

Game of NIM

November 2022

1 Rules

- Info: 2 players and fixed amount of fire matches
- Before game: players choose the number of fire matches and which one of them will go first
- Players take turns in removing fire matches, always removing at least one and up to X matches($X=2$)
- The player who removes the last fire match loses the game

2 Assignment

1. Implement basic game of NIM in UPPAAL.
2. Implement extended game of NIM in UPPAAL

3 Extended Game1

- one player is deterministic - your choice
- one player is stochastic - your choice
- you start with a grid 8×8 and players take turn by removing either a whole row or a whole column
- player who removes the last element loses

4 Extended Game2

- 2 players is stochastic - your choice
- one player is deterministic - your choice

- you start with 3 players, each removes number of matches higher than 0 and lower than 4
- find a deterministic player who will always win