

Matthew Xu
B5 DATA236
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ReadMe: B5

About This Project

This project implements a web server using Node.js and the Express framework to manage and serve student data for various classes organized by semester and year. The server's architecture is designed to access class information, providing users to retrieve and search for student details based on class ID, semester/year, or individual student information.

The server directory structure consists of class ID folders (e.g., DATA236), each containing files corresponding to different semesters/years (e.g., Winter2024.txt). Each file contains records for students enrolled in that class, including their names, student IDs, and email addresses.

Directory Hierarchy

```
project-directory/  
├── data/  
│   ├── DATA228/  
│   │   ├── Winter2024.txt  
│   │   └── Spring2025.txt  
│   └── DATA236/  
│       └── Spring2025.txt  
├── server.js  
├── package-lock.json  
└── package.json
```

Within the data directory contains each classID folders such as DATA228 and DATA236. Within each classID folder are the .txt files (e.g., Winter2024.txt) for each different semester. These files contain a student per row in the format: lastName, FirstName ID email. The server.js file contains all the functions for all the different features such as get the classID and Semesters and Searching function. Package.json file contains the list of dependencies and scripts. The package.lock.json specifies their respective versions to ensure consistent installations in different environments.

Technologies

- JavaScript
- NodeJS
- Express

Getting Started

Prerequisites

Before you begin, ensure you have the following installed on your system:

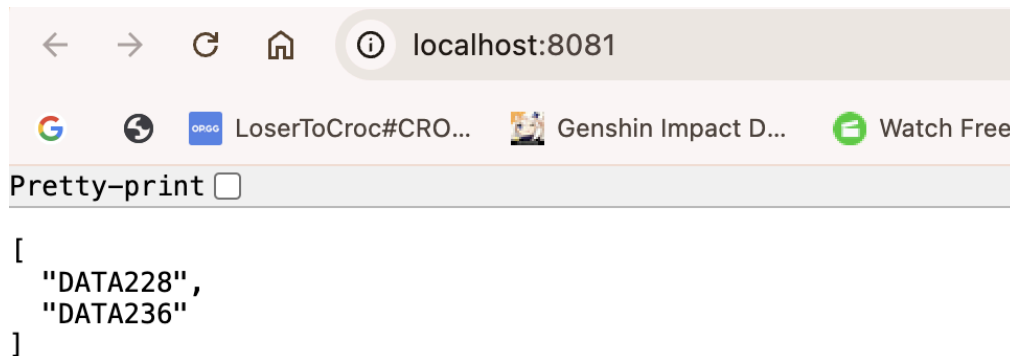
- A modern web browser (e.g., Chrome, Firefox, Safari).
- A text editor (e.g., Visual Studio Code) to modify the code if needed.
- Installation of NodeJS and Express

Running the Project

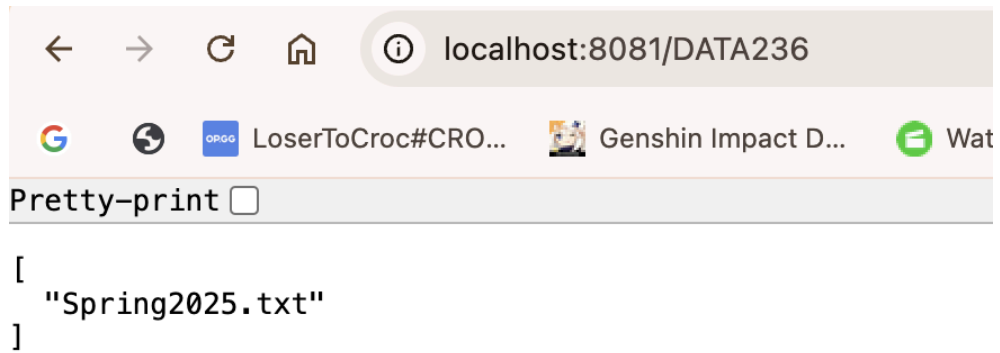
1. Instantiate the NodeJs Web Server by running **node server.js** in the terminal
2. Make sure that all the downloaded files from the directory hierarchy are in the current server directory.
3. Open up the webpage on the local host web server by entering **localhost:8081** into the URL of the web browser. The outputs will

Features

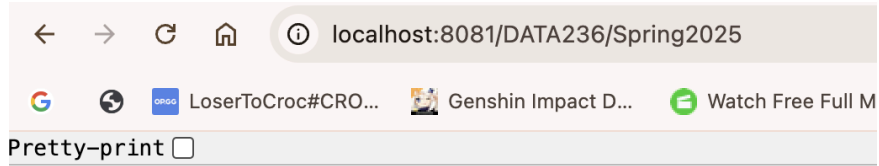
1. **Listing Class IDs:** Users can access the root URL (e.g., <http://localhost:8081>) to retrieve a list of all available class IDs.



2. **Listing Semester/Year Files:** By navigating to a specific class ID (e.g., <http://localhost:8081/DATA236>), users can view all associated semester/year file names.



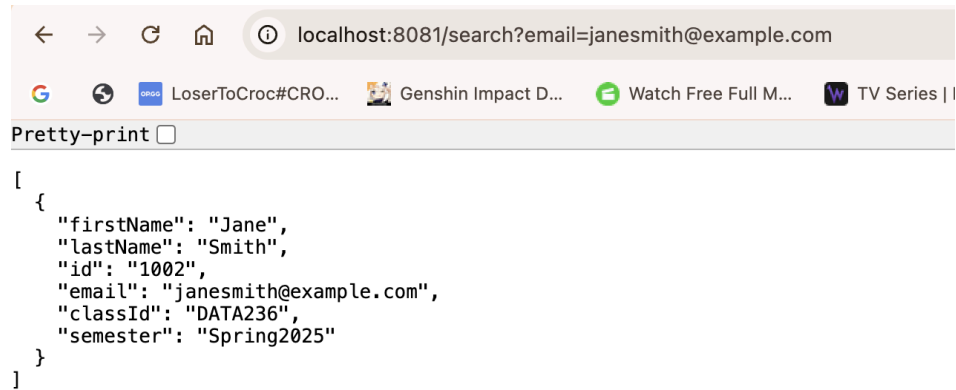
3. **Retrieving Student Information:** Accessing a semester/year file (e.g., <http://localhost:8081/DATA236/Spring2025>) allows users to list all students enrolled in that course for the specified term.



```
[
  {
    "firstName": "John",
    "lastName": "Doe",
    "id": "1001",
    "email": "johndoe@example.com"
  },
  {
    "firstName": "Jane",
    "lastName": "Smith",
    "id": "1002",
    "email": "janesmith@example.com"
  },
  {
    "firstName": "Michael",
    "lastName": "Brown",
    "id": "1003",
    "email": "michaelbrown@example.com"
  },
  {
    "firstName": "Emily",
    "lastName": "Davis",
    "id": "1004",
    "email": "emilydavis@example.com"
  },
  {
    "firstName": "Chris",
    "lastName": "Johnson",
    "id": "1005",
    "email": "chrisjohnson@example.com"
  },
  {
    "firstName": "Sarah",
    "lastName": "Lee",
    "id": "1006",
    "email": "sarahlee@example.com"
  },
]
```

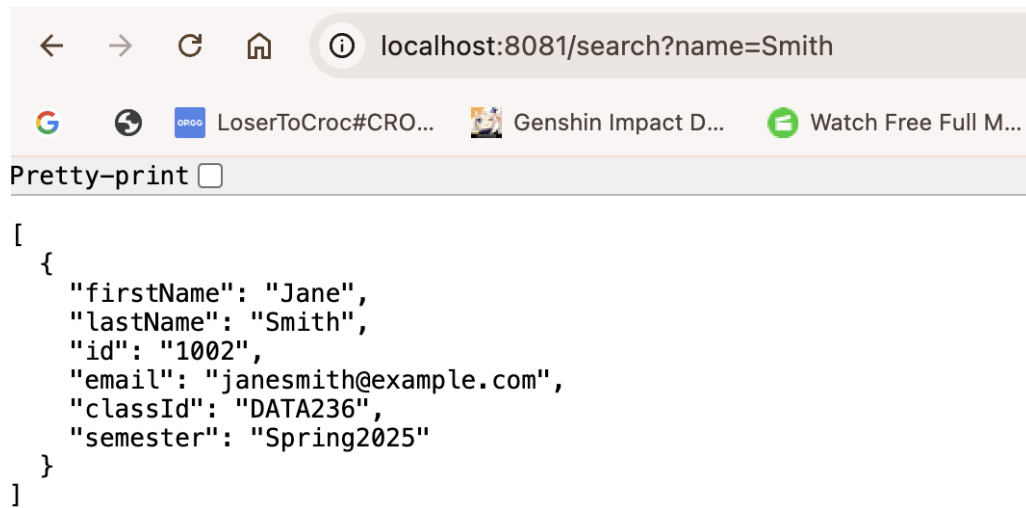
4. **Searching for Student Information:** Users can search for a student by ID, name, or email address through a query parameter (e.g., <http://localhost:8081/search?id=12345>).

Email



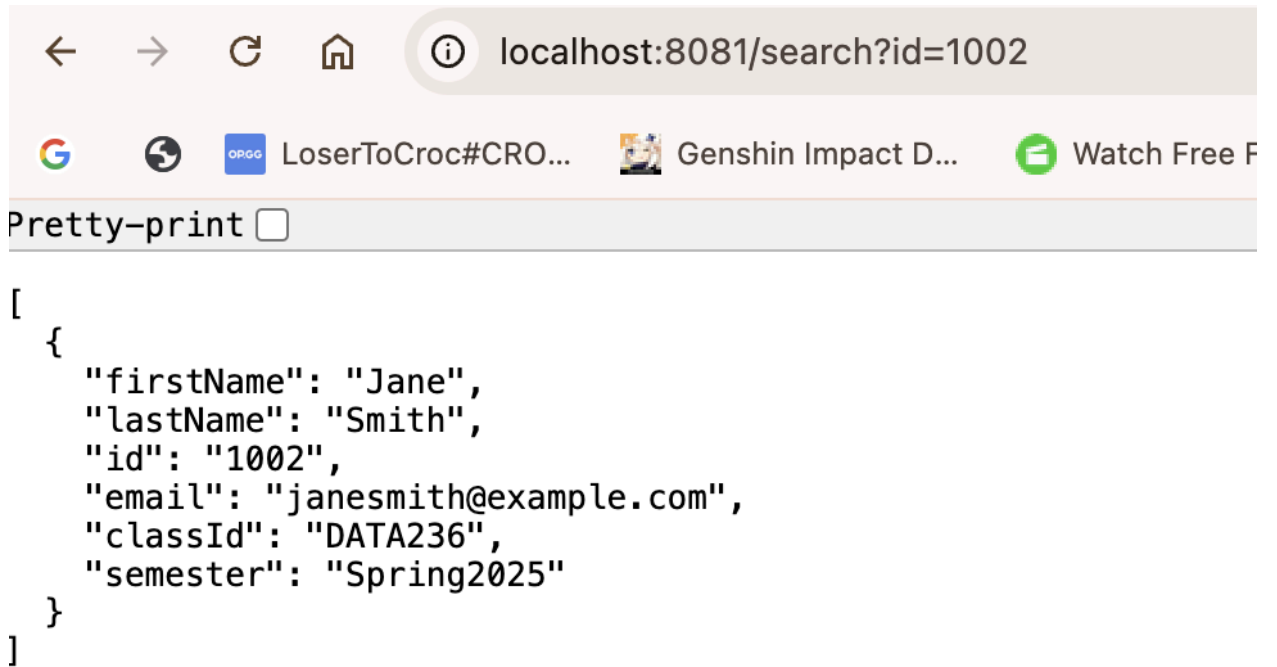
```
[
  {
    "firstName": "Jane",
    "lastName": "Smith",
    "id": "1002",
    "email": "janesmith@example.com",
    "classId": "DATA236",
    "semester": "Spring2025"
  }
]
```

Name

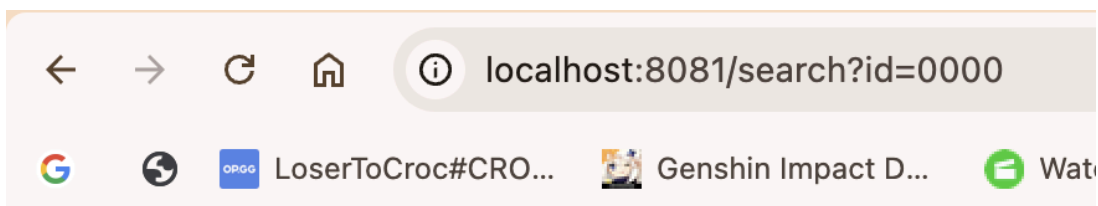


```
[
  {
    "firstName": "Jane",
    "lastName": "Smith",
    "id": "1002",
    "email": "janesmith@example.com",
    "classId": "DATA236",
    "semester": "Spring2025"
  }
]
```

ID



Not Found



Not found