

CST-350 Benchmark - Activity 8 Bible Verse Application

Alex M. Frear

College of Science, Engineering, and Technology, Grand Canyon University

Course Number: CST-350

Professor Brandon Bass

12/15/2024

GitHub Link:

https://github.com/amfrear/cst350/tree/main/Benchmark_Activity_8

Contents

GitHub Link	1
Design Documents.....	3
1. UML Diagram	3
2. Wireframes	4
3. ER Diagram.....	5
Application Screenshots	6
Home Page (Initial View)	6
Home Page with Keyword Search Results	7
Home Page with Reference Search Results	8
Home Page with Combined Search Results.....	9
View Details Page (Initial View)	10
Adding a Note.....	11
Editing a Note.....	12
Deleting a Note.....	13
Reference Search Results Page: Back to Chapter Button	14
AJAX Functionality for Search Results.....	15
AJAX for Adding Notes.....	16
AJAX for Editing Notes	17
AJAX for Deleting Notes.....	18
Summary of Key Concepts	19
Application Design and Development.....	19
Database Design and Relationships	19
AJAX Integration and User Experience	19
Real-World Relevance and Impact.....	19

Design Documents

This section demonstrates the design and planning process, showcasing the UML diagram, wireframes, and ER diagram. Each element highlights the structure and intended functionality of the application.

1. UML Diagram

The UML diagram illustrates the structure of the application, including classes, properties, and methods.

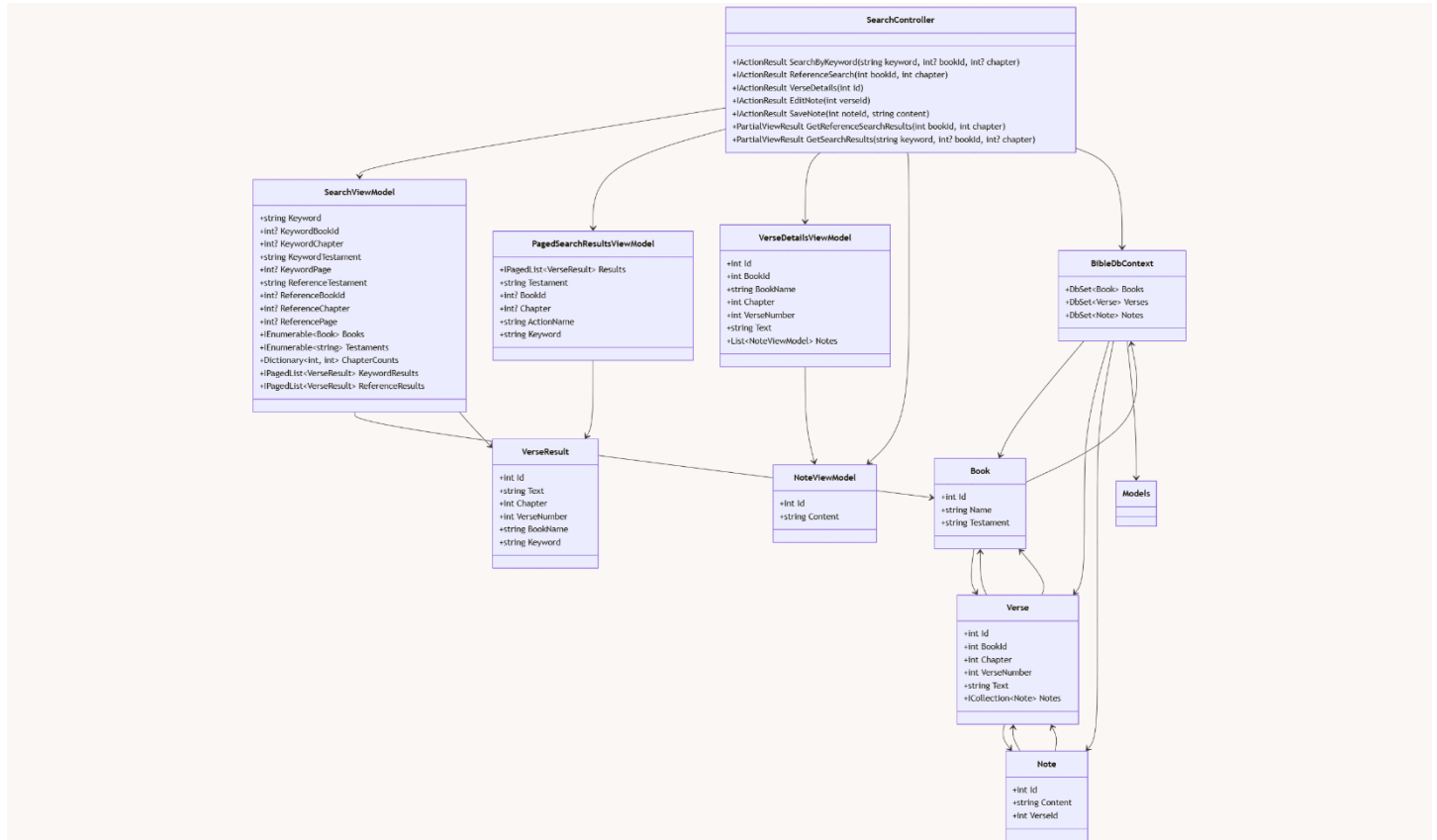


Figure 1 The application structure is well-defined through this UML diagram.

2. Wireframes

The wireframes represent the user interface design for the application.

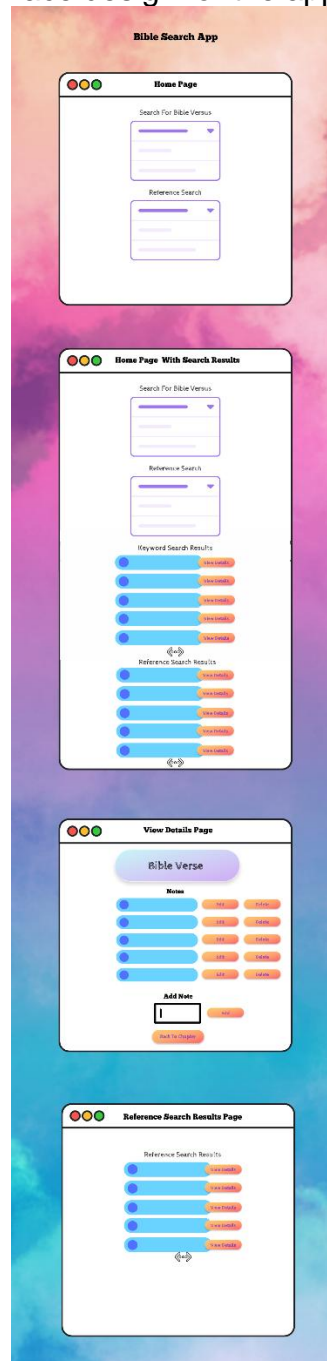


Figure 2 The user interface plan provides a clear vision of the layout and navigation.

3. ER Diagram

The ER diagram outlines the database structure, showing relationships between tables (asv_books, asv_verses, and notes).

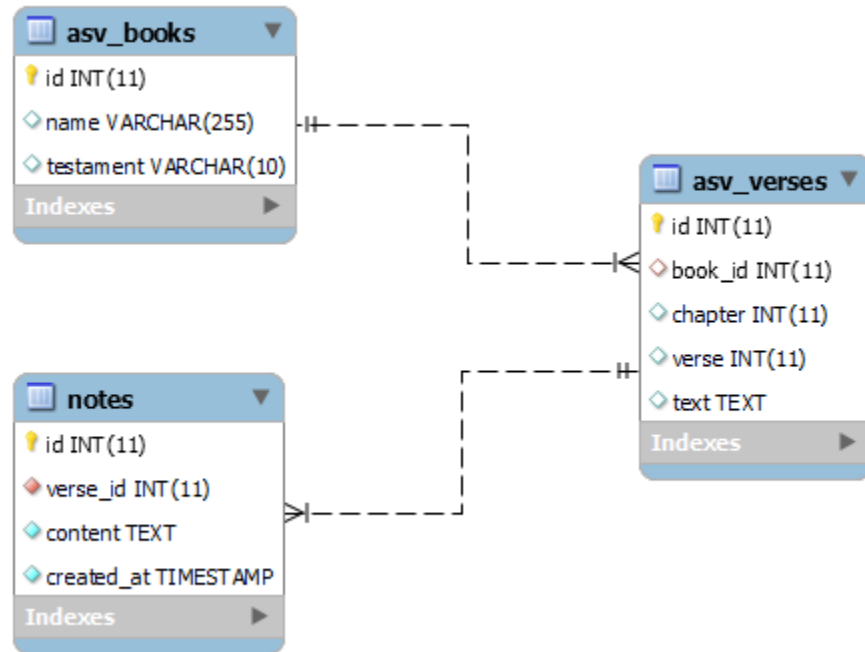


Figure 3 The ER diagram defines database relationships clearly.

Application Screenshots

This section provides screenshots of the application's functionality, with captions explaining each step of the user experience.

Home Page (Initial View)

Description: Displays options for keyword-based and reference-based searches.

BibleSearchApp Home

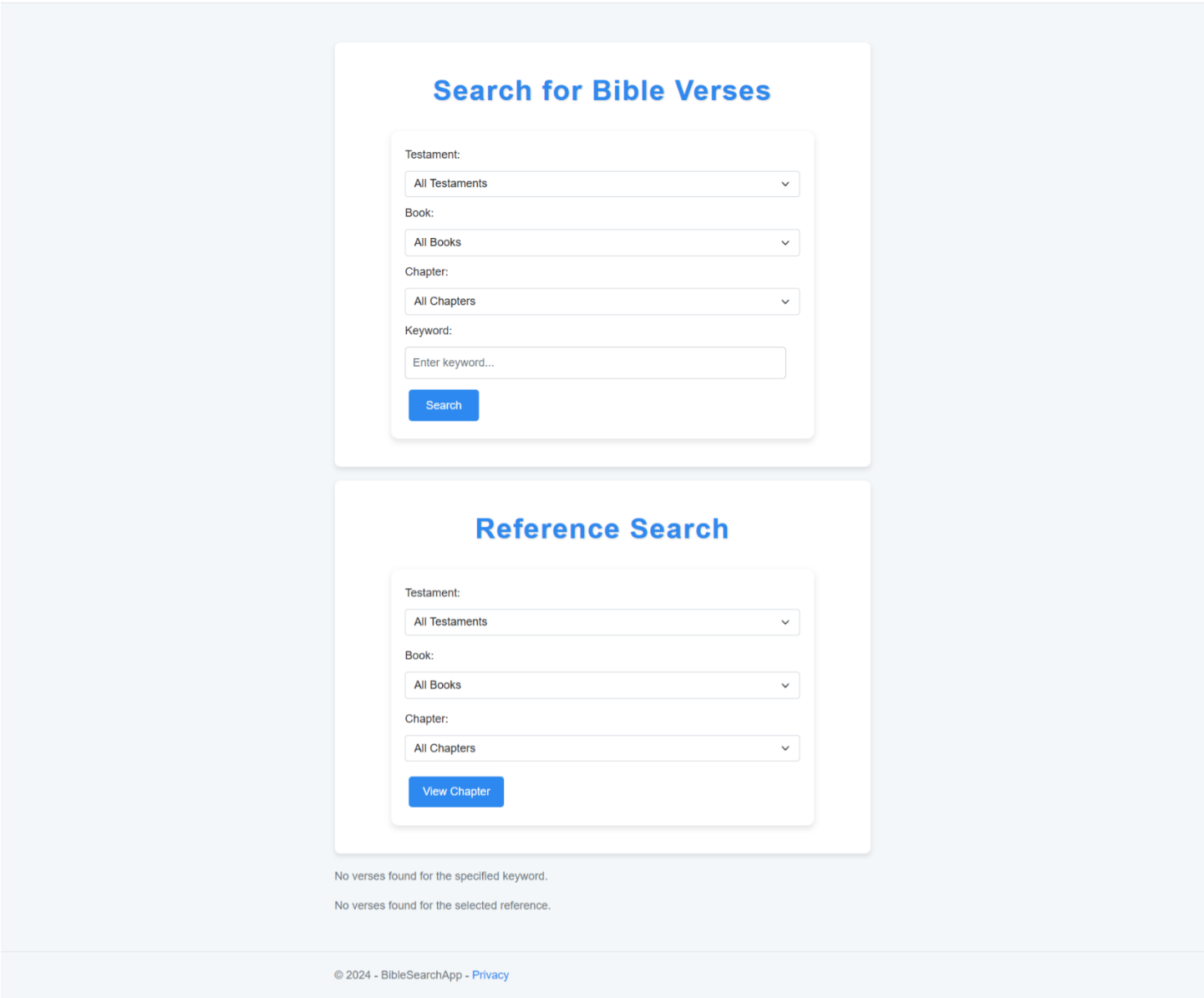


Figure 4 The initial view offers intuitive navigation for users.

Home Page with Keyword Search Results

Description: Displays search results when a keyword is entered.

BibleSearchApp Home

Search for Bible Verses

Testament:
Old

Book:
All Books

Chapter:
All Chapters

Keyword:
light

Search

Reference Search

Testament:
All Testaments

Book:
All Books

Chapter:
All Chapters

View Chapter

Keyword Search Results

Showing 1 - 5 of 8 results
Page 1 of 2

Verse	Text	Actions
3	And God said, Let there be light : and there was light .	View Details
4	And God saw the light , that it was good: and God divided the light from the darkness.	View Details
5	And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	View Details
14	And God said, Let there be lights in the firmament of heaven to divide the day from the night; and let them be for signs, and for seasons, and for days and years:	View Details
15	and let them be for lights in the firmament of heaven to give light upon the earth: and it was so.	View Details

< 1 2 >

No verses found for the selected reference.

© 2024 - BibleSearchApp - [Privacy](#)

Figure 5 Search results are displayed dynamically based on the keyword.

Home Page with Reference Search Results

Description: Displays results for a reference-based search by book and chapter.

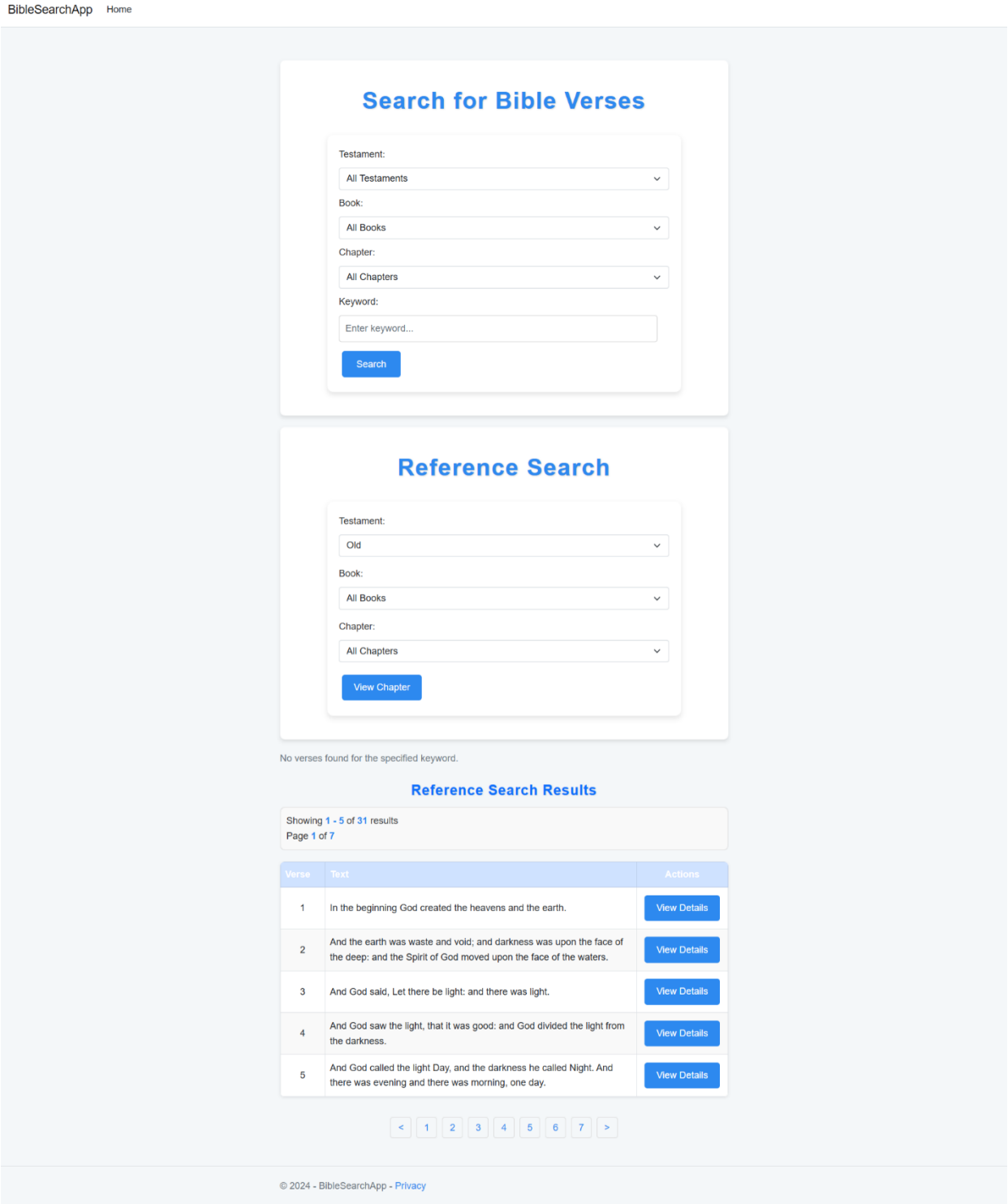


Figure 6 Reference-based searches return accurate chapter results.

Home Page with Combined Search Results

Description: Displays results for both keyword and reference-based searches together.

BibleSearchApp Home

Search for Bible Verses

Testament:

Old

Book:

All Books

Chapter:

All Chapters

Keyword:

light

Search

Reference Search

Testament:

Old

Book:

All Books

Chapter:

All Chapters

View Chapter

Keyword Search Results

Showing 1 - 5 of 8 results
Page 1 of 2

Verses	Text	Actions
3	And God said, Let there be light: and there was light.	<div>View Details</div>
4	And God saw the light, that it was good: and God divided the light from the darkness.	<div>View Details</div>
5	And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	<div>View Details</div>
14	And God said, Let there be lights in the firmament of heaven to divide the day from the night; and let them be for signs, and for seasons, and for days and years:	<div>View Details</div>
15	and let them be for lights in the firmament of heaven to give light upon the earth: and it was so.	<div>View Details</div>

<

1

2

>

Reference Search Results

Showing 1 - 5 of 31 results
Page 1 of 7

Verses	Text	Actions
1	In the beginning God created the heavens and the earth.	<div>View Details</div>
2	And the earth was waste and void; and darkness was upon the face of the deep; and the Spirit of God moved upon the face of the waters.	<div>View Details</div>
3	And God said, Let there be light: and there was light.	<div>View Details</div>
4	And God saw the light, that it was good: and God divided the light from the darkness.	<div>View Details</div>
5	And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	<div>View Details</div>

<

1

2

3

4

5

6

7

>

© 2024 - BibleSearchApp - [Privacy](#)

Figure 7 Combined results enhance user search capabilities.

View Details Page (Initial View)

Description: Displays details for a selected Bible verse along with its associated notes.

BibleSearchApp Home

The screenshot displays the 'View Details Page' for a selected Bible verse, Genesis 1:1. The page layout is clean and organized. At the top, the verse reference '[Genesis 1:1]' is shown in blue, followed by the text 'In the beginning God created the heavens and the earth.' Below this, a 'Notes' section is titled in blue. It contains a table with two columns: 'Note' and 'Actions'. The table body shows 'No notes available for this verse.' Below the table, there is a section titled 'Add a Note' in blue. This section contains a text input field with the placeholder 'Add your note here...' and a blue 'Add Note' button. At the bottom of the main content area, there is a dark grey button labeled 'Back to Chapter'. The footer of the page shows the copyright '© 2024 - BibleSearchApp - Privacy'.

[Genesis 1:1]

In the beginning God created the heavens and the earth.

Notes

Note	Actions
No notes available for this verse.	

Add a Note

Add your note here...

Add Note

Back to Chapter

© 2024 - BibleSearchApp - [Privacy](#)

Figure 8 Verse details are presented clearly for user review.

Adding a Note

Description: Allows a user to add a note for a specific verse.

BibleSearchApp Home

The screenshot displays the BibleSearchApp interface. At the top, a white box contains the text "[Genesis 1:1]" in blue, followed by "In the beginning God created the heavens and the earth." Below this, a section titled "Notes" in blue contains a table with one row. The table has two columns: "Note" and "Actions". The "Note" column contains the text "This is a test Note." and the "Actions" column contains two buttons: "Edit" (yellow) and "Delete" (red). Below the table, a white box titled "Add a Note" in blue contains a text input field with the placeholder text "Add your note here..." and a blue "Add Note" button. At the bottom of the page, there is a dark gray button labeled "Back to Chapter" and a footer with the text "© 2024 - BibleSearchApp - Privacy".

Note	Actions
This is a test Note.	<button>Edit</button> <button>Delete</button>

Add a Note

Add your note here...

Add Note

Back to Chapter

© 2024 - BibleSearchApp - Privacy

Figure 9 Users can annotate verses with personal notes.

Editing a Note

Description: Displays the edit note functionality.

BibleSearchApp Home

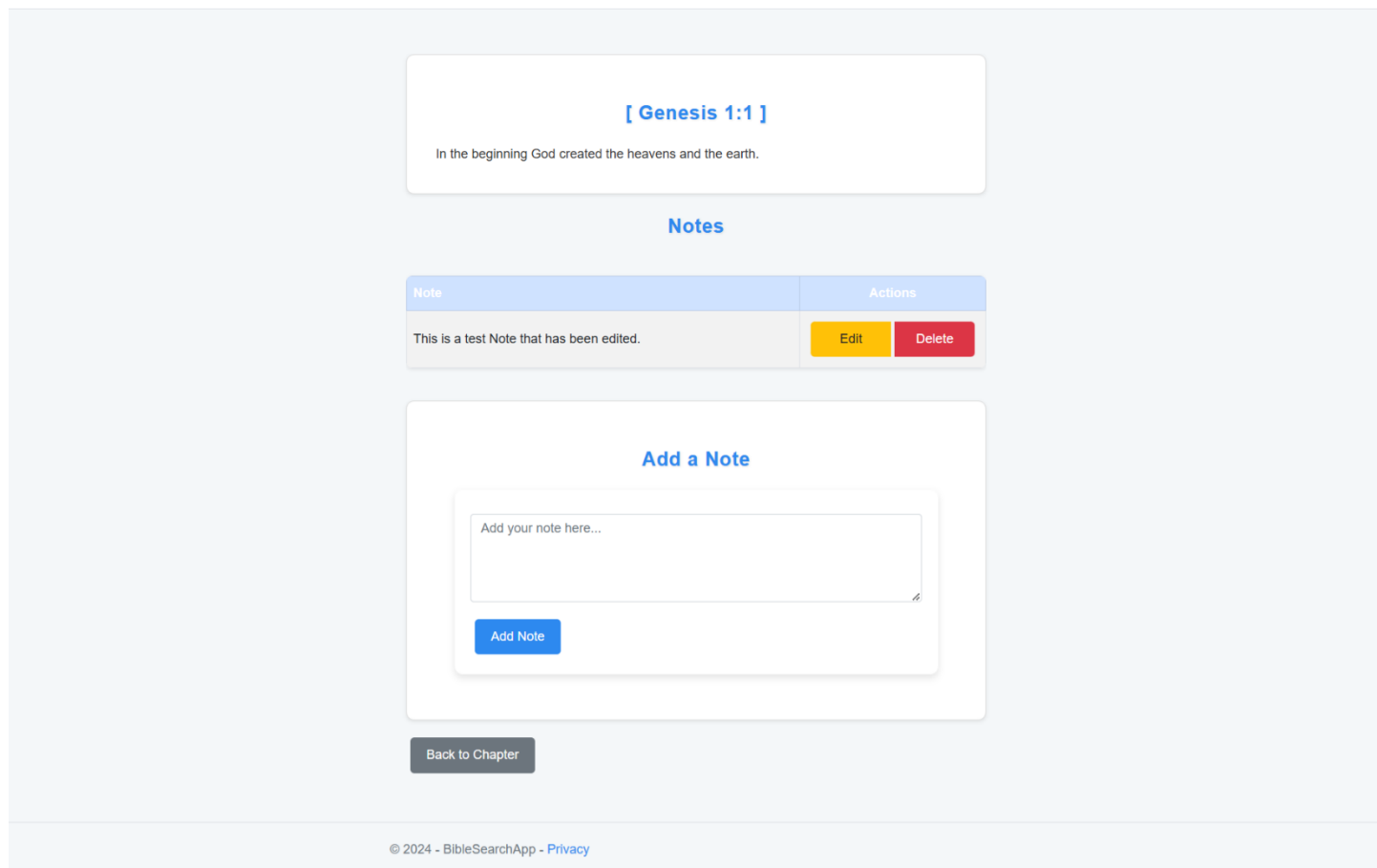


Figure 10 Users can easily edit existing notes.

Deleting a Note

Description: Demonstrates deleting an existing note.

BibleSearchApp Home

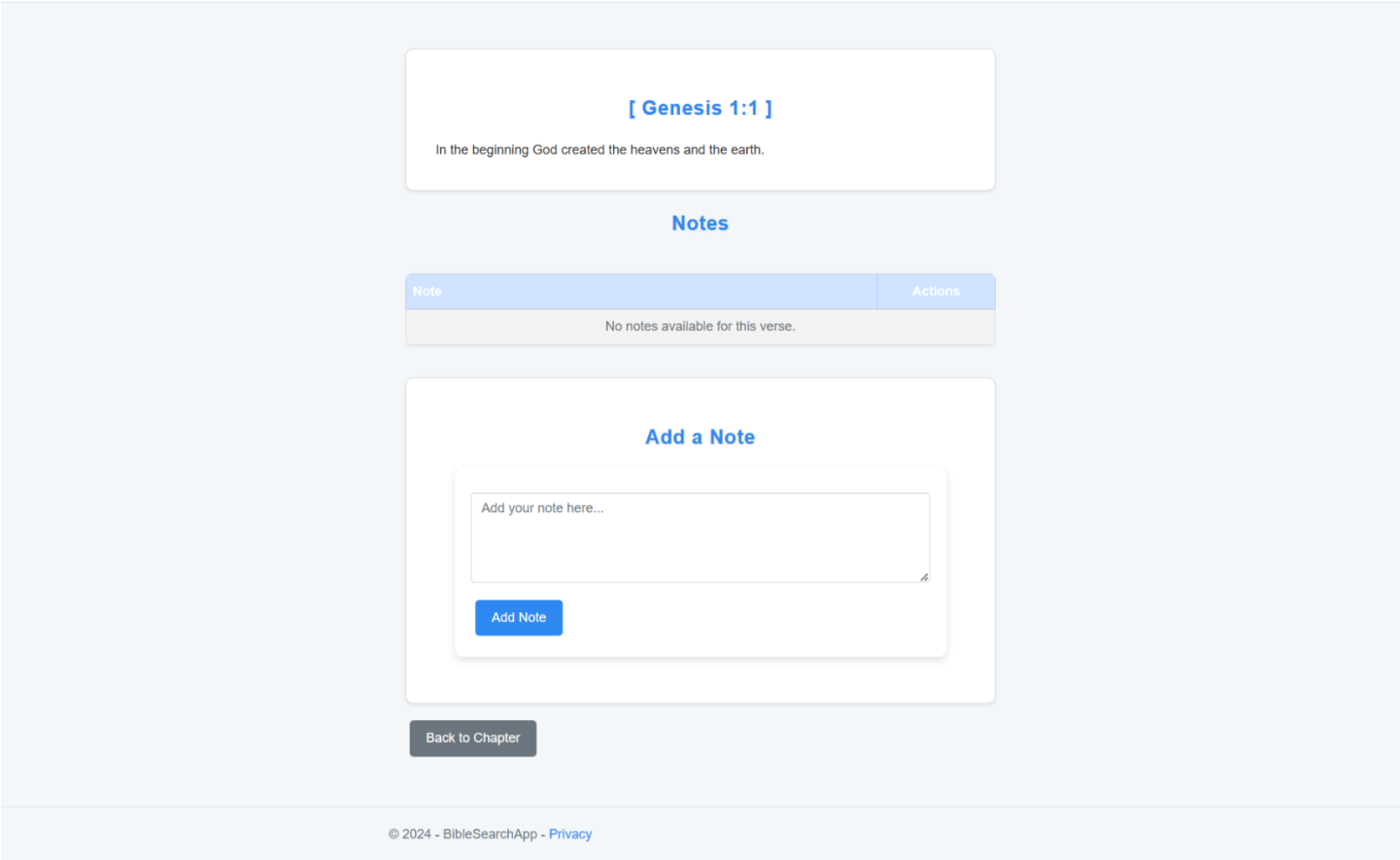


Figure 11 Note deletion functionality is intuitive and efficient.

Reference Search Results Page: Back to Chapter Button

Description: Highlights the "Back to Chapter" button functionality.

BibleSearchApp Home

Reference Search Results

Showing 1 - 5 of 31 results
Page 1 of 7

Verse	Text	Actions
1	In the beginning God created the heavens and the earth.	View Details
2	And the earth was waste and void; and darkness was upon the face of the deep: and the Spirit of God moved upon the face of the waters.	View Details
3	And God said, Let there be light: and there was light.	View Details
4	And God saw the light, that it was good: and God divided the light from the darkness.	View Details
5	And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	View Details

< 1 2 3 4 5 6 7 >

© 2024 - BibleSearchApp - [Privacy](#)

Figure 12 Users can return to the chapter with a single click.

AJAX Functionality for Search Results

Description: Developer tools showing AJAX during a search query.

The screenshot shows a web application running on localhost:7056. The application has a search bar at the top with a "View Chapter" button. Below the search bar, there are two sections: "Keyword Search Results" and "Reference Search Results".

Keyword Search Results: Shows 1 - 5 of 6 results. The results are displayed in a table with columns: Verse, Text, and Actions. The text in the "Text" column highlights the word "light".

Verse	Text	Actions
3	And God said, Let there be light : and there was light .	View Details
4	And God saw the light , that it was good: and God divided the light from the darkness.	View Details
5	And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	View Details
14	And God said, Let there be lights in the firmament of heaven to divide the day from the night, and let them be for signs, and for seasons, and for days and years:	View Details
15	and let them be for lights in the firmament of heaven to give light upon the earth: and it was so.	View Details

Reference Search Results: Shows 1 - 5 of 31 results. The results are displayed in a table with columns: Verse, Text, and Actions.

Verse	Text	Actions
1	In the beginning God created the heavens and the earth.	View Details
2	And the earth was waste and void, and darkness was upon the face of the deep: and the Spirit of God moved upon the face of the waters.	View Details
3	And God said, Let there be light: and there was light.	View Details
4	And God saw the light, that it was good: and God divided the light from the darkness.	View Details
5	And God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day.	View Details

The browser's developer tools are open, showing the Network tab. Two requests are visible:

- SearchByKeyword?testament=Old&...:** Status 200, Type xhr, Initiator jquery.min.js?v=...xLj, Size 3.9 kB, Time 34...
- ReferenceSearch?testament=Old&b...:** Status 200, Type xhr, Initiator jquery.min.js?v=...xLj, Size 4.1 kB, Time 23...

The bottom of the developer tools shows: 2 requests | 8.0 kB transferred | 7.9 kB resources.

Figure 13 AJAX enables smooth, asynchronous search updates.

AJAX for Adding Notes

Description: AJAX functionality during note addition.

The screenshot shows a web application running on localhost:7056/Search/VerseDetails/1. The application displays a Bible verse, [Genesis 1:1], with the text "In the beginning God created the heavens and the earth." Below the verse, there is a section titled "Notes" containing a table with one note: "This is a Test Note." The table has columns for "Note" and "Actions", with "Edit" and "Delete" buttons. Below the table, there is a form titled "Add a Note" with a text input field and an "Add Note" button. A "Back to Chapter" button is at the bottom left.

The network tab on the right shows two requests:

Name	Status	Type	Initiator	Size	Time
negotiate?requestUrl=https%3A%2F%2Flocalhost%3A7056%2FSearch%2FVerseDetails%2F1	200	xhr	browserLink21	955 B	29 ms
AddNoteAjax	200	fetch	notesHandler.js?v=1.0.0	1.5 kB	70 ms

Figure 14 Notes are added dynamically without refreshing the page.

AJAX for Editing Notes

Description: AJAX functionality during note editing.

The screenshot displays a web browser window with the URL `localhost:7056/Search/VerseDetails/1`. The application interface includes a header for `[Genesis 1:1]` with the text "In the beginning God created the heavens and the earth." Below this is a "Notes" section. It contains a table with one note: "This is a Test Note that has been edited." The table has columns for "Note" and "Actions", with "Edit" and "Delete" buttons in the actions column. Below the table is an "Add a Note" form with a text input field labeled "Add your note here..." and an "Add Note" button. At the bottom left is a "Back to Chapter" button.

On the right side of the browser window, the Network tab is open, showing a list of requests. The first request is `negotiate?requestUrl=https%3A%2F%2Flocalhost%3A7056%2FSearch/VerseDetails/1` with status 200, type xhr, and initiator `browserLink21`. The second request is `EditNoteAjax` with status 200, type fetch, and initiator `notesHandler.js?v=1`. The bottom of the Network tab shows summary statistics: 2 / 17 requests, 2.5 kB / 246 kB transferred, 2.2 kB / 602 kB resources, Finish: 14.88 s, and DOMContentLoaded.

Figure 15 Edit updates are reflected instantly through AJAX.

AJAX for Deleting Notes

Description: AJAX functionality during note deletion.

The screenshot displays a web application interface for viewing Bible verses and managing notes. The main content area shows the verse "[Genesis 1:1]" with the text "In the beginning God created the heavens and the earth." Below this, a "Notes" section indicates "No notes available for this verse." At the bottom, there is an "Add a Note" form with a text input field and an "Add Note" button. A "Back to Chapter" button is also visible.

On the right side, the browser's developer tools are open, showing the "Network" tab. The log displays two requests:

Name	Status	Type	Initiator	Size	Time
negotiate?requestUrl=https%3A%2F%2Flocalhost%3A7056%2FSearchVerseDetails/1	200	xhr	browserLink21	955 B	3 ms
DeleteNoteAjax	200	fetch	notesHandler.js?v=1.0	580 B	52 ms

The status bar at the bottom of the developer tools shows: 2 / 16 requests | 1.5 kB / 245 kB transferred | 1.2 kB / 601 kB resources | Finish: 2.09 s | DOMContentLoaded

Figure 16 Notes are removed seamlessly using AJAX.

Summary of Key Concepts

Application Design and Development

Developing the BibleSearchApp provided me with valuable experience in planning and structuring a software project. Creating UML diagrams, wireframes, and an ER diagram helped me approach the application systematically. These design documents allowed me to anticipate potential issues and stay organized throughout the process. I also deepened my understanding of the Model-View-Controller (MVC) architecture, which helped me cleanly separate concerns. By organizing the application into models, views, and controllers, I was able to focus on designing intuitive user interfaces, managing complex logic, and maintaining efficient data access.

Database Design and Relationships

The BibleSearchApp required me to design and implement a relational database to store books, verses, and user notes. This was an excellent opportunity to enhance my skills in database design, particularly in modeling relationships and writing efficient queries. The experience of linking related data, such as connecting notes to specific verses, taught me how to structure databases for easy data retrieval and scalability.

AJAX Integration and User Experience

One of the most rewarding aspects of this project was implementing AJAX for features like search results and note management. By using AJAX, I was able to create a more responsive and modern application that updates dynamically without full-page reloads. Integrating JavaScript with server-side ASP.NET Core controllers gave me a clearer understanding of how to handle asynchronous client-server communication effectively. This experience improved my ability to create applications that feel smooth and user-friendly.

Real-World Relevance and Impact

The purpose of this project was particularly meaningful to me, as the BibleSearchApp is designed to address real-world needs. By providing features like keyword and reference searches and allowing users to annotate verses with personal notes, the app supports both personal Bible study and group discussions. Knowing that this tool could enhance accessibility and spiritual growth made the development process more fulfilling and gave me a deeper appreciation for the impact of well-designed software.