

Software Engineering Laboratories

Universal Game System

Game Protocol

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This document describes protocol for game with id equal to **5-in-line-tic-tac-toe**. The rules are similar to classical tic tac toe except for:

- board has dimensions 20x20
- winner must place five x's or o's in line
- if a player cannot move loses

The first player plays with x's and moves first, the second one plays o's. Game master selects (randomly) the first player and this is also the decision on pieces type.

1. XML encoding

All XML data must be encoded in UTF-8 without byte order mark.

2. Protocol.

- Each move is sent in format `<tic x='xPos' y='yPos' />`. It describes position where a player puts 'o' or 'x'. If a move is forbidden (the position is already occupied.) then this player immediately loses.
- When a player receives game state only the move of the opponent is sent in format `<tac x='xPos' y='yPos' />`. No other information is sent as a game state, thus a player must remember all previous moves of the opponent.
- Please remember, that a move is forwarded by the server to the game master. The game master prepares game state information and sends it to the server, which forwards it to all players (also to the one who has done the move).
- Before the first move, when the game state is empty game state tag is to be sent empty – no "tac" tags inside.

3. Example. Please note, that game master (coordinator) is not shown here.

- Player 1
 - move <tic x='10' y='8'/>
- Player 1
 - receives game state <tac x='10' y='8'/>
- Player 2
 - receives game state <tac x='10' y='8'/>
 - move <tic x='10' y='7'/>
- Player 2
 - receives game state <tac x='10' y='7'/>
- Player 1
 - receives game state <tac x='10' y='7'/>
 - move <tic x='9' y='8'/>
- Player 1
 - receives game state <tac x='9' y='8'/>
- Player 2
 - receives game state <tac x='9' y='8'/>
 - move <tic x='9' y='7'/>