

## Methods Reference

This page gives a reference list of all of the methods available to Capture the Flag players. These methods are used to sense the environment and to execute actions.

### Agent Action Methods

Agent action methods are method that an agent can execute to change its behavior. For Capture the Flag agents, this means turning or moving.

- **turn-left**  
Turns the agent left by a small amount
- **turn-right**  
Turns the agent right by a small amount
- **set-speed to *agentSpeed***  
Sets the speed of the agent to *agentSpeed* units. *agentSpeed* may be between 0.0 and 1.0.

### Agent Sensor Methods

Agent sensor methods are methods that may be used by agents to sense their environment.

- **get-id-number**  
returns an int, a unique number between 0 and 9 for each agent on the team. You can use this to assign different tasks to different agents (for example: offense, flag guard and jail guard).
- **sense-my-team**  
returns a list of the players on the agent's team in the agent's sensor range.
- **sense-other-team**  
returns a list of the players on the other team in the agent's sensor range.
- **sense-my-flag**  
returns an object—the flag of the agent's team, if it is in the sensor range.
- **sense-other-flag**  
returns an object—the flag of the other team, if it is in the sensor range.
- **sense-my-jail**  
returns an object, the jail where your teammates are being held, if it is in the sensor range. This is the jail you want to get to in order to free your teammates.
- **sense-other-jail**  
returns an object, the jail where the other team's players are being held, if it is in the sensor range. This is the jail you want to defend.
- **get-my-home-location**  
returns a vector, the closest point to the agent on the agent's home-side.

- **get-angle to *vectorLocation***

returns a number representing, in radians, the angle to the location *vectorLocation*. A positive number indicates that the point is to right of the agent, a negative number indicates that the point

## Controller Methods

Controller methods are methods which all agents can access by referring to the variable controller, which is defined for all agents.

- **get-time**

returns a float, the current time in simulated seconds of the entire tournament.

- **get-game-time**

returns a float, the current time of the current game in the tournament. Each games runs for 500 simulated seconds.

- **get-jailed-red-count**

returns an int, the number of Red agents in jail.

- **get-jailed-blue-count**

returns an int, the number of Blue agents in jail.

- **get-red-wins**

returns an int, the number of games the red team has won this tournament

- **get-blue-wins**

returns an int, the number of games the blue team has won this tournament

- **get-ties**

returns an int, the number of tied games in the current tournament

## "Real" Object Information Method

This method can be called for any "Real" object, including both agents and flags:

- **get-location**

returns a vector, the location of a given object.