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SWDV 691
Assignment 3
April 14, 2019

# Updated Service Layer Design

The database program used will be MongoDB. NodeJS will use the Express framework to implement a REST API for communication between NodeJS and MongoDB.

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Single Player Game page

- When the singlePlayerGame page is accessed, a GET request will be used to invoke singlePlayerGames.findOne({“username” : <string>}) which will either return null or a document.
- If null is returned then that means the user doesn’t currently have a single player game in session and a new one must be created. A game of Battleships must be randomly initialized at this point. Two grids will be generated, one for the user and one for the computer. Each grid will simply be represented by an array of 100 integers; 0 represents an empty cell, 1 represents a healthy section of a ship, 2 represents a hit section of a ship, and 3 represents a hit empty cell. A singlePlayerGame document will now be generated using the user’s username and the two grids. A POST request will be used to invoke singlePlayerGames. insertOne to insert the generated document into the collection.

Scores page

- When the Scores page is loaded, a GET request will be used to invoke accounts.find({},{“username” : 1, “wins” : 1, “losses” : 1, which will return a set of documents containing of the scores page. This data will be used to populate the page. stricted actions will be handled client side.

Ships Sunk page

- When the Ships page score is loaded, a GET request will be used to invoke a shipsSunk.track() which will returna a document containing a ship sunk page.