Presentation for Assignment 4

Implementation of Heuristic Algorithm for Board Games

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Group 3

Software Modeling and Verification Chair
RWTH AACHEN UNIVERSITY

Exercise 1

- we find all possible moves
- we rate the board they lead to
- we sort the possible moves by the value of that board
- we use **Collections.sort()** for that

Exercise 2

Benchmarking

These are our benchmarking results over 10 different maps:

	Minimax	Alpha-beta	Alpha-beta+sort
States visited	30169342	7775122	4334397
total time(in s)	548,972	162,778	93,694
time per state(in ms)	54	47	46

Exercise 3

Iterative Deepening

- Used for Minimax and Alpha-Beta (both do Depth-First Search)
- After each calculation we check whether there is still enough time for the next depth by estimation
- In the methods we have a security check whether we need to abort because we are running out of time (then use result of last complete calculation)
- Estimated time for depth i+1: time for depth i + (time for level i * branching factor)
- branching factor for Minimax: Average branching factor (number of moves on a state) from the calculation before
- branching factor for Alpha-Beta: