

ITI8600 Home assignment 1: Solving problems by search

1 Deadline

You are expected to develop the homework using the GIT repository of your group that will be provided by Monday, September 12. Latest by September 30 anywhere in the world you should submit the SHA1 hash of the revision in GIT (that looks something like `fa2d7c2415f2f605aa2484e6f2dbcd3b5c033276`) to the Moodle appropriate homework submission page of the course ITI8600 available at <https://ained.ttu.ee>. Once you have submitted the hash of the revision to Moodle, we can check out the code and look at that revision.

2 Task

Your task is to model the game given in Figure 1 in the way described in the lectures about constraint solving and search. You should start from an empty board and the goal is to find a configuration of the tiles in pyramid shape where for all tiles the colors of the lines passing from one tile to another match.

Your goal is to compare at least 3 different appropriate methods of solving the task and present the analysis in a report form.

3 Reporting

The report should contain:

- Documented code (in Python or some other programming language) stating how you modelled the problem. We suggest that you use the framework provided in <https://github.com/hobson/aima>, but this is not mandatory.
- Brief explanation what methods you chose to solve the problem accompanied by relevant characteristics that enable you to compare the solutions.
- Empirical evaluation of all used methods.
- Explanation why appropriate methods performed as they performed.
- Solution. (If possible, tell how many solutions there are)



Figure 1: Wrong configuration of 15 tiles in pyramid shape. In correct configuration all color lines passing from one tile to another need to match in color.

In addition to the report you should submit the code that you used to achieve all the result with brief instructions how to run it.