

# General Game Playing

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## Exercise 1.1

Fill out the following grids with an example of a game of the appropriate type in each cell. Consider only games that can be modeled with the state machine model.

- Single-Player Games

Complete Information	Partial Information

- Multi-Player Games without Communication

	Complete Information	Partial Information
Simultaneous Moves		
Alternating Moves		

- Multi-Player Games with Communication

	Complete Information	Partial Information
Simultaneous Moves		
Alternating Moves		

Which classes of games can be described with the GDL?

## Exercise 1.2

Form a team consisting of preferably 3 people (2 or 4 is also accepted) for the programming assignments and the competition. Invent a name for your team and send an email to [stephan.schiffel@inf.tu-dresden.de](mailto:stephan.schiffel@inf.tu-dresden.de) with the names, email addresses and logins of the computing center (FRZ) of all team members. All other tasks of will be done in teamwork.

## Exercise 1.3

Download the basic player code and the gamecontroller from the course webpage ([http://www.inf.tu-dresden.de/index.php?node\\_id=2195](http://www.inf.tu-dresden.de/index.php?node_id=2195)). Play some simple games with the player. Familiarize yourself with the source code of the player.

Note: You are not required to use the provided code. You can use whatever programming language you like and all (legal) resources you find to implement your player. However, implementing a parser and reasoner for GDL is time consuming. Therefore, we recommend not to start from scratch.

## Exercise 1.4

A reflex agent is an agent that chooses its action based on a set of fixed condition-action rules. Implement a reflex agent that plays Tic-Tac-Toe as good as possible! We'll test your players against each other in the next tutorial.

## Exercise 1.5

Think about an interesting game (or invent a new game) which can be described with the GDL, but is not already available on <http://games.stanford.edu:4000/> or the course web-page. If

you don't have an idea think about interesting variants of known games, e.g., combine concepts of different games, change the number of players, the goals of the players, etc.

Optional: Encode the game in the GDL!