# 2048 Project 2

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Responsibilities:

Rasmus: Creating the base for the heuristic usage, most points direction heuristic, Penalize distance heuristic, report  
Iiro: Dynamic merge priority heuristic, testing on other possible heuristics and options

## Changes

First, we made the Calculate chance definition work and calculate the chances for the tile 2 and tile 4 to appear in the possible\_boards. After which we started on heuristics.  
Rasmus added the heuristic that found the direction with the highest combined point total after merges and a heuristic that penalized scattered board, while Iiro tested on other heuristic ways and later chose the Dynamic merge priority heuristic that when low on space prioritizes getting rid of low numbers to free up space. This later turned to have a negative effect on the high score created by using only HighestValueDirection heuristic along with Penalize distance heuristic.

## Results

|  |  |  |
| --- | --- | --- |
|  | Average | Top Score |
| Unmodified | 765 | 1 468 |
| Highest value direction | 9 321 | 15 812 |
| Penalize Distance | 801 | 1 800 |
| Dynamic merge priority | 7751 | 12 256 |
| All | 4672.8 | 6104 |

HVD took extremely long to process as well as DMP.   
PD had the shortest run time.  
When running all, the run time was over 10 minutes.

Iiro’s DMP heuristic

A screen shot of a computer program

AI-generated content may be incorrect.

Rasmus’ HVD

A screen shot of a computer code

AI-generated content may be incorrect.

Rasmus’ PD

A computer screen with text and images

AI-generated content may be incorrect.