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Control flow of project
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```

1. request -> http://localhost:9999/
/ ---> GetMapping

LibraryController.java

=====

```
@GetMapping("/")
public String showPage() {
    return "redirect:new-book";
}
```

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new-book.jsp

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```
<form:form action="/add" modelAttribute="book" method="post">
    <div>
        <div>
            <form:label path="author">AUTHOR</form:label>
            <form:input path="author" />
        </div>
        <div>
            <form:label path="name">NAME</form:label>
            <form:input path="name" />
        </div>
        <div>
            <input type='submit' value='ADD USERS'>
        </div>
    </div>
</form:form>
```

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Case 2: Upon entering the data, the user will click on ADD USERS button it should navigate to "/add(PostMapping)".

LibraryController.java

=====

```
@PostMapping("/add")
public String addNewBook(@ModelAttribute Book book, Model model) {
    service.saveBook(book); //logic for saving the book in database
    model.addAttribute("books", service.findAllBooks());
    return "books";
}
```

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books.jsp

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```
<div>
    <h2>LIBRARY</h2>
    <br/>
    <a href='/new-book'>
        <!-- LINK FOR ADDING NEW BOOK -->
        <button type='submit'>ADD NEW BOOK</button>
    </a>
    <br/><br/>
```

```

</div>
<div>
    <div>BOOK LIST</div>
    <div>
        <table border='1'>
            <tr>
                <th>ID</th>
                <th>Author</th>
                <th>Name</th>
                <th>Operation</th>
            </tr>
            <c:forEach var="book" items="${books }">
                <tr>
                    <td>${book.id }</td>
                    <td>${book.author }</td>
                    <td>${book.name }</td>
                    <td>
                        <!-- UPDATE LINK(GetMapping) -->
                        <a href='/${book.id}'> EDIT</a>

                        <!-- DELETE BUTTON(PostMapping)-->
                        <form action = '/${book.id }/delete'
method='post'>

                            <input type='submit' value='DELETE' />
                        </form>
                    </td>
                </tr>
            </c:forEach>
        </table>
    </div>
</div>

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```

Case3: If the user clicks on ADD NEW BOOK Button then it should navigate to "new-book.jsp".

```

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new-book.jsp
+++++++
<form:form action="/add" modelAttribute="book" method="post">
    <div>
        <div>
            <form:label path="author">AUTHOR</form:label>
            <form:input path="author" />
        </div>
        <div>
            <form:label path="name">NAME</form:label>
            <form:input path="name" />
        </div>
        <div>
            <input type='submit' value='ADD USERS'>
        </div>
    </div>
</form:form>

```

Upon entering the book details ,it should navigate to "/"add" same as case-2.

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Case4: Assume the user has clicked on DELETE button(PostMapping with id of the book)

LibraryController.java

=====

```
@PostMapping("/{id}/delete")
public String deleteBookById(@PathVariable Integer id, Model model) {
    service.findBookById(id).orElseThrow(() -> new
    IllegalArgumentException("Invalid book id :" + id));
    service.deleteBookById(id); //logic for deleting the book in database using
    datajpa
    model.addAttribute("books", service.findAllBooks());
    return "books";
}
```

=> After deleting the book, All the details of book in the database will be displayed from "books.jsp".

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books.jsp

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<div>

<h2>LIBRARY</h2>

<!-- LINK FOR ADDING NEW BOOK -->

<button type='submit'>ADD NEW BOOK</button>

</div>

<div>

<div>BOOK LIST</div>

<div>

<table border='1'>

<tr>

<th>ID</th>

<th>Author</th>

<th>Name</th>

<th>Operation</th>

</tr>

<c:forEach var="book" items="\${books }">

<tr>

<td>\${book.id }</td>

<td>\${book.author }</td>

<td>\${book.name }</td>

<td>

<!-- UPDATE LINK(GetMapping) -->

EDIT

<!-- DELETE BUTTON(PostMapping)-->

<form action = '/\${book.id }/delete'

method='post'>

<input type='submit' value='DELETE'/>

</form>

</td>

</tr>

</c:forEach>

</table>

```

        </div>
</div>
*****
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```

Case5: if the user has clicked on "EDIT", then we need to use "GetMapping with id".

LibraryController.java

```

=====
@GetMapping("/{id}")
public String showBookById(@PathVariable Integer id, Model model) {
    Book book = service.findBookById(id).orElseThrow(() -> new
    IllegalArgumentException("InvalidBook id :: " + id));
    model.addAttribute("book", book);
    return "edit-book";
}

```

=> After this control will go to "edit-book.jsp".

```

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edit-book.jsp
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<form:form method="post" modelAttribute="book" action="${book.id}/update">
    <div>
        Id: ${book.id }
    </div>
    <div>
        <form:label path="author">AUTHOR</form:label>
        <form:input path="author" type="text"/>
    </div>
    <div>
        <form:label path="name">NAME</form:label>
        <form:input path="name" type="text"/>
    </div>
    <div>
        <div>
            <input type='submit' value='Update User'>
        </div>
    </div>
</form:form>

```

=> if the user has entered the new book details and if he clicks on "Update User", it should navigate to "bookId/update".

LibraryController.java

```

=====
@PostMapping("/{id}/update")
public String updateBook(@PathVariable Integer id, Model model, @ModelAttribute
Book book) {
    service.findBookById(id).orElseThrow(() -> new
    IllegalArgumentException("Invalid book id :: " + id));
    service.saveBook(book);
    model.addAttribute("books", service.findAllBooks());
    return "books";
}

```

Finally "books.jsp" will be displaying the details of the book

```

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books.jsp

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<div>
    <h2>LIBRARY</h2>
    <br/>
    <a href='/new-book'>
        <!-- LINK FOR ADDING NEW BOOK -->
        <button type='submit'>ADD NEW BOOK</button>
    </a>
    <br/><br/>
</div>
<div>
    <div>BOOK LIST</div>
    <div>
        <table border='1'>
            <tr>
                <th>ID</th>
                <th>Author</th>
                <th>Name</th>
                <th>Operation</th>
            </tr>
            <c:forEach var="book" items="${books }">
                <tr>
                    <td>${book.id }</td>
                    <td>${book.author }</td>
                    <td>${book.name }</td>
                    <td>
                        <!-- UPDATE LINK(GetMapping) -->
                        <a href='/${book.id}'>EDIT</a>

                        <!-- DELETE BUTTON(PostMapping)-->
                        <form action = '/${book.id }/delete'
method='post'>
                            <input type='submit' value='DELETE' />
                        </form>
                    </td>
                </tr>
            </c:forEach>
        </table>
    </div>
</div>

```