## Board

### CRC

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| Board | |
| Responsibilities: To maintain a model of the board that is to be played on. | Collaborators: HexNode and BoardSize help to accomplish the boards task of representing a hexagon board of size 5 or 7. |

### Description / Overview

The Board’s main purpose, as specified in the CRC card, is to represent a model of an abstract data type called Board. In our MVC architecture, the board is a model so it is only used to store data. A board is to represent a series of hexagon tiles to form a board in the shape of a hexagon. There are two size options for the length of each side that are determined by the enumerator BoardSize; One size will be a length of 5 hexagon tiles and the other is size 7. All the tiles will be linked together with the known size to form a Board model. Once the size is specified and the Board is created, the Game class will then be created and it will store a reference to that specific instance of the Board. It is worth noting that the Board class will be created once a RoboSport game has been initiated.

### Instance Variables

#### root

Data Type:HexNode

Contains a private reference to the first HexNode that is useful for the Board’s rendering.

#### corners

Data Type:HexNode[6]

A private array of HexNode’s to represent the 6 corners of the Board that will be used to determine Team starting positions.

### Method Overview

*public Board(BoardSize size)*

*public HexNode getRoot()  
 public HexNode getCorner(int direction)   
 public void linkNode(HexNode cur, int side, HexNode other)*

### Method Writeups

#### public Board(BoardSize size)

This is the constructor for the Board, it takes a BoardSize as input take is determined by the user. The constructor will then create a root HexNode and store; it uses this reference to iteratively create HexNodes that will expand from the root until the size condition is satisfied. Once the Board is created, it identifies and stores the corner HexNodes into an array of six (since there are six corners).

#### public void linkNode(HexNode cur, int side, HexNode other)

The linkNode method is used when initializing the Board to link together HexNodes. As arguments it receives two HexNodes, “cur” and “other”, as well as an integer called side. Cur represents the current node that is being added to the board by linking it with the “other” HexNode. The Board constructor repeatedly links nodes together until the board is complete.