Nodes

Relatório Intercalar

Mestrado Integrado em Engenharia Informática e Computação

Programação em Lógica

Grupo Nodes_3:
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1 Nodes: The Game

1.1 History

Nodes is a board game of abstract strategy, created by The Game Crafter and designed by RGBY Games. It was released on September 10, 2016 and it is still on its 1st edition. This game was made for casual gamers, in particular, for people who like chess due to their similarity. Nodes require 2 to 4 players over the age of 12.

1.2 Brief Description

1.2.1 Pieces

Nodes: Each player starts with **1** node. Nodes are like kings in chess: they can only move **one space in each turn**. In this game, they are also communication hubs. They emit signals in all eight directions (front, back, sides and diagonals), called **lines of communication**.

Units: Each player starts with **8** units. Unlike pawns in chess, units can move as many spaces as they want in each turn, **as long as they are along** a line of communication.

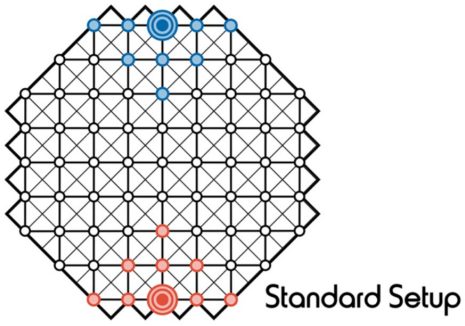

Fig. 1: Initial board set up

1.2.2 Board

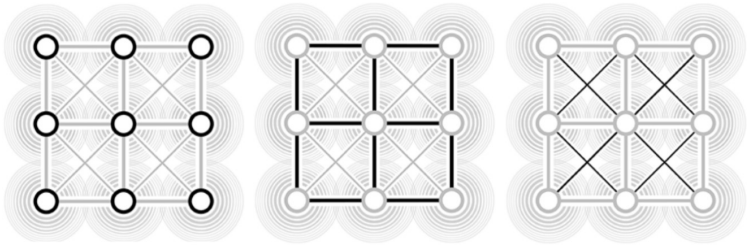

Fig. 2: Spaces, Roads and Conduits

Spaces: White circles where both units and nodes can finish their turn.

Roads: Boldest lines connecting spaces along which both pieces can draw their paths.

Conduits: Thin crossing lines that cannot be part of a piece's path.

1.3 Rules

1.3.1 How to play

Each turn has three stages. The first one consists in visualizing the lines of communication and determine which units can move. Then, the player moves each unit to the desired position (if possible). * Finally, the player moves the node one space to end the turn.

The goal of the game is to surround the opponent's node. When only one node is able to move, the game ends and the winner is the player in charge of that node.*

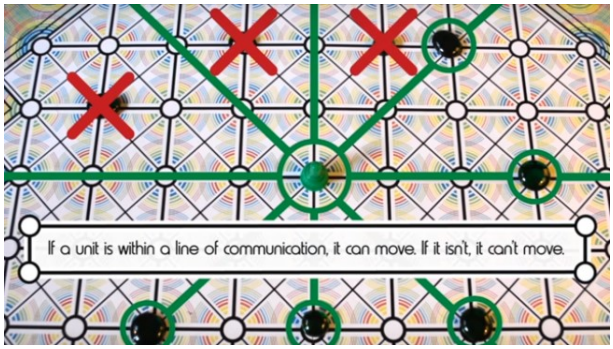

Fig. 3: In green, the communication lines. Units with a circle can move. Units with a cross cannot.

1.3.2 Lines of Communication

Lines of communication are the basis of the movement. Each node emits a line of communication along each road and conduit that surrounds it. All lines of communication are available in every player's turn, even if they are being emitted by another player's node. Units can interfere with the communication lines through mechanisms called **relay** and **interception**.

Relay: If a unit is along a communication line transmitted from the node of the same team, it relays the signal, letting all other units further along the path receive it as well.

Interception: If a unit is along a communication line transmitted from a node of an opposite team, it intercepts the signal, thus not letting other units further along the path receive it.

1.3.3 Unit Movements

Units can move through communication lines until the player decides to finish * its? (the) * turn. Units can't move through conduits. There is no limit on how many spaces a unit can move.

Under some circumstances, it is possible for a unit to jump over another one. This can happen when the spaces before and after the unit * in (eu preferia

blocking em vez de in)* the way are in the same line of communication: units cannot jump over nodes and can only jump one enemy unit at a time.

2 Representação do Estado do Jogo

Descrever a forma de representação do estado do tabuleiro (tipicamente uma lista de listas), com exemplificação em Prolog de posições iniciais do jogo, posições intermédias e finais, acompanhadas de imagens ilustrativas.

3 Visualização do Tabuleiro

Descrever a forma de visualização do tabuleiro em modo de texto e o(s) predicado(s) Prolog construídos para o efeito. Deve ser incluída pelo menos uma imagem correspondente ao output produzido pelo predicado de visualização.

4 Movimentos

Elencar os movimentos (tipos de jogadas) possíveis e definir os cabeçalhos dos predicados que serão utilizados (ainda não precisam de estar implementados).