

### Topics for group presentations:

1. Compare search techniques presented during the lectures. What are the pros and cons of various approaches? Provide examples (examples can be artificial and non-meaningful) showing why and in what cases particular approach are efficient/non-efficient. You can also implement these algorithms and check their runtimes empirically.
2. Describe Turing machine as a model of computation. Present how does it work, i.e., how does it perform computations – for this, use some simple example (it does not need to be a meaningful example). You can also show its implementation and how it works in practice. Explain what makes Turing machine so important for research in computer science and AI.
3. Explain how does Dijkstra algorithm for computing shortest paths in a graph from a source vertex to all other vertices work. Is it an informed or uninformed search algorithm? Compare it with A\* algorithm in the task of searching for shortest paths; the comparison can be theoretical (explaining theoretical differences) and/or practical (providing experimental evidence).
4. Provide examples of games for which we can use MINIMAX (and its modifications) to compute optimal move, and examples of games for which MINIMAX is not a good choice. Explain how minimax can be applied in these examples and how does it perform; you can also try to implement it and show its practical performance. What are a good alternatives for MINIMAX, when it is not applicable?