed here. Possible explanations for these irregularities are also explored.

## **7 Optimization Opportunities**

Based on the benchmark results, potential areas for performance optimization are identified. Recommendations for improving the efficiency of the functions are provided.