

# UGANDA TECHNOLOGY AND MANAGEMENT UNIVERSITY

## WEEKLY JOURNAL REPORT

MUHWEZI ASAPH

SEP23/BSC/3567U/F

### BACHELOR OF SCIENCE COMPUTER SCIENCE

WEEK 5: 28<sup>th</sup>/July/2025 – 03<sup>rd</sup> /August/2025

#### 1. What have been your successes/accomplishments?

I successfully set up a backend server using Node.js and Express, connected it to a MongoDB database, and implemented CRUD operations for a bookstore API. This was a major step as it marked my first fully functional backend project.

#### 2. What have been the challenges/fears?

Some challenges included debugging database connection issues and handling environment variables securely. I also had a fear being my first time to do so of whether i would complete the backend integration on time, but through hard work, practice and research, I overcame it.

#### 3. What is the relationship between your internship and your previous job training?

The internship built directly on my previous training. For example, i had learned HTML, CSS, and JavaScript basics in class, and now i applied them practically in a real backend environment with Node.js and MongoDB.

#### 4. What is the difference between what you observed in the field and what you learned in class?

In class, the focus was mainly on theory and simple projects. In the internship, i experienced real-world challenges such as version control using GitHub, deploying code, error handling, and managing dependencies.

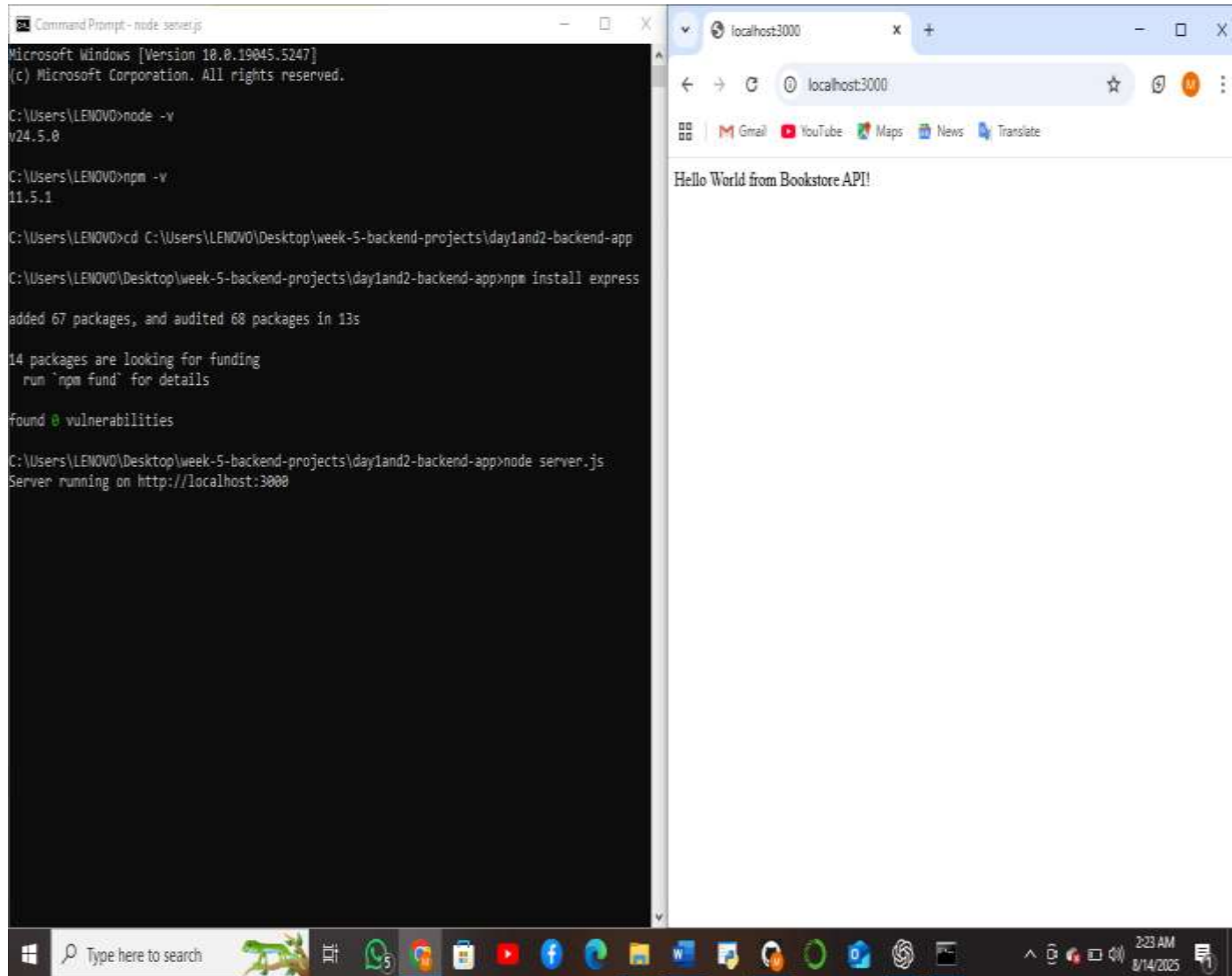
#### 5. What experience have you gained so far from being part of the organization/community?

I have gained hands-on experience in collaborative development, working with GitHub for project hosting, and building scalable backend APIs. I also learned the importance of testing and writing clean code for teamwork.

#### 6. List activities done for the week:

- Setup of Node.js and Express backend

- Connection of MongoDB database
- Implementation of CRUD operations
- Testing API endpoints with Postman
- Writing documentation for the project repository
- Documentation of weekly report and reflection



*Figure 1 shows screenshot of day 1&2 work of running backend app on local host*

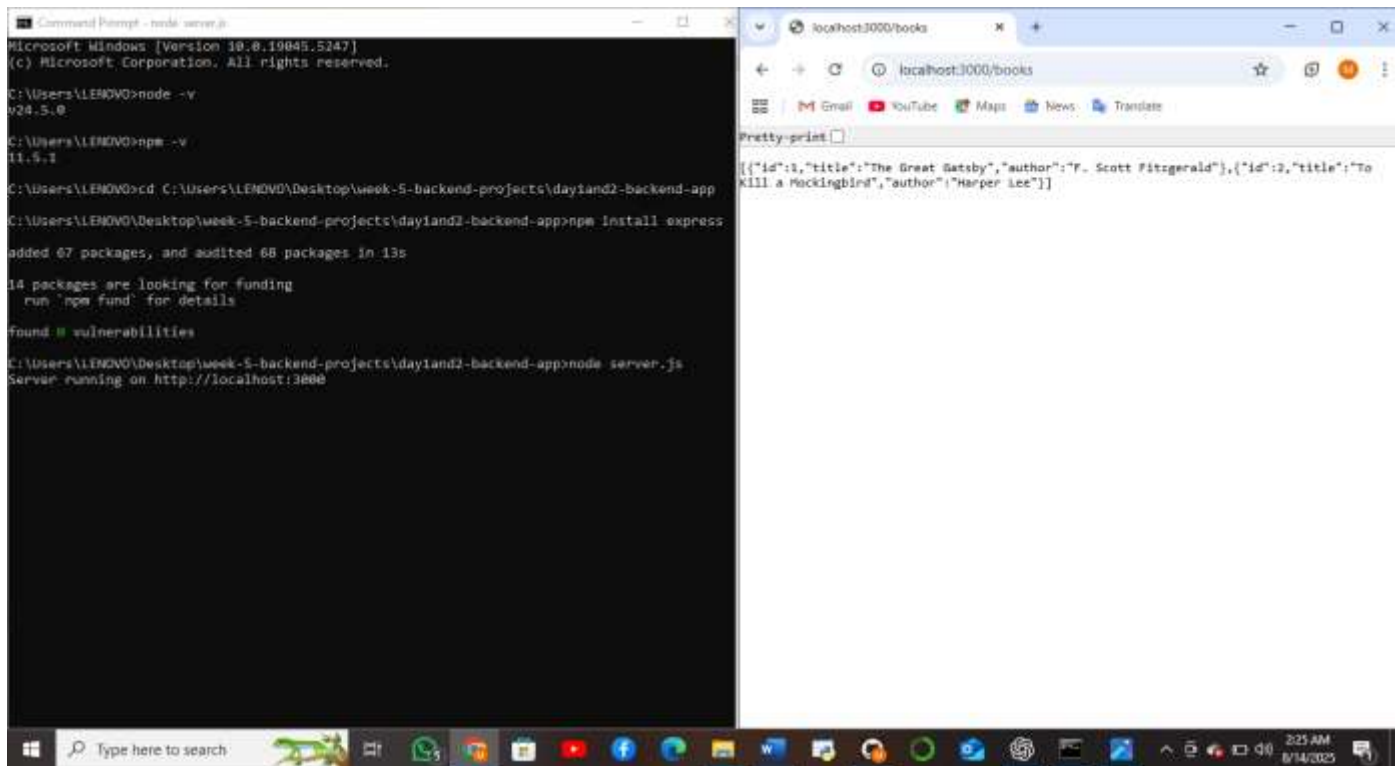


Figure 2 shows screenshot of day 1&2 work of running backend app books on local host

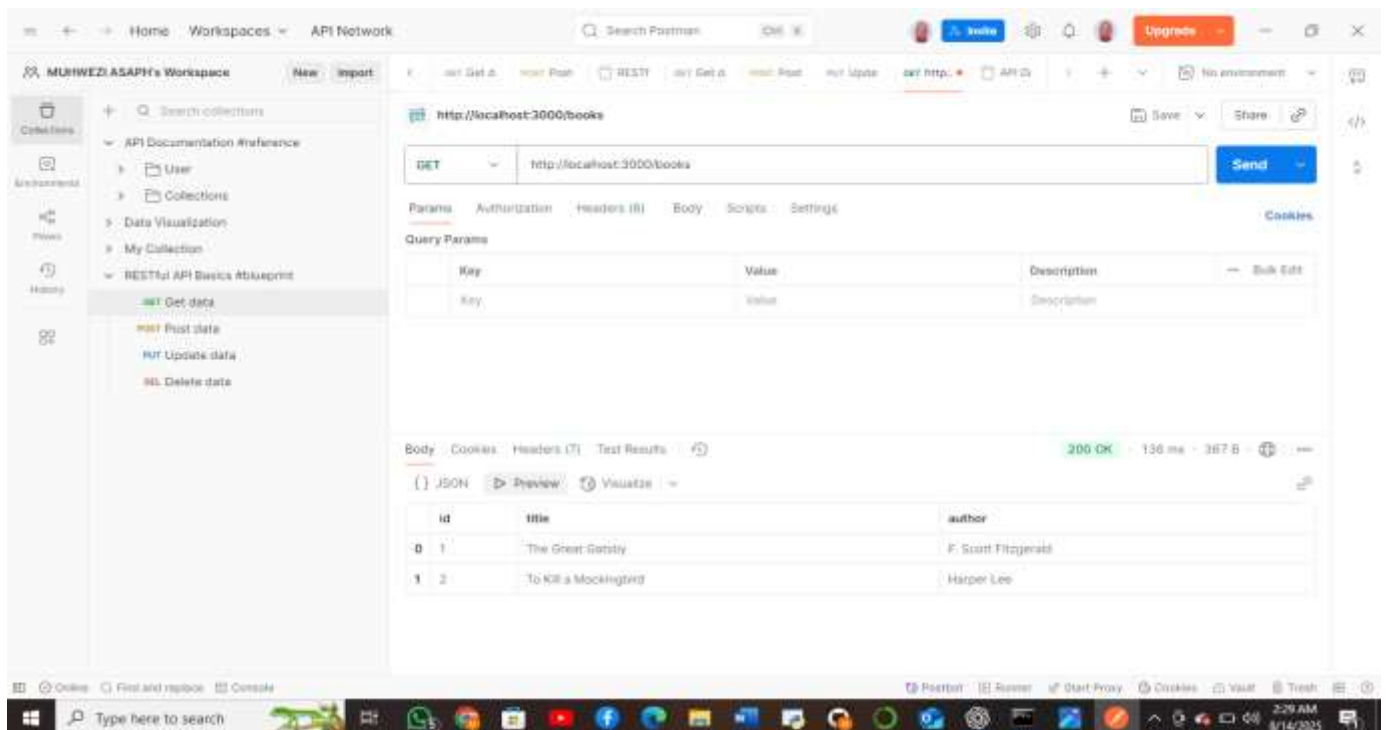


Figure 3 shows screenshot of day 1&2 work API testing on postman

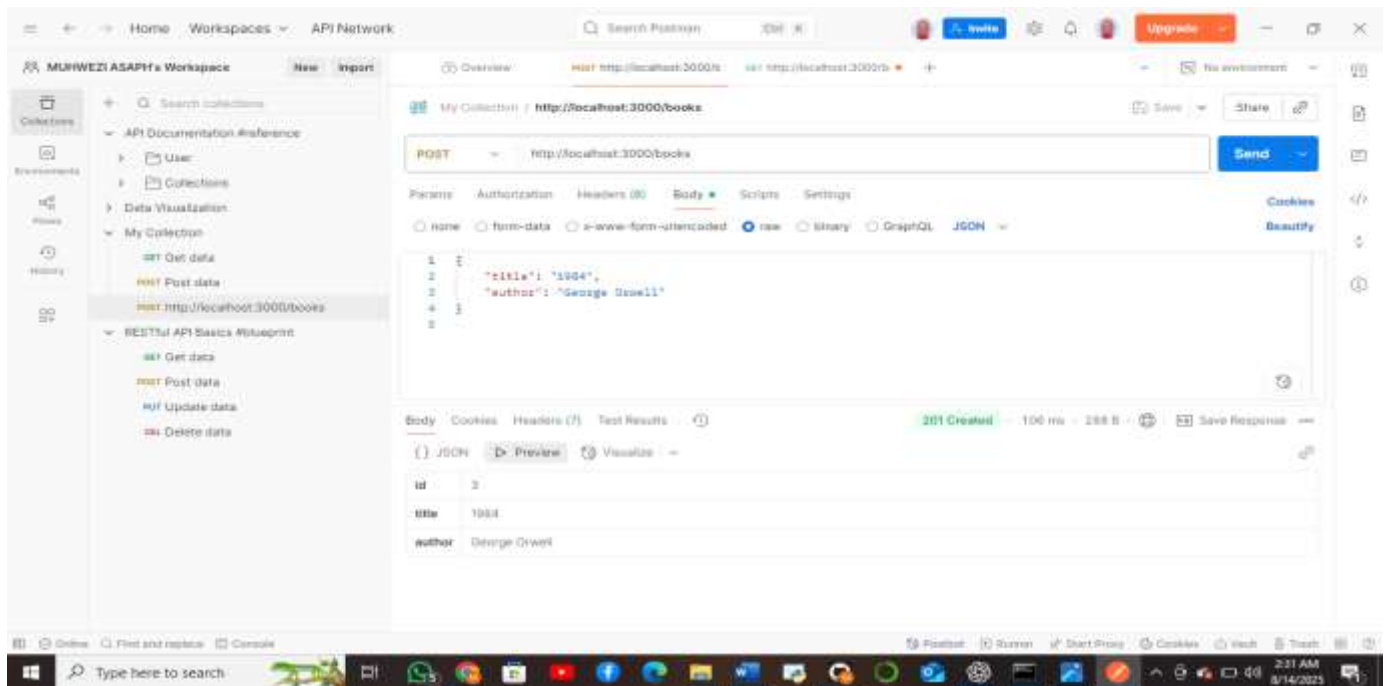


Figure 4 shows screenshot of day 1&2 work API testing on postman

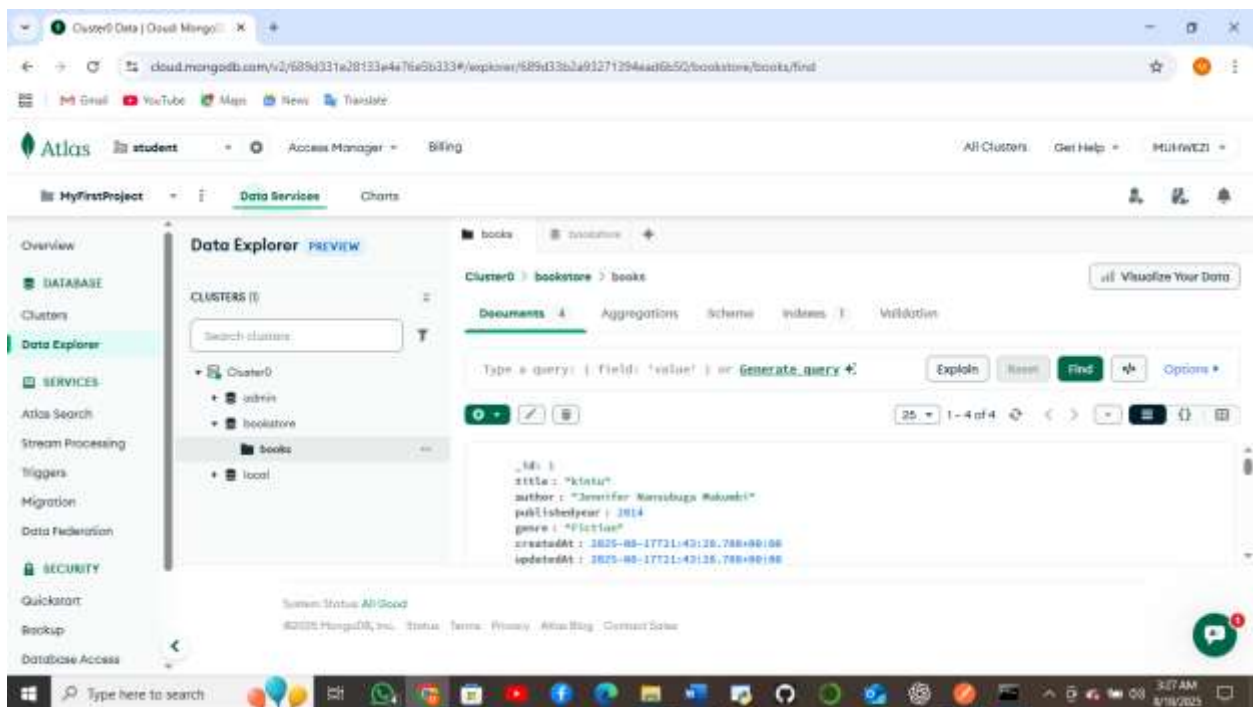


Figure 5 shows screenshot of week final project work using MongoDB atlas

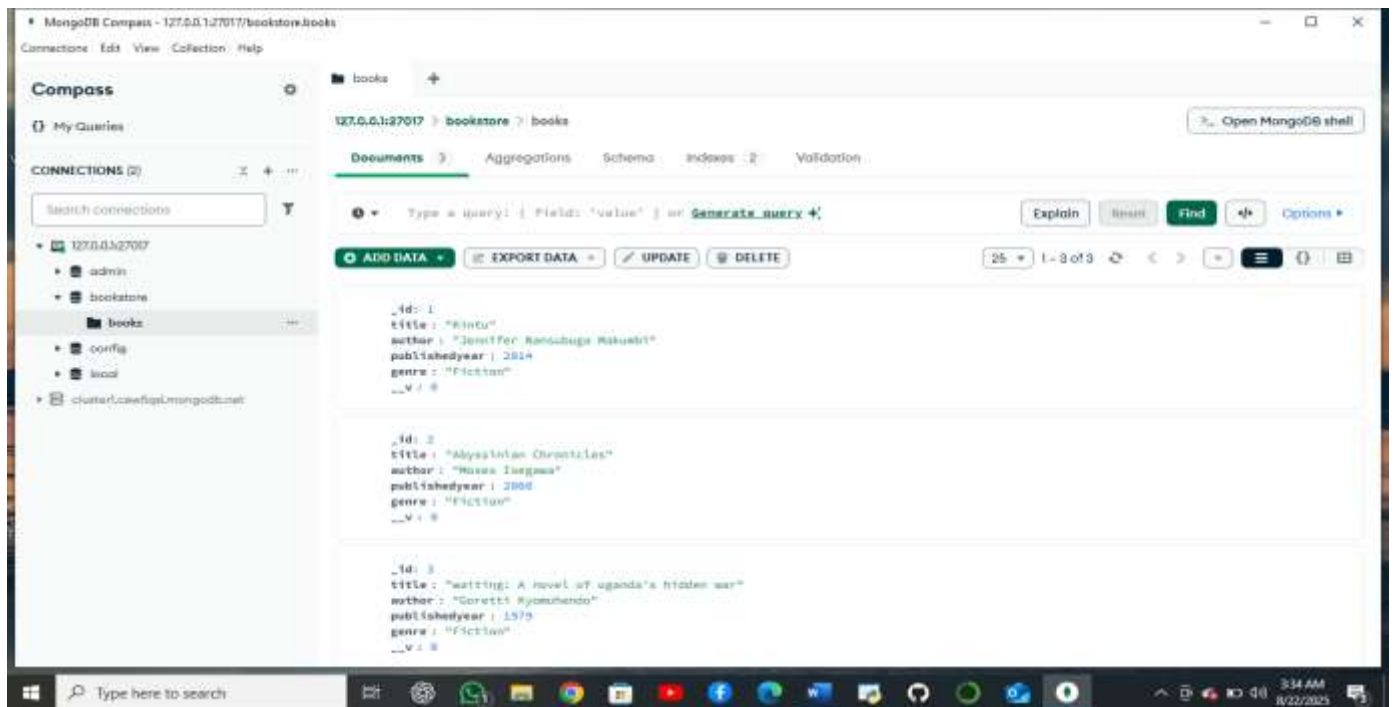


Figure 6 shows screenshot of week final project work using locally hosted MongoDB compass

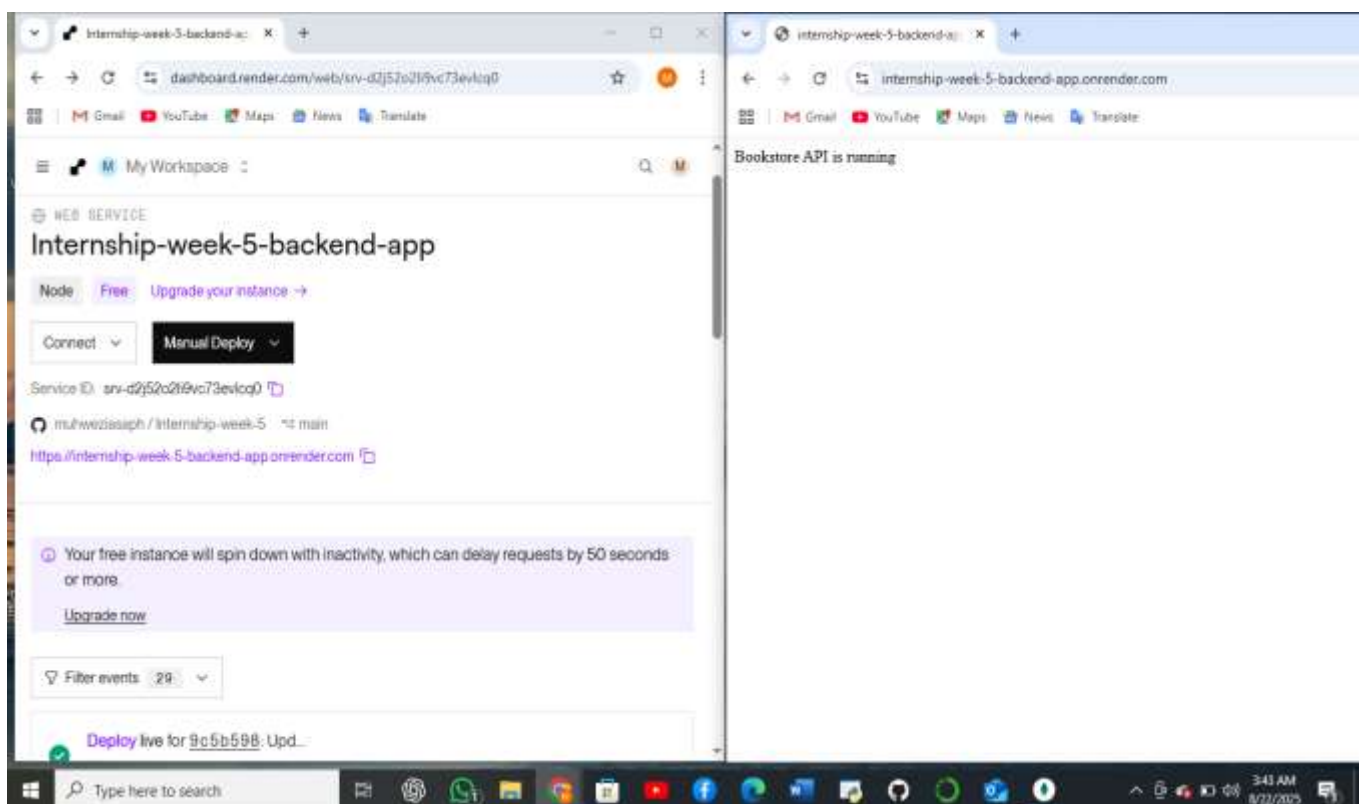


Figure 7 shows screenshot of week final project deployed work running

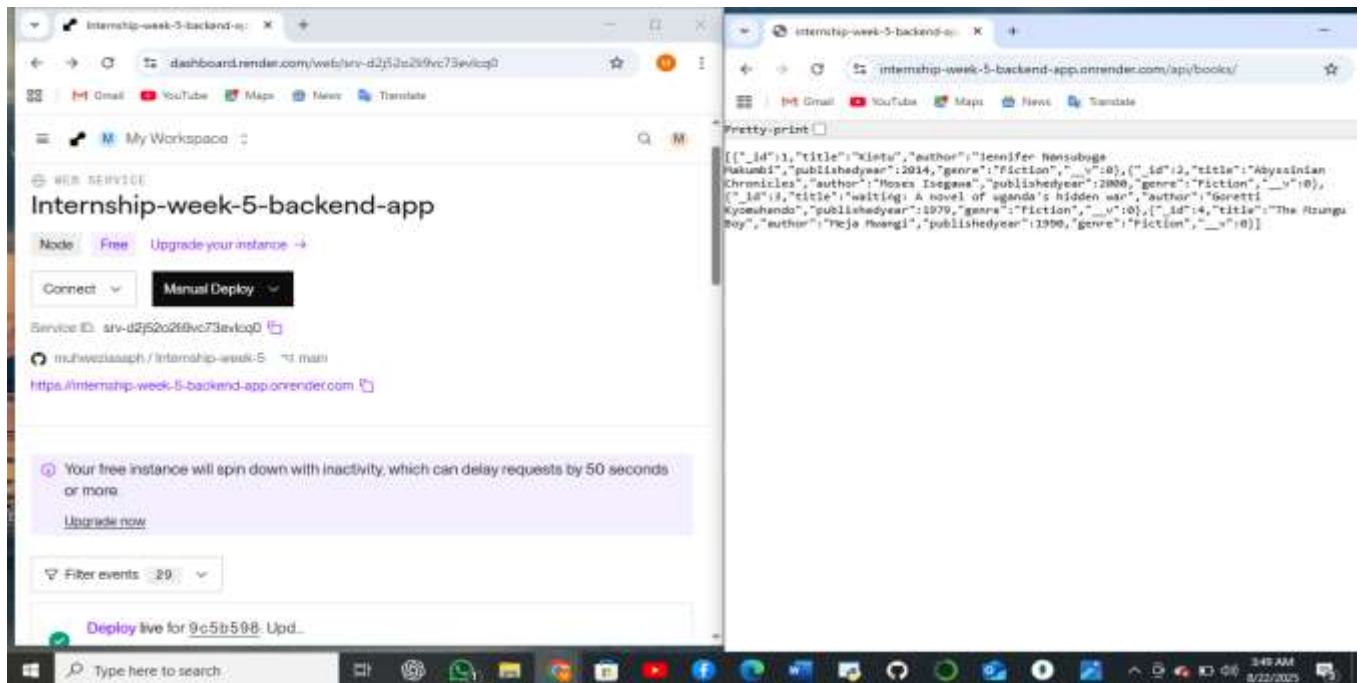


Figure 8 shows screenshot of week final project deployed work seeded books on browser

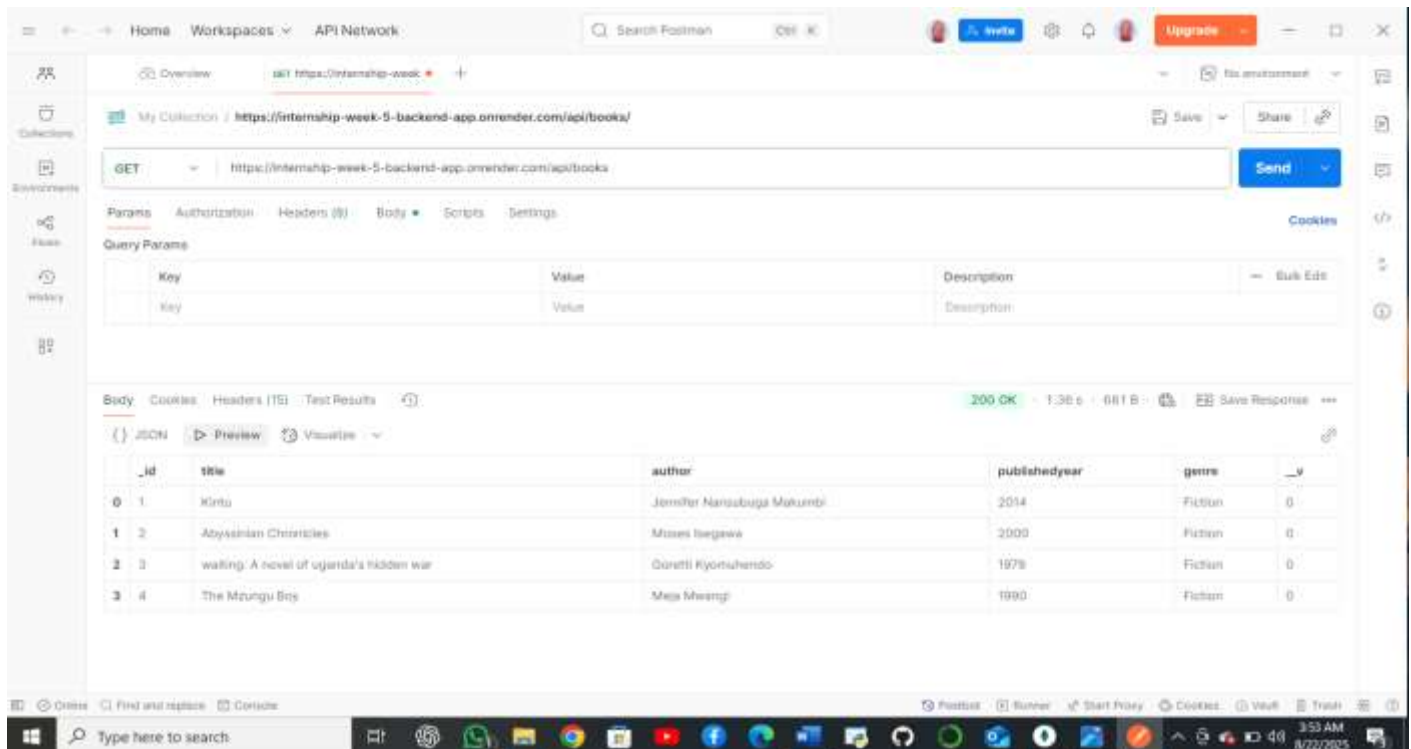


Figure 9 shows screenshot of week final project deployed API testing on postman



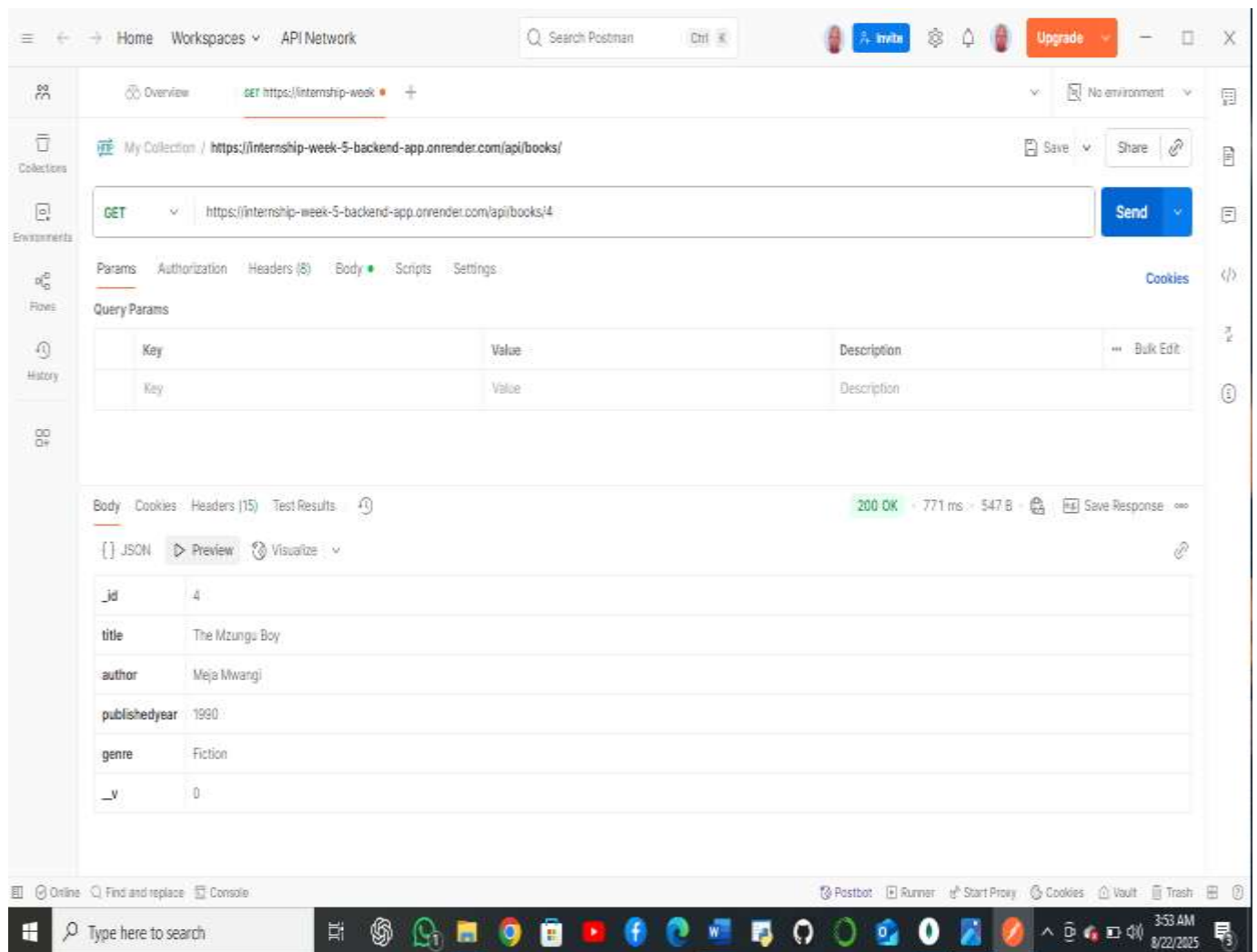


Figure 10 shows screenshot of week final project deployed API testing on postman

## DAILY RECORD OF PROGRESS

Week 5 internship at Zentrix Africa Technologies institute

Internship Duration: 30 June 2025 – 18th August 2025

Week covered: Week 5 (28<sup>th</sup> July – 02 August 2025)

Location: National ICT Innovation Hub, Nakawa (Physical) and Online

### DAY BY DAY DETAILED BREAKDOWN

Day 1 – Monday, 28<sup>th</sup> July 2025 (Physical)

#### Activities:

- Introduction to backend development concepts.
- Setting up a basic Node.js project with Express.

#### Lessons Learned:

- Understanding server-side programming.
- How to initialize a Node.js project with npm init.
- Setting up routes and middleware in Express.

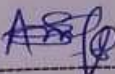
#### Challenges:

- Initial difficulty in understanding how backend differs from frontend.
- Errors during npm installation on some machines.

#### Recommendations:

- Ensure Node.js and npm versions are compatible.
- Revise basic JavaScript before diving into backend.

I declare that all the information provided is true

  
Signed by trainee

28/07/2025  
Date

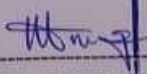
  
Signed by field supervisor



Figure 11 shows screenshot of record of progress day 1



Day 2 Tuesday, 29th July 2025 (online)

Activities:

- Creating RESTful API endpoints.
- Learning HTTP methods: GET, POST, PUT, DELETE.

Lessons Learned:

- Difference between REST and other API architectures.
- How HTTP methods map to CRUD operations.


Challenges:

- Confusion in handling request and response objects.
- Typos in route definitions causing errors.

Recommendations:

- Practice writing simple routes repeatedly.
- Use Postman to test each endpoint after creation.

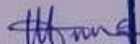
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Signed by trainee

29/07/2025

Date

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Signed by field supervisor



Figure 12 shows screenshot of record of progress day 2

Day 3 Wednesday, 30<sup>th</sup> July 2025 (physical)

**Activities:**

- Introduction to MongoDB.
- Installing and connecting MongoDB with Node.js using Mongoose.

**Lessons Learned:**

- Understanding NoSQL databases.
- How Mongoose simplifies database interactions.

**Challenges:**

- Difficulty in installing MongoDB locally.
- Errors in connection strings.

**Recommendations:**

- Use MongoDB Atlas if local installation fails.
- Double-check database URIs.

I declare that all the information provided is true

  
Signed by trainee

30/07/2025  
Date

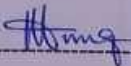
  
Signed by field supervisor



Figure 13 shows screenshot of record of progress day 3

Day 4 – Thursday, 31<sup>st</sup> July 2025 (online)

Activities:

- Creating MongoDB models and schemas.
- Implementing CRUD operations with MongoDB.

Lessons Learned:

- Importance of schema design in NoSQL databases.
- How to handle async operations with async/await.

Challenges:

- Schema validation errors.
- Async/await syntax mistakes.

Recommendations:

- Validate data before saving to DB.
- Revise JavaScript async concepts.

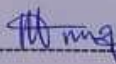
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Signed by trainee

31/07/2025

Date



Signed by field supervisor



Figure 14 shows screenshot of record of progress day 4

Day 5 – Friday, 1<sup>st</sup> /July 2025 (physical) and day 6 - Saturday, 02<sup>nd</sup> /Aug 2025(online)

Activities:

- Finalizing CRUD API.
- Pushing project to GitHub and documenting endpoints.
- Preparing deployment.

Lessons Learned:

- How to write clear API documentation.
- Importance of version control in backend projects.

Challenges:

- Git merge conflicts when pushing updates.
- Forgetting to document changes.

Recommendations:

- Commit changes frequently.
- Update README file with endpoint details.

I declare that all the information provided is true

Student Signature: 

02/08/2025

Date

Field supervisor name: TURKONYWA BENJAMIN

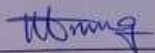
Field supervisor signature: 



Figure 15 shows screenshot of record of progress day 5 and 6

Student Signature: AS

Field supervisor name: TURKIONWA Benjamin

Field supervisor signature: W

0791650674★

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*Figure 16 shows screenshot of final page of weekly report with the signature and name of the field supervisor*

**Below is the link to the repository of internship week 5**

**<https://github.com/muhweziasaph/Internship-week-5.git>**