CMPSC-221: OOP for Web

Homework 11: 2-Player Tic-Tac-Toe - Fall 2017
Due: Friday, December 8th, 11:59pm
Blue Plate Special: Wednesday, December 6th, 1:25pm

Background

Over the course of the semester, we have worked to develop a tic-tac-toe game. It started off as just being a text based game, but soon after became a graphical game using JavaFX. Over the next two weeks we will work to take the game and now make it playable by two people running on two different "screens" with a database being the way information is communicated between the two instances.

Instructions

You will need to on your own take the tic-tac-toe game that you worked on with your group and modify it to get information from a database. Since we did not do a lot with database construction, I will provide you with a very simple database that will allow for you to store the contents of each space. It will only contain a "space" table that has row, column, and contents fields for each cell on the board. You are free to add tables to your database if you want using the method we talked about in class. Since we did not talk about this much if you need help stop by my office.

Another thing that you will need to do is convert your project to instead be driven by Maven so we do not have to worry about issues getting the JDBC driver up and running. This might sound daunting, but if you create a new IntelliJ Maven project and the packages you can copy all of your files from the old project to the right places in the new one, and update the package names and be done in an hour tops. I will give you the coordinates for the JDBC driver so we all make sure we have the right one.

JDBC Maven Coordinates

The coordinates for the SQLite JDBC are as follows:

```
<dependency>
    <groupId>org.xerial</groupId>
    <artifactId>sqlite-jdbc</artifactId>
    <version>3.21.0</version>
</dependency>
```

Design Questions

1. One issue we have to worry about is the fact that the JDBC will lock the database and the other player cannot read / write to the database while this is happening. How do you plan to overcome this issue?

2. How can we use concepts that we have worked on over the course of the semester to make the change of going from arrays and ArrayList based implementation to an app that is driven by a database easier?

3. What queries might you write to determine if a player has won across a row?

4. What queries might you write to determine if a player has won on a diagonal?

5. What would be the easiest way to reset the board for each new game?

Notes

- To run the two instances of tic-tac-toe, you should be able to do this inside of IntelliJ by just clicking run a second time while the first instance is running.

Submission

Please submit your maven project as a `.zip`, your `statement.txt`, design questions, and the database file to the dropbox prior to the date listed above. PLEASE KEEP THE STATEMENT AND DESIGN DOC OUTSIDE THE ZIP.

Blue Plate Special

If you complete your program before class on Wednesday of week 15, I will grade it in class (or immediately after depending on time). I will also wave the design doc and split the points for the doc evenly between the implementation and the style. I reserve the right though to refuse to grade any program that fails to compile and run on Wednesday at which point you will have to turn in on the regular deadline and submit the design doc.