

Introduction to Comp. Sci., Homework 6

Due at 12pm on Friday, March 29

Readings from Liang

Read chapter 10, “Thinking in Objects,” and section 15.5, “Interfaces.”

Optional readings and exercises from HFJ

Read chapter 7 of Head First Java, “Better living in Objectville.” Do the exercises, and check your answers against those provided at the ends of the chapter.

To be turned in

Create a Java class, `TicTacToeBoard` in the `hw6` package, that implements a tic-tac-toe gameboard of arbitrary size. The rules of the game are [described on Wikipedia](#). It should have the following methods:

- `TicTacToeBoard(int edgeSize);`
A constructor that initializes a `edgeSize × edgeSize` board.
- `int getEdgeSize();`
Returns the length of the edges of the board passed to the constructor.
- `void makeMove(int row, int column, Mark mark);`
Puts the specified mark at the specified row and column, where valid rows and columns range from 0 to `getEdgeSize()-1`.
- `Mark getSquareContents(int row, int column);`
Returns the mark placed on the specified square by `makeMove`. If no such move has been made, returns `Mark.NONE`.
- `Mark getVictorIfAny();`
Returns `Mark.NONE` if no one has won, `Mark.X` if X has won, and `Mark.O` if O has won. A victory occurs when a row of Xs or Os occupies a full row, column, or diagonal.

Your class should implement `testing.hw6.BoardInterface`, which will force a compiler error if you fail to define one of these methods. Check out the source in [testing/hw6/BoardInterface.java](#).

In the same directory, I also provide `testing.hw6.Mark`, an `enum` that defines constants representing the marks you can place on a tic-tac-toe board: `Mark.NONE`, `Mark.X`, and `Mark.O` (that’s a capital letter O, not a zero).

A skeleton of an implementation would be:

```
package hw6;

import testing.hw6.BoardInterface;
import testing.hw6.Mark;

public class TicTacToeBoard implements BoardInterface {
    ...
}
```

Finally, as usual, I am providing some tests for you, which you can run with (Mac):

```
testing/test.sh Hw6Test
```

or (Windows):

```
testing\test.ps1 Hw6Test
```