

Routing and Backend Integration

Title: “BookVerse: Explore & Navigate Between Pages”

User Story

As a reader,

I want to navigate between the Home page and Book Details page,
So that I can explore more about a book and see real-time book data.

Objective of the Activity

The objective of this activity is to extend the BookVerse application by integrating backend data, implementing page navigation using React Router, and demonstrating advanced React concepts such as routing transitions, Higher Order Components, and Render Props.

Implementation Overview

The BookVerse application is developed using React and enhanced with routing and backend integration. A local backend is created using json-server to simulate real-time data fetching. Users can navigate between the Home page and Book Details page, view book and author information, and experience smooth routing transitions.

Main.jsx

```
import { createRoot } from "react-dom/client";
import { BrowserRouter } from "react-router-dom";
import App from "./App";
import "bootstrap/dist/css/bootstrap.min.css";
import "./index.css";

createRoot(document.getElementById("root")).render(
  <BrowserRouter>
    <App />
  </BrowserRouter>
);
```

App.jsx

```
import { Routes, Route, Navigate, useLocation } from "react-router-dom";
import Home from "./pages/Home";
import BookDetails from "./pages/BookDetails";

function App() {
  const location = useLocation();

  return (
    <div className="fade-wrapper" key={location.pathname}>
      <Routes location={location}>
        <Route path="/" element={<Navigate to="/home" />} />
        <Route path="/home" element={<Home />} />
        <Route path="/book/:id" element={<BookDetails />} />
      </Routes>
    </div>
  );
}

export default App;
```

export default App;

index.css

```
.fade-wrapper {
  animation: fadeIn 3s ease-in;
}
```

```
@keyframes fadeIn {
  from {
```

```
    opacity: 0;  
}  
to {  
    opacity: 1;  
}  
}  
}
```

books.json

```
{  
    "books": [  
        { "id": 1, "title": "Atomic Habits", "author": "James Clear", "price": 499 },  
        { "id": 2, "title": "The Alchemist", "author": "Paulo Coelho", "price": 299 },  
        { "id": 3, "title": "Deep Work", "author": "Cal Newport", "price": 450 },  
        { "id": 4, "title": "Ikigai", "author": "Héctor García", "price": 350 },  
        { "id": 5, "title": "Rich Dad Poor Dad", "author": "Robert Kiyosaki", "price": 399 },  
        { "id": 6, "title": "Think and Grow Rich", "author": "Napoleon Hill", "price": 349 },  
        { "id": 7, "title": "The Power of Now", "author": "Eckhart Tolle", "price": 299 },  
        { "id": 8, "title": "Start With Why", "author": "Simon Sinek", "price": 420 },  
        { "id": 9, "title": "The Psychology of Money", "author": "Morgan Housel", "price": 380 },  
        { "id": 10, "title": "The 5 AM Club", "author": "Robin Sharma", "price": 330 }  
    ]  
}
```

AuthorInfo.jsx

```
import { Component } from "react";  
  
class AuthorInfo extends Component {  
    componentDidMount() {
```

```
        console.log("Author info loaded");

    }

    render() {
        const { author } = this.props;
        if (!author) return null;

        return (
            <div className="card p-3 mt-4">
                <h4>Author Details</h4>
                <p>{author.bio}</p>
                <ul>
                    {author.topBooks.map((b, i) => (
                        <li key={i}>{b}</li>
                    )));
                </ul>
            </div>
        );
    }
}

export default AuthorInfo;
```

BookCard.jsx

```
import PropTypes from "prop-types";
```

```
function BookCard({ book, onSelect }) {  
  return (  
    <div className="card p-3 h-100" onClick={() => onSelect(book)}>  
      <h5>{book.title}</h5>  
      <p className="text-muted">{book.author}</p>  
      <p className="fw-bold">₹{book.price}</p>  
    </div>  
  );  
}  
;
```

```
BookCard.propTypes = {  
  book: PropTypes.object.isRequired,  
  onSelect: PropTypes.func.isRequired  
};
```

```
export default BookCard;
```

BookList.jsx

```
import { useNavigate } from "react-router-dom";  
import BookCard from "./BookCard";  
  
function BookList({ books, view, onSelect }) {  
  const navigate = useNavigate();  
  
  const handleClick = (book) => {  
    onSelect(book);  
    navigate(`/book/${book.id}`, { state: { book } }); // Day 9 routing  
  };  
}
```

```
};

if (view === "list") {
  return (
    <ul className="list-group">
      {books.map((b) => (
        <li
          key={b.id}
          className="list-group-item"
          style={{ cursor: "pointer" }}
          onClick={() => handleClick(b)}
        >
          {b.title} — {b.author} — ₹{b.price}
        </li>
      )));
    </ul>
  );
}

return (
  <div className="row">
    {books.map((b) => (
      <div
        className="col-md-4 mb-3"
        key={b.id}
        onClick={() => handleClick(b)}
        style={{ cursor: "pointer" }}
      >
    
```

```
>
  <BookCard book={b} />
</div>
))}

</div>

);
}

}
```

```
export default BookList;
```

Loader.jsx

```
function Loader() {
  return (
    <div className="loader-wrapper">
      <div className="spinner-border text-primary"></div>
    </div>
  );
}

}
```

```
export default Loader;
```

Navbar.jsx

```
import { Link } from "react-router-dom";

function Navbar() {
  return (
    <nav className="navbar navbar-dark bg-dark px-3">
```

```
<Link to="/home" className="navbar-brand">  
     BookVerse  
</Link>  
</nav>  
);  
}  
  
export default Navbar;
```

SearchBox.jsx

```
import { useRef } from "react";  
  
function SearchBox({ onSearch }) {  
    const inputRef = useRef();  
  
    return (  
        <div className="mb-3">  
            <input  
                ref={inputRef}  
                type="text"  
                className="form-control"  
                placeholder="Search by title..."  
                onChange={(e) => onSearch(e.target.value)}  
            />  
            <button  
                className="btn btn-secondary mt-2"  
                onClick={() => inputRef.current.focus()}  
            >Search</button>  
        </div>  
    );  
}  
  
export default SearchBox;
```

```
>

  Focus Search

</button>

</div>

);

}

export default SearchBox;
```

authorsData.js

```
const authorsData = {

  "James Clear": {

    bio: "James Clear is an author and speaker known for his work on habits, decision-making, and continuous improvement.",

    topBooks: [

      "Atomic Habits",

      "Transform Your Habits",

      "The Habits Guide"

    ]

  },

  "Paulo Coelho": {

    bio: "Paulo Coelho is a Brazilian novelist best known for his inspirational and philosophical books.",

    topBooks: [

      "The Alchemist",

      "Brida",

    ]

  }

};
```

"Eleven Minutes"

]

},

"Cal Newport": {

bio: "Cal Newport is a professor and author who writes about productivity, focus, and meaningful work.",

topBooks: [

"Deep Work",

"Digital Minimalism",

"So Good They Can't Ignore You"

]

},

"Héctor García": {

bio: "Héctor García is a writer and blogger focused on Japanese culture and lifestyle.",

topBooks: [

"Ikigai",

"A Geek in Japan",

"The Book of Ichigo Ichie"

]

},

"Robert Kiyosaki": {

bio: "Robert Kiyosaki is an entrepreneur and author known for his books on personal finance and investing.",

topBooks: [

"Rich Dad Poor Dad",

"Cashflow Quadrant",

 "Guide to Investing"

]

},

"Napoleon Hill": {

 bio: "Napoleon Hill was an American self-help author and is considered a pioneer of personal success literature.",

 topBooks: [

 "Think and Grow Rich",

 "Success Through a Positive Mental Attitude",

 "The Law of Success"

]

},

"Eckhart Tolle": {

 bio: "Eckhart Tolle is a spiritual teacher and author focusing on mindfulness and presence.",

 topBooks: [

 "The Power of Now",

 "A New Earth",

 "Practicing the Power of Now"

]

},

"Simon Sinek": {

 bio: "Simon Sinek is a motivational speaker and author known for leadership and organizational culture topics.",

 topBooks: [

```
"Start With Why",  
"Leaders Eat Last",  
"The Infinite Game"  
]  
,  
  
"Morgan Housel": {  
    bio: "Morgan Housel is a financial writer known for explaining money and behavior in simple terms.",  
    topBooks: [  
        "The Psychology of Money",  
        "Same as Ever",  
        "Financial Behavior"  
    ]  
,  
  
"Robin Sharma": {  
    bio: "Robin Sharma is a leadership coach and author focused on personal mastery and productivity.",  
    topBooks: [  
        "The 5 AM Club",  
        "The Monk Who Sold His Ferrari",  
        "Leadership Wisdom"  
    ]  
,  
};  
  
export default authorsData;
```

withLoading.jsx (HOC)

```
import { useState } from "react";
import Loader from "../components/Loader";

function withLoading(Component) {
  return function WrappedComponent(props) {
    const [loading, setLoading] = useState(true);

    return (
      <>
        {loading && <Loader />}
        <Component {...props} stopLoading={() => setLoading(false)} />
      </>
    );
  };
}

export default withLoading;
```

BookDetails.jsx

```
import { useLocation, Link } from "react-router-dom";
import AuthorInfo from "../components/AuthorInfo";
import authorsData from "../data/authorsData";
```

```
function BookDetails() {
  const location = useLocation();
  const book = location.state?.book;
```

```
if (!book) {  
    return (  
        <div className="container mt-4">  
            <p>No book data available</p>  
            <Link to="/home">Back</Link>  
        </div>  
    );  
}  
  
return (  
    <div className="container mt-4">  
        <h3>{book.title}</h3>  
        <p className="text-muted">{book.author}</p>  
        <p className="fw-bold">₹{book.price}</p>  
  
        <AuthorInfo author={authorsData[book.author]} />  
  
        <Link to="/home" className="btn btn-link mt-3">  
            ← Back to Home  
        </Link>  
    </div>  
);  
}  
  
export default BookDetails;
```

Home.jsx

```
import { useEffect, useState } from "react";
import { Link } from "react-router-dom";
import SearchBox from "../components/SearchBox";
import BookList from "../components/BookList";
import AuthorInfo from "../components/AuthorInfo";
import Status from "../renderprops/Status";
import authorsData from "../data/authorsData";

function Home() {
  const [books, setBooks] = useState([]);
  const [view, setView] = useState("grid");
  const [search, setSearch] = useState("");
  const [author, setAuthor] = useState(null);

  useEffect(() => {
    fetch("http://localhost:3001/books")
      .then(res => res.json())
      .then(data => setBooks(data));
  }, []);

  const filtered = books.filter(b =>
    b.title.toLowerCase().includes(search.toLowerCase())
  );

  return (
    <div>
      <SearchBox search={search} setSearch={setSearch} />
      <div>
        <Link to="/">View All Books</Link>
        <Link to="/grid">View Grid</Link>
        <Link to="/list">View List</Link>
      </div>
      <BookList books={books} view={view} setView={setView} />
      <AuthorInfo author={author} />
      <Status />
    </div>
  );
}
```

```
<div className="container mt-4">

  <Status>{() => <h5>Welcome Reader!</h5>}</Status>

  <SearchBox onSearch={setSearch} />

  <div className="mb-3">
    <button
      className={`btn me-2 ${view === "grid" ? "btn-primary" : "btn-outline-primary"}`}
      onClick={() => setView("grid")}
    >
      Grid
    </button>
    <button
      className={`btn ${view === "list" ? "btn-primary" : "btn-outline-primary"}`}
      onClick={() => setView("list")}
    >
      List
    </button>
  </div>

  <p className="text-muted">
    Click on a book to know author details
  </p>

  <BookList>
```

```
        books={filtered}
        view={view}
        onSelect={(b) => setAuthor(authorsData[b.author])}
      />

      <AuthorInfo author={author} />
    </div>
  );
}

export default Home;
```

Status.jsx(render props)

```
function Status({ children }) {
  const loggedIn = true;
  return children(loggedIn);
}

export default Status;
```

Output Screenshots:

Homepage: Grid, List view

Welcome Reader!

Search by title...

Focus Search

Grid List

Click on a book to know author details

Atomic Habits James Clear ₹499	The Alchemist Paulo Coelho ₹299	Deep Work Cal Newport ₹450
Ikigai Héctor García ₹350	Rich Dad Poor Dad Robert Kiyosaki ₹399	Think and Grow Rich Napoleon Hill ₹349
The Power of Now Eckhart Tolle ₹299	Start With Why Simon Sinek ₹420	The Psychology of Money Morgan Housel ₹380
The 5 AM Club Robin Sharma ₹330		

Welcome Reader!

Search by title...

Focus Search

Grid List

Click on a book to know author details

Atomic Habits — James Clear — ₹499
The Alchemist — Paulo Coelho — ₹299
Deep Work — Cal Newport — ₹450
Ikigai — Héctor García — ₹350
Rich Dad Poor Dad — Robert Kiyosaki — ₹399
Think and Grow Rich — Napoleon Hill — ₹349
The Power of Now — Eckhart Tolle — ₹299
Start With Why — Simon Sinek — ₹420
The Psychology of Money — Morgan Housel — ₹380
The 5 AM Club — Robin Sharma — ₹330

Search Filter Functionality

The screenshot shows a web browser window with the URL `localhost:5173/home`. At the top, there is a search bar containing the word "Atomic". Below the search bar are two buttons: "Focus Search" (dark grey) and "Grid" (blue). There is also a "List" button. A tooltip message "Click on a book to know author details" is displayed above the book card. The book card for "Atomic Habits" by James Clear is shown, with a price of ₹499.

Routing: Navigation and Transition

The screenshot shows a web browser window with the URL `localhost:5173/book/1`. The main content area displays the book "Atomic Habits" by James Clear, with a price of ₹499. Below the book information, there is a section titled "Author Details" which contains a brief bio and a list of related books:

Author Details
James Clear is an author and speaker known for his work on habits, decision-making, and continuous improvement.

- Atomic Habits
- Transform Your Habits
- The Habits Guide

At the bottom of the page, there is a link "[← Back to Home](#)".

Rich Dad Poor Dad

Robert Kiyosaki

€399

Author Details

Robert Kiyosaki is an entrepreneur and author known for his books on personal finance and investing.

- Rich Dad Poor Dad
- Cashflow Quadrant
- Guide to Investing

[Back to Home](#)

Backend

```
{
  "books": [
    {
      "id": "1",
      "title": "Atomic Habits",
      "author": "James Clear",
      "price": 400
    },
    {
      "id": "2",
      "title": "The Alchemist",
      "author": "Paulo Coelho",
      "price": 299
    },
    {
      "id": "3",
      "title": "Deep Work",
      "author": "Cal Newport",
      "price": 450
    },
    {
      "id": "4",
      "title": "Ikigai",
      "author": "Héctor García",
      "price": 350
    },
    {
      "id": "5",
      "title": "Rich Dad Poor Dad",
      "author": "Robert Kiyosaki",
      "price": 399
    },
    {
      "id": "6",
      "title": "Think and Grow Rich",
      "author": "Napoleon Hill",
      "price": 349
    },
    {
      "id": "7",
      "title": "The Power of Now",
      "author": "Eckhart Tolle",
      "price": 299
    },
    {
      "id": "8",
      "title": "Start With Why",
      "author": "Simon Sinek",
      "price": 400
    },
    {
      "id": "9",
      "title": "The Psychology of Money",
      "author": "Morgan Housel",
      "price": 300
    },
    {
      "id": "10",
      "title": "The 5 AM Club",
      "author": "Robin Sharma",
      "price": 330
    }
  ]
}
```

Conclusion

The BookVerse application successfully meets all the acceptance criteria for routing and backend integration. The project demonstrates effective use of React Router for navigation, backend data fetching using json-server, smooth routing transitions, and advanced React patterns such as

Higher Order Components and Render Props. The implementation follows modular and reusable design principles, making the application scalable and maintainable.