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BSI/T-3E

Individual Performance Test #1

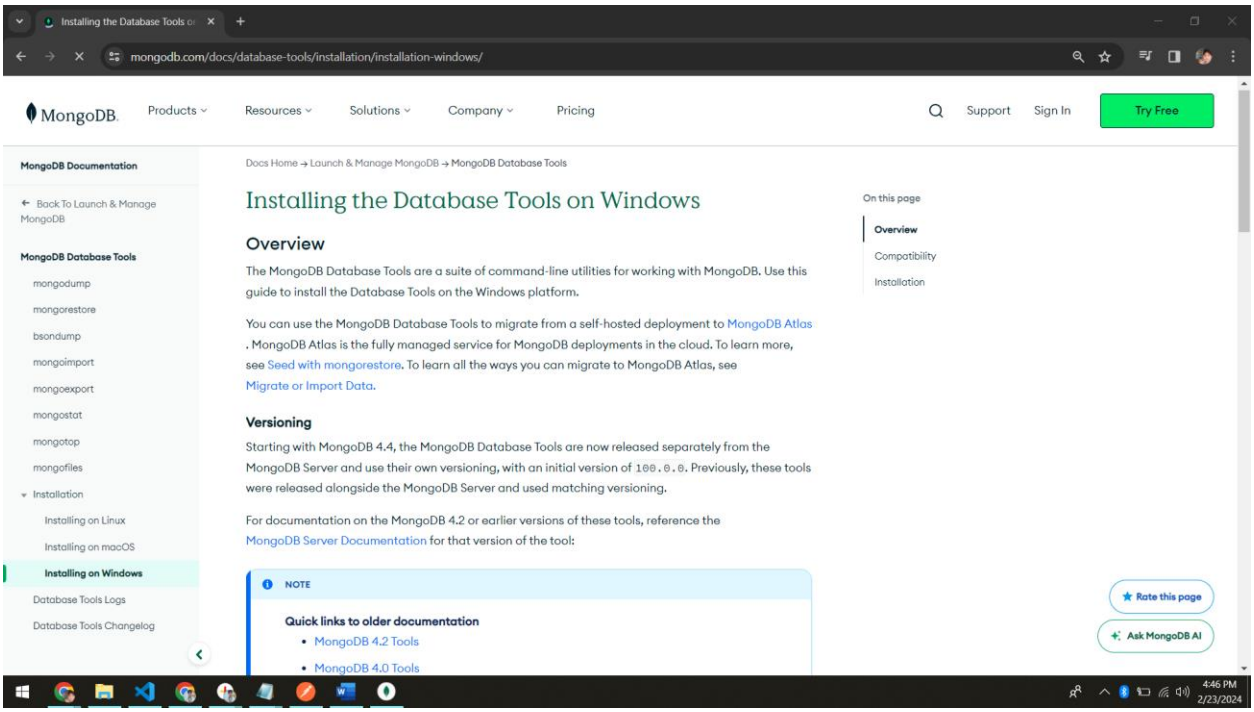
Backend Course Data API Test Documentation

Test Procedure

Step 1: Setting Up the Environment

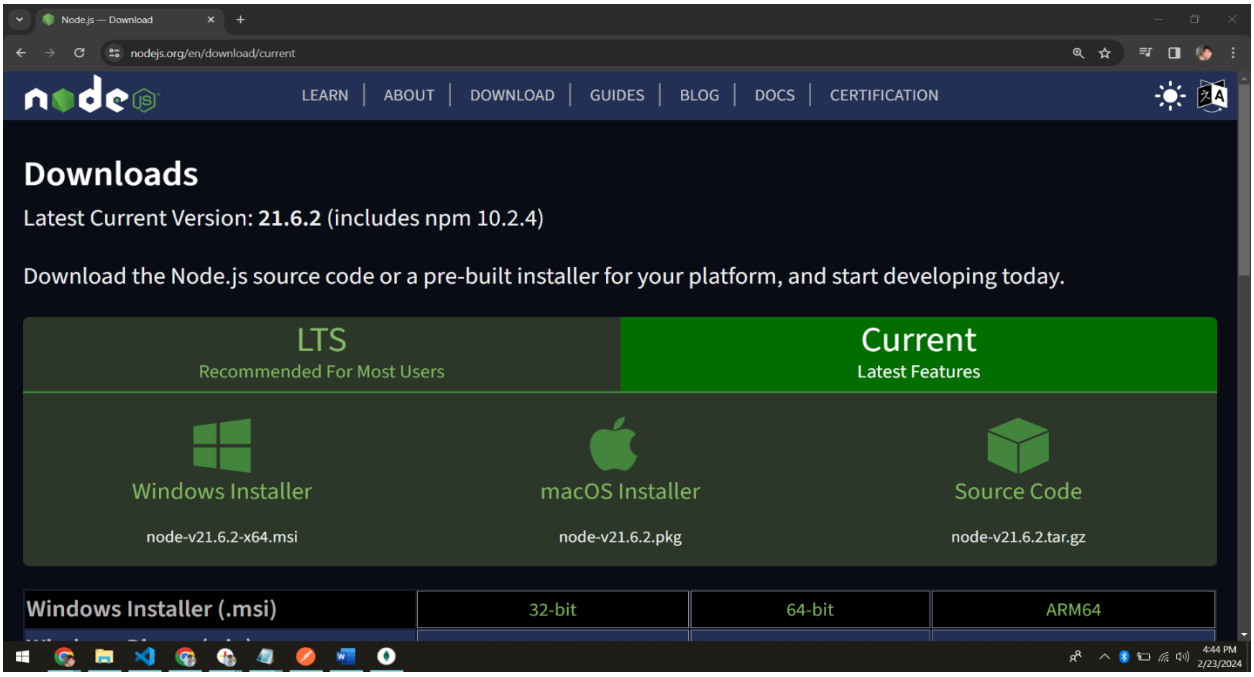
1. Install MongoDB Database Tool:

- Downloaded and installed the MongoDB Database Tool from [this link](https://fastdl.mongodb.org/tools/db/mongodb-database-tools-windows-x86_64-100.9.4.zip).



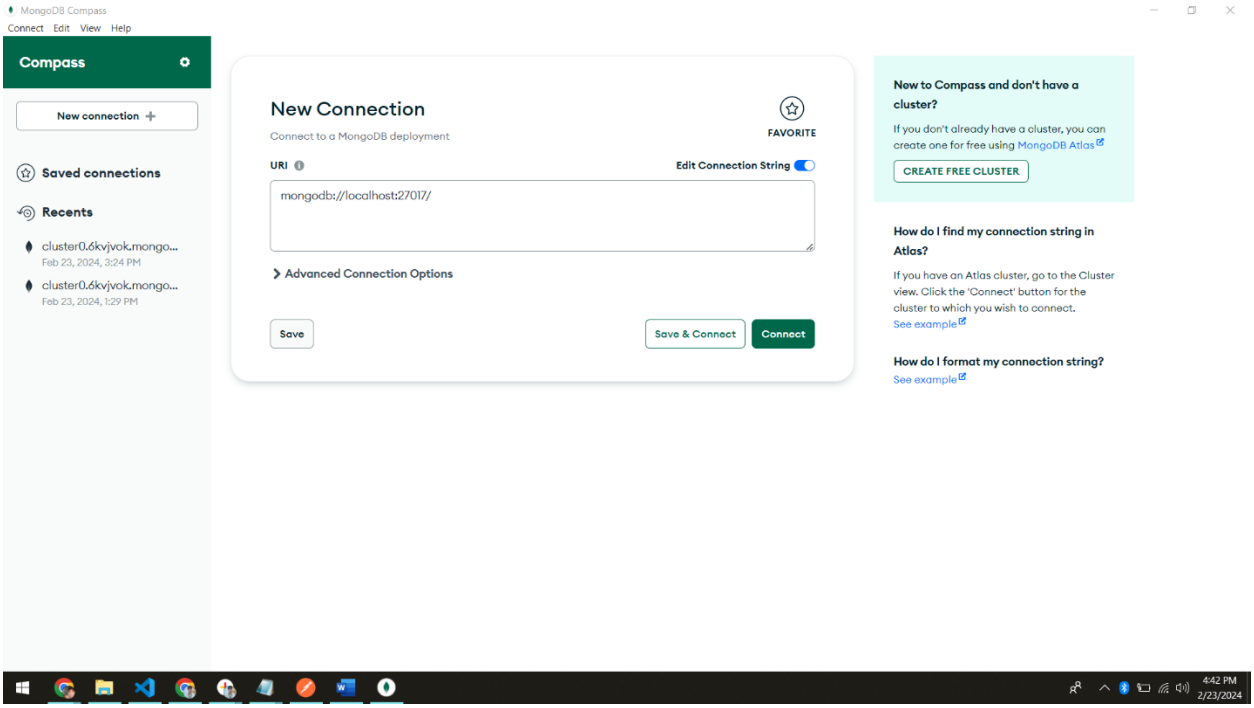
2. Installed Node.js:

- Ensured Node.js is installed on the local machine by downloading it from https://nodejs.org/.



3. MongoDB Server:

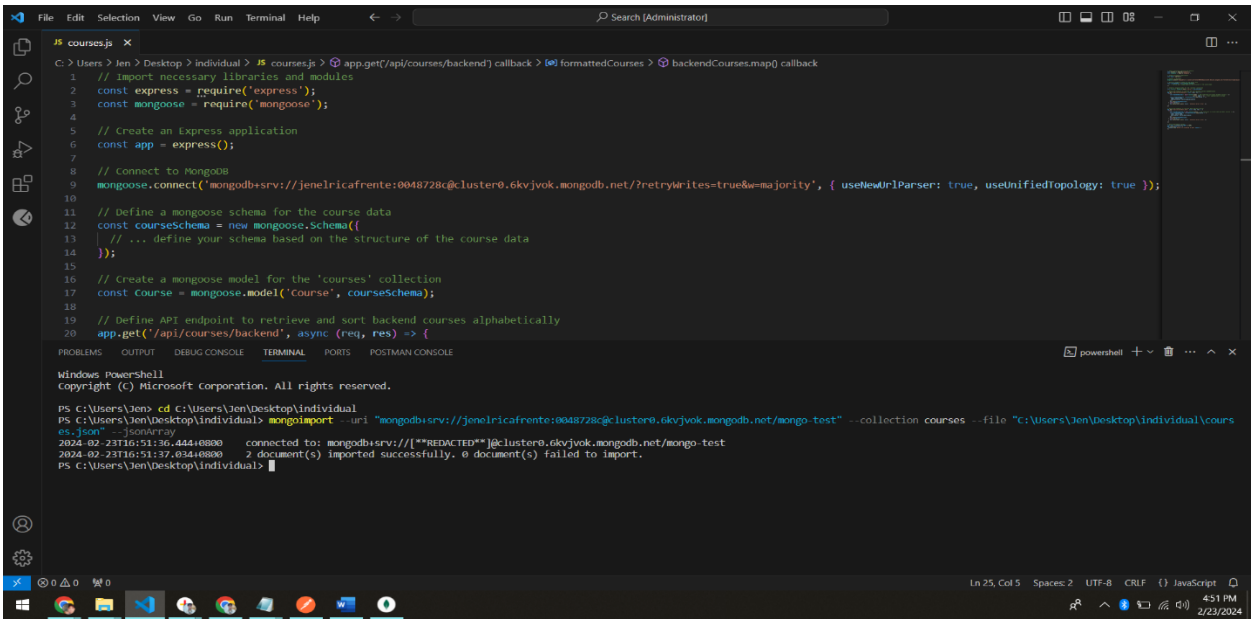
- Confirmed that the MongoDB server is installed and running locally.



Step 2: Import Course Data

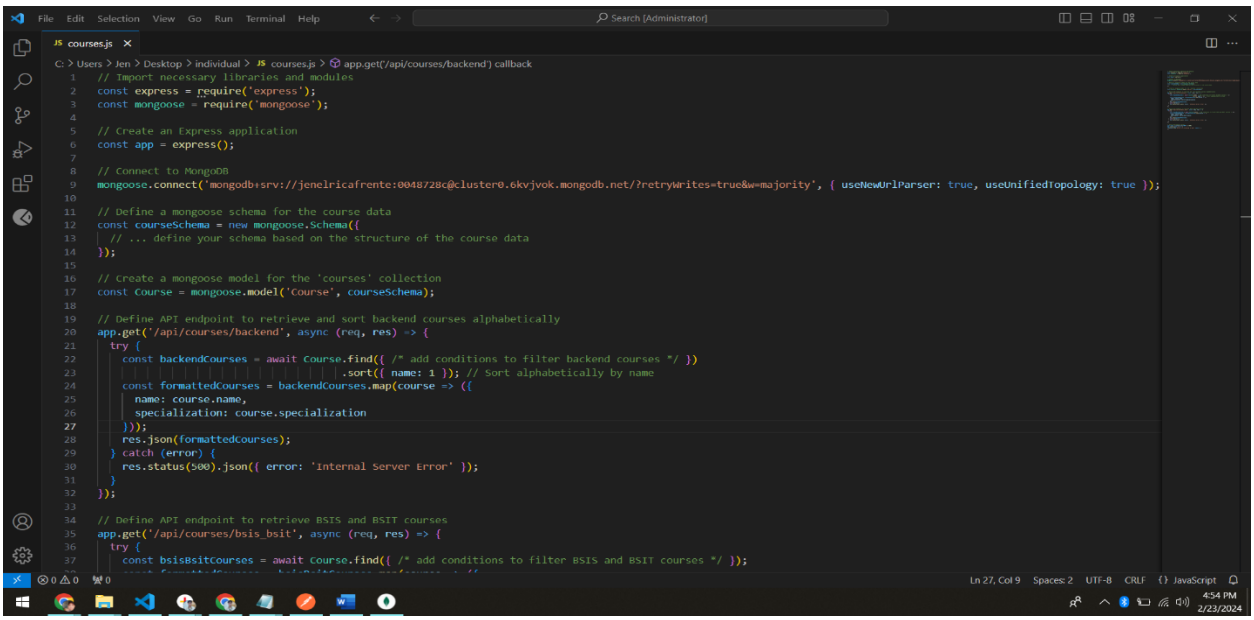
- Used the `mongoimport` command to import the provided course data into MongoDB:

  mongoimport --db mongo-test --collection courses --file courses.json --jsonArray



Step 3: Backend API Implementation

- Created a Node.js application using Express to implement backend API endpoints.



Step 4: API Endpoint Testing

1. Retrieve and Sort Backend Courses:

   - Sent a GET request to `/api/courses/backend`.

   - Verified that the response contains an alphabetically sorted list of published backend courses.

2. Retrieve BSIS and BSIT Courses:

   - Sent a GET request to `/api/courses/bsis_bsit`.

   - Verified that the response contains a list of published BSIS and BSIT courses.

Step 5: Data Validation

- Ensured data validation at each step:

  - Validated the structure of the course data during import.

  - Implemented Mongoose schema validation to ensure correctness.

Step 6: Documentation

- Documented the entire test procedure in this document.

Challenges Faced and Solutions Implemented

1. Challenge: MongoDB Connection Issues

   - Encountered issues connecting to the MongoDB server.

   Solution:

   - Verified the MongoDB server status and ensured the correct connection string in the application code.

2. Challenge: Incorrect Data Format in Imported JSON

   - The provided JSON file format was not directly compatible with the Mongoose schema.

Solution:

- Modified the Mongoose schema to match the structure of the imported JSON data.

3. Challenge: Data Not Sorting Correctly

- Initial implementation did not sort backend courses alphabetically.

Solution:

- Modified the MongoDB query to include sorting by the course name.

4. Challenge: Error Handling

- Implemented proper error handling to return meaningful responses in case of failures.