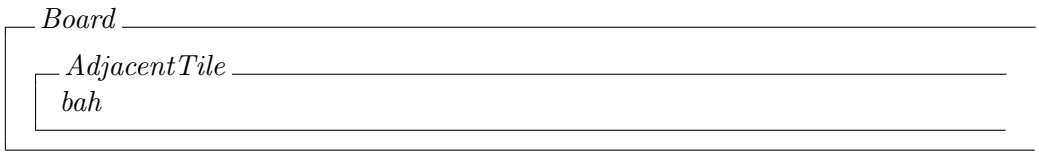
Abstract

This document contains the specification for the board module for our game.

1 CanMove



2 The specification

Board

$Surface == Water \mid Land$

$Occupant == Fox \mid Dolphin \mid Empty$

$Tile : Occupant \times Surface$

$Coordinate : \mathbb{N} \times \mathbb{N}$

$Player == Fox \mid Dolphin$

$NumberOfPlayers == 0 \mid 1 \mid 2$

$Status == WaitingForPlayers \mid InGame \mid EndGame$

$MinBoardSize : \mathbb{N}$

$MinBoardSize = 10$

$MaxBoardSize : \mathbb{N}$

$MaxBoardSize = 50$

$BoardSize : \mathbb{N}$

$MinBoardSize \leq BoardSize \leq MaxBoardSize$

$board : Coordinate \pfun Tile$

$(\forall_{(x_1,y_1)} \in dom(board) : \{Land\} \lhd ran(board) \bullet$
$\quad (\forall_{(x_2,y_2)} \in dom(board) : \{Land\} \lhd ran(board) \bullet$
$\quad (x_1, y_1) path (x_2, y_2)))$

$size : BoardSize$

$status : Status$

$numberOfPlayers : NumberOfPlayers$

Init

$status = WaitingForPlayers$

$numberOfPlayers = 0$

TryMove

$player? : Player$

$from? : Coordinate$

$to? : Coordinate$

$status! : \mathbb{B}$

$\mid from.1 - to.1 \mid + \mid from.2 - to.2 \mid = 1$

Where $(x_1, y_1) path (x_2, y_2)$ is defined as: there exists a path containing only land tiles from (x_1, y_1) to (x_2, y_2). A path is formed by moving only left, right, up or down over the board, moving from one tile to another.