Job Simulation: Book Explorer Application

Project Title: *Implementation of a Book Explorer*
Role: *Front-End Developer Intern – Dynamic Search & API Rendering*
Technology Stack: React, Material UI, useState, useEffect, useRef, Fetch API

Objective:

To design and implement a **dynamic book search application** that allows users to search, view, and load books using data from the Open Library API. The project highlights **real-world API integration**, **debounced search**, and **infinite scroll** to enhance user experience.

Features Implemented:

1. Live Search Functionality

- Users can search for books using keywords.
- Uses a <TextField> (Material UI) for a seamless UI.
- Debounced input using useRef and setTimeout prevents unnecessary API calls.

2. Book Grid Display

- Books are displayed in a card-based layout using Material UI's <Grid> and <Card> components.
- Each book card displays the **title**, **author**, and **cover image** (if available).

3. Infinite Scroll with Pagination

- More books are fetched as the user scrolls down.
- Scroll detection is implemented using window.onscroll and IntersectionObserver.

4. Loading Indicators

- Circular loaders (<CircularProgress>) show up while books are being fetched.

Project Structure:

App.jsx

- Handles main layout, search term state, book data state, fetch logic, and infinite scroll.
- Uses useEffect for API fetching and useRef for debounce control.
- Appends new results to the existing list on scroll (pagination).

BookCard.jsx

- Reusable component to render individual book data.
- Accepts props like title, author, and cover_id.

api.js

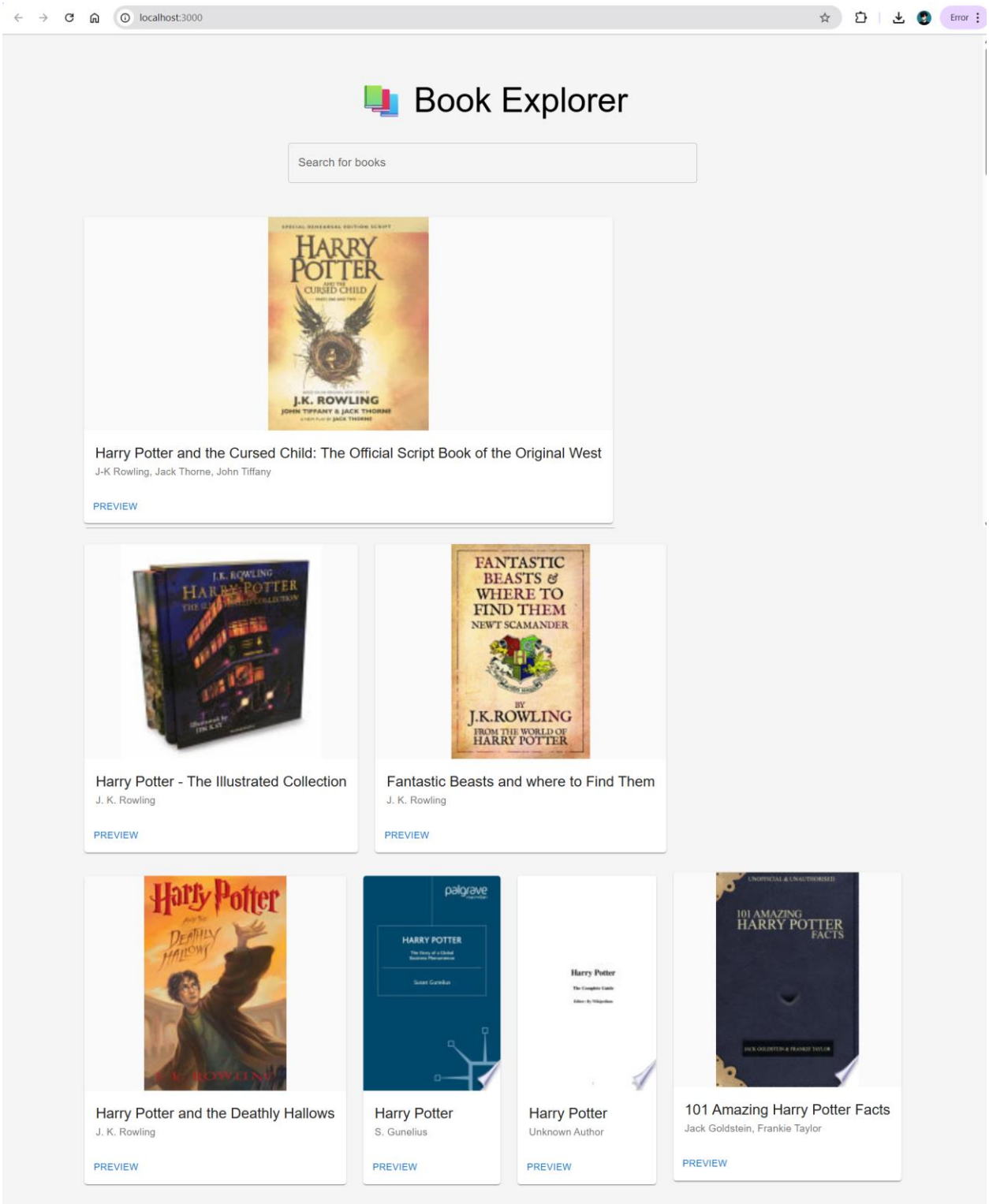
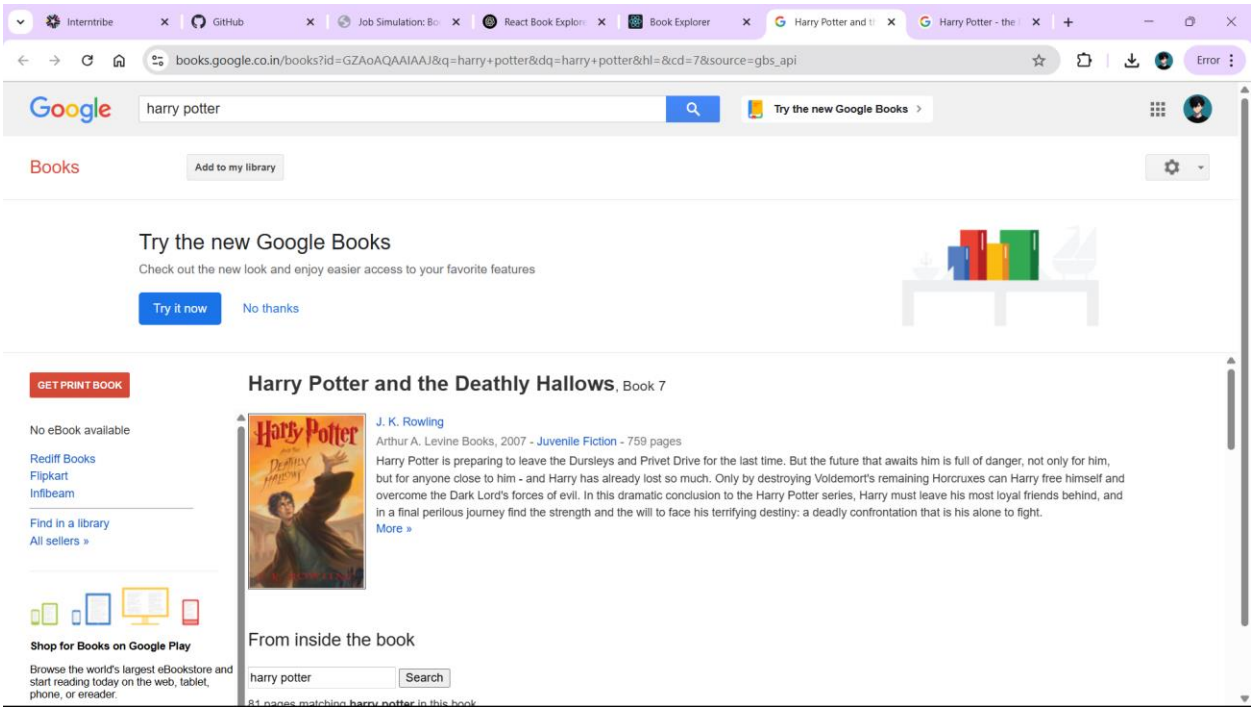
- Contains the fetch logic for retrieving book data using fetch().

Learning Outcomes:

By completing this Book Explorer app, I gained:

- Experience integrating third-party APIs (Open Library).
- Knowledge of **React hooks** (useState, useEffect, useRef).
- Understanding of **debounce patterns** and performance optimization.
- Skills in **responsive UI design** using only Material UI components.
- Ability to build reusable components and manage application state efficiently.

Project:


localhost:3000
Error
Book Explorer
Search for books
Harry Potter and the Cursed Child: The Official Script Book of the Original West
J-K Rowling, Jack Thorne, John Tiffany
PREVIEW
Harry Potter - The Illustrated Collection
J. K. Rowling
PREVIEW
Fantastic Beasts and where to Find Them
J. K. Rowling
PREVIEW
Harry Potter and the Deathly Hallows
J. K. Rowling
PREVIEW
Harry Potter
S. Gunelius
PREVIEW
Harry Potter
Unknown Author
PREVIEW
101 Amazing Harry Potter Facts
Jack Goldstein, Frankie Taylor
PREVIEW

Project Preview: