**Web Science**

**Quiz 1: February 27, 2024**

Enter your answers directly into this document (with the exception of #2 and #3).

All answers should be In Your Own Words, using complete sentences with proper spelling and grammar.

Save this document as either a Word docx or a PDF. For all questions other than #2 and #3, you will not receive any credit for answers not placed in this document.

When finished with the quiz, put everything you wrote (this document, all code, etc.) in your personal GitHub repo in a folder named **quiz1**. Local development only for this quiz, but everything you want graded must be on GitHub in your **quiz1** folder.

1. **Short answers** (25 points): (Answer in complete sentences unless otherwise specified, explain your answers)

1. (8) Fill out this table as to what should happen for each verb at each endpoint **according to the letter of the law.** (No need for complete sentences.)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Resource** | **POST** | **GET** | **PUT** | **DELETE** |
| **/news** | Create a new news item | Retrieve all news items | replace the list of news items | Remove all news items |
| **/news/123** | Create a new news item id 123 | Retrieve the news item id 123 | Update news item id 123 | Delete news item id 123 |

1. (7) What is a package.json file? What is it used for? How is it created?

A package.json file is an important file in Node.js and npm projects that contains metadata about the project such as the npm start command (whatever command is used to start node in the specific case) and manages its dependencies, scripts, and configurations. It specifies the libraries the project depends on(dependencies), defines custom scripts for tasks like building and testing(scripts), and includes information like the project's name and version(configurations). The file is created using the npm init command.

1. (10) Describe **in exacting detail** the sequence(s) of transaction(s) for a frontend to request data from some external entity via Node.
   1. The front end sends an HTTP request, often triggered by a user action, such as clicking a button or loading a page.
   2. This request is handled by a Node.js server using routes defined in the backend code, which then uses an HTTP client library (like Axios or the native http module) to make an outbound request to the external entity's API.
   3. The external entity processes the request and responds to the Node.js server.
   4. The Node.js server receives the response, may process or format it as needed, and then sends it back to the front end.
   5. The front end receives the data and updates the UI accordingly, showing the new information to the user.
2. **Coding question**: (60 points)  Here is a free API that does not require any API keys: <https://www.boredapi.com/> – the documentation for which can be found here: <https://www.boredapi.com/documentation>Create a new GET endpoint in Node/Express that accepts the type of activity (and optionally additional information in a query string–check the documentation!) from your frontend and returns the API’s information about that activity back to the frontend. If the user fails to input a valid activity, return the /api/activity endpoint (which returns a random activity).  
     
   Creativity matters; try your best to integrate this new information into your frontend. Try as hard as you can to make it feel like it is a meaningful, conscious, intentioned feature of your app. How you do that is up to you. Don’t make it look like some random afterthought. Go beyond the minimum (but remember that creativity doesn’t have to be visual). If you need to, write a short README.md file that tells me what I should consider for creativity. (creativity: 20 points of the 60 available for this question)  
     
   ***You may use any and all open-source libraries you want for this coding question, so long as you cite them in a README.md file.***

20 points for frontend (could be React, doesn’t need to be React)

20 points for backend (extending your API to include this new info, serving it to your frontend)

20 points for creativity

1. (15) Ensure the package.json file for Q2 has no errors when I run npm install.
2. **Extra credit (+5)**: Before moving into its current building, which building on campus was the home of the Rensselaer Student Union?

The Student Union used to be located in the ’87 Gym