RESPONSIVE E-BOOK READER WEB APPLICATION

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Course: UI/UX Design Fundamentals
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Date of Submission: 26/09/2025

Abstract

This project focuses on designing and developing a responsive front-end web application for an E-Book Reader. The main goal was to create a user-friendly interface where users can organize, filter, and read e-books with adjustable reading preferences. The application was built using HTML5, CSS3, Bootstrap 5, and JavaScript (with jQuery). It features a dynamic library system, search and filter options, and a customizable reading panel with themes, fonts, and sizes. The final outcome is a clean, responsive, and accessible e-book reading platform that can be expanded with backend integration for real-world use.

Objectives

• Design a modern, intuitive, and user-friendly interface.

• Develop a responsive e-book library and reader UI.

• Implement structured HTML5 semantic elements for accessibility.

• Apply Bootstrap 5 and custom CSS styling for layout, responsiveness, and visual hierarchy.

• Enable interactive features like filters, favorites, search, and reader customization.

Scope of the Project

• Front-end design and interaction only
• No backend server or real file uploads—library data is stored in localStorage
• Intended for desktop, tablet, and mobile devices
• Uses open-source libraries (Bootstrap, jQuery, Font Awesome)
• Focuses on UI/UX principles rather than backend logic

Tools & Technologies Used

Tool/Technology	**Purpose**
HTML5	Page structure and semantic layout
CSS3 + Bootstrap 5	Styling, layout, responsiveness
JavaScript + jQuery	Interactivity and library management
Font Awesome	Icons
VS Code	Code editor
Chrome DevTools	Testing & debugging

HTML Structure Overview

• Semantic tags: <header>, <nav>, <main>, <aside>, <footer>
• Divided into sections: Navbar, Sidebar (Filters), Library Grid, Book Detail Modal, Reader Modal
• Used Bootstrap grid system (row, col) for responsive layouts
• Navigation/search bar for search + filtering

CSS Styling Strategy

• External + inline custom CSS (inside <style>)
• Organized with comments and Bootstrap overrides
• Techniques used:
  o Flexbox & Grid via Bootstrap
  o Media queries for sidebar collapse on mobile
  o Hover effects for book cards
  o Theme switching (Light, Dark, Sepia)
  o Mobile-first design approach

Key Features

Feature	**Description**
Responsive Design	Works seamlessly across devices (desktop, tablet, mobile)
Search & Filter	Filter by format, status, language, and

	tags
Favorites System	Mark and view favorite books
Book Detail Modal	Displays cover, metadata, synopsis, and options
Customizable Reader	Adjustable font, size, line height, and theme
Library Export	Export current library to JSON
LocalStorage Support	Books and settings persist locally

Challenges Faced & Solutions

Challenge	**Solution**
Sidebar overlapping on mobile	Used media queries and toggleable class .open
Maintaining state for favorites & settings	Stored data in localStorage
Text readability across themes	Created theme classes (theme-light, theme-dark, theme-sepia)
Responsive grid display for books	Used Bootstrap grid system instead of floats

Outcome

• Built a responsive and interactive e-book reader UI
• Implemented dynamic filtering, favorites, and search functionality
• Achieved a customizable reading environment with multiple themes and fonts
• Strengthened understanding of responsive layouts, UI components, and interactivity

Future Enhancements

• Backend integration for real book uploads and sync
• Authentication system for user accounts
• Cloud-based bookmarks & notes
• Offline support using Service Workers
• Add animations and transitions for smoother UX

Sample Code

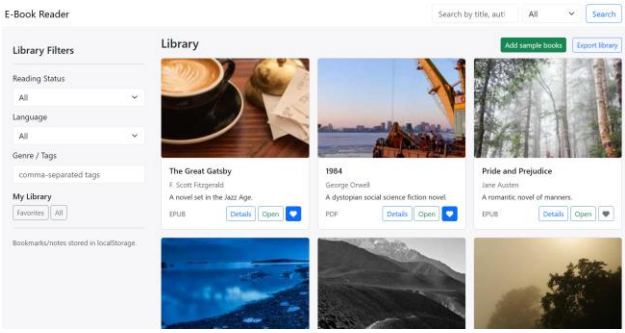
Book Card (Library Grid)

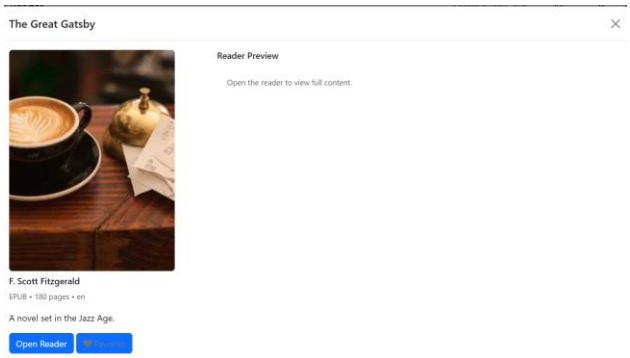
```
 <div class="card book-card h-100" data-id="book1">
  <img src="cover.jpg" class="card-img-top cover">
  <div class="card-body d-flex flex-column">
   <h6 class="card-title">A Little Demo Book</h6>
   <p class="text-muted small mb-1">Demo Author</p>
   <p class="card-text small text-truncate mb-2">A tiny demo ebook for testing features.</p>
  </div>
 </div>
</div>
```

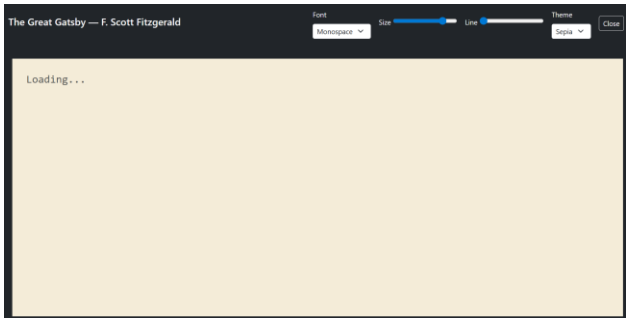
Reader Settings (Theme, Font, Size)

```
<div class="controls">
 <label class="form-label small text-light">Theme</label>
 <select id="themeSelect" class="form-select form-select-sm">
  <option value="light">Light</option>
  <option value="sepia">Sepia</option>
  <option value="dark">Dark</option>
 </select>
</div>
```

Screenshots of Final Output







Conclusion

This project successfully demonstrates the design and development of a responsive E-Book Reader front-end using HTML, CSS, Bootstrap, and JavaScript. It provided practical experience in UI/UX principles, responsive grid layouts, and user-centric design. The project also reinforced skills in local storage, theming, and interactive components, preparing a solid foundation for more advanced front-end applications.

References

- L&T LMS: https://learn.lntedutech.com/Landing/MyCourse
- Bootstrap Documentation: https://getbootstrap.com/
- MDN Web Docs: https://developer.mozilla.org/