

WEB PROGRAMMING PROJECT

CRUD API - Ruby On Rails

Group - 10

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[Source Code](#)

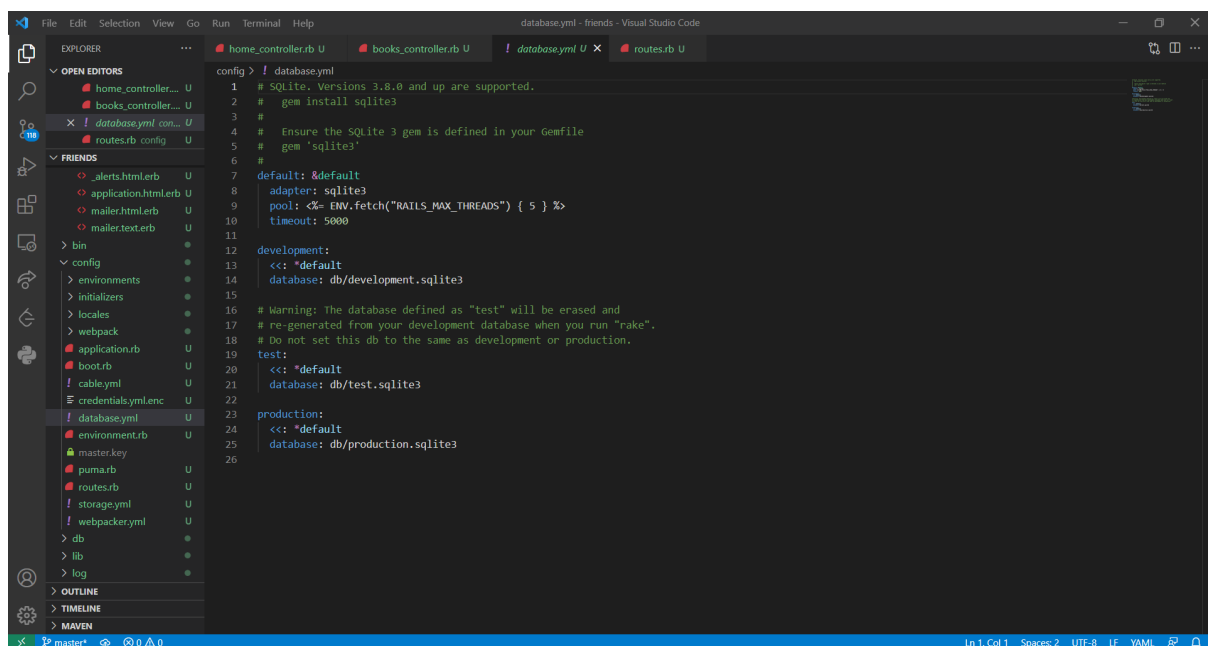
STEPS:

1. Create the application:

```
rails new books app --api  
cd FRIENDS
```

2. Setup the database: We are using sqlite3

```
gem 'sqlite3'
```



3. We use the MVC (Model View Controller) Architecture here. We create a model Book with the given attributes.

```
Book[Book_ID, Book_Title, Author, Publishers, Year]
```

PS. we will have another id element in the database. That is used to perform the CRUD operations. Book_ID is a different attribute

Run the following command to create a model:

```
rails g model Book Book_ID Book_Title Author Year Publishers
```

The following files will be created on running the command:

- a. app/models/book.rb
- b. db/migrate/[date_time]_create_books.rb

This is the final schema: (In db/schema.rb)

```
12
13 ActiveRecord::Schema.define(version: 2021_11_15_151241) do
14
15   create_table "books", force: :cascade do |t|
16     t.integer "Book_ID"
17     t.string "Book_Title"
18     t.string "Author"
19     t.string "Publishers"
20     t.integer "Year"
21     t.datetime "created_at", precision: 6, null: false
22     t.datetime "updated_at", precision: 6, null: false
23   end
24
25 end
26
```

4. Now that we created the database with appropriate columns, we migrate it to the actual database using the following command:

```
rails db:migrate
```

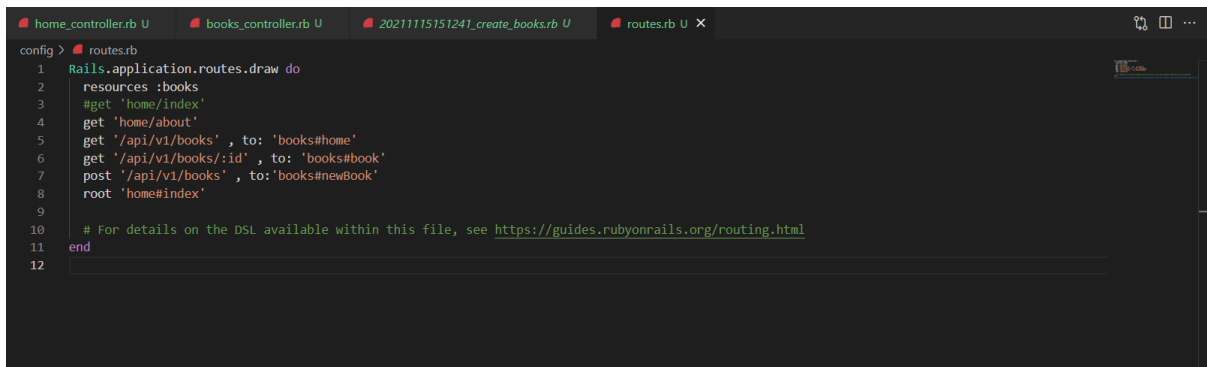
5. Make an api folder in the app/controllers folder with the following contents:

v1/books_controller.rb

```
home_controller.rb U books_controller.rb X 20211115151241_create_books.rb U routes.rb U
app > controllers > books_controller.rb
1 class BooksController < ApplicationController
2   skip_before_action :verify_authenticity_token
3   before_action :set_book, only: %i[ show edit update destroy ]
4
5   # GET /books or /books.json
6   def index
7     @books = Book.all
8   end
9   def home
10    @books = Book.all
11    render json: @books
12  end
13
14  def book
15    @book = Book.find(params[:id])
16    render json: @book
17  end
18  # GET /books/1 or /books/1.json
19  def show
20  end
21
22  def newBook
23    @book = Book.new(book_params)
24    if @book.save
25      render json: { book: @book, status: 'success' }
26    else
27      render json: { book: @book.errors, status: 'fail' }
28    end
29  end
30
31  # GET /books/new
32  def new
33    @book = Book.new
34  end
35
36  # GET /books/1/edit
37  def edit
```

```
home_controller.rb U books_controller.rb X 20211115151241_create_books.rb U routes.rb U
app > controllers > books_controller.rb
41 def create
42   @book = Book.new(book_params)
43
44   respond_to do |format|
45     if @book.save
46       format.html { redirect_to @book, notice: "Book was successfully created." }
47       format.json { render :show, status: :created, location: @book }
48     else
49       format.html { render :new, status: :unprocessable_entity }
50       format.json { render json: @book.errors, status: :unprocessable_entity }
51     end
52   end
53 end
54
55 # PATCH/PUT /books/1 or /books/1.json
56 def update
57   book = Book.find(params[:id])
58   if book.update(book_params)
59     render json: {status: 'SUCCESS', message:'Updated book', data:book},status: :ok
60   else
61     render json: {status: 'ERROR', message:'book not updated', data:book.errors},status: :unprocessable_entity
62   end
63 end
64
65 # DELETE /books/1 or /books/1.json
66 def destroy
67   book = Book.find(params[:id])
68   book.destroy
69   render json: {status: 'SUCCESS', message:'Deleted book', data:book},status: :ok
70 end
71
72 private
73 # Use callbacks to share common setup or constraints between actions.
74 def set_book
75   @book = Book.find(params[:id])
76 end
77
```

6. Edit the routes.rb file to update the versions. The versions are made to make the API more scalable, config/routes.rb



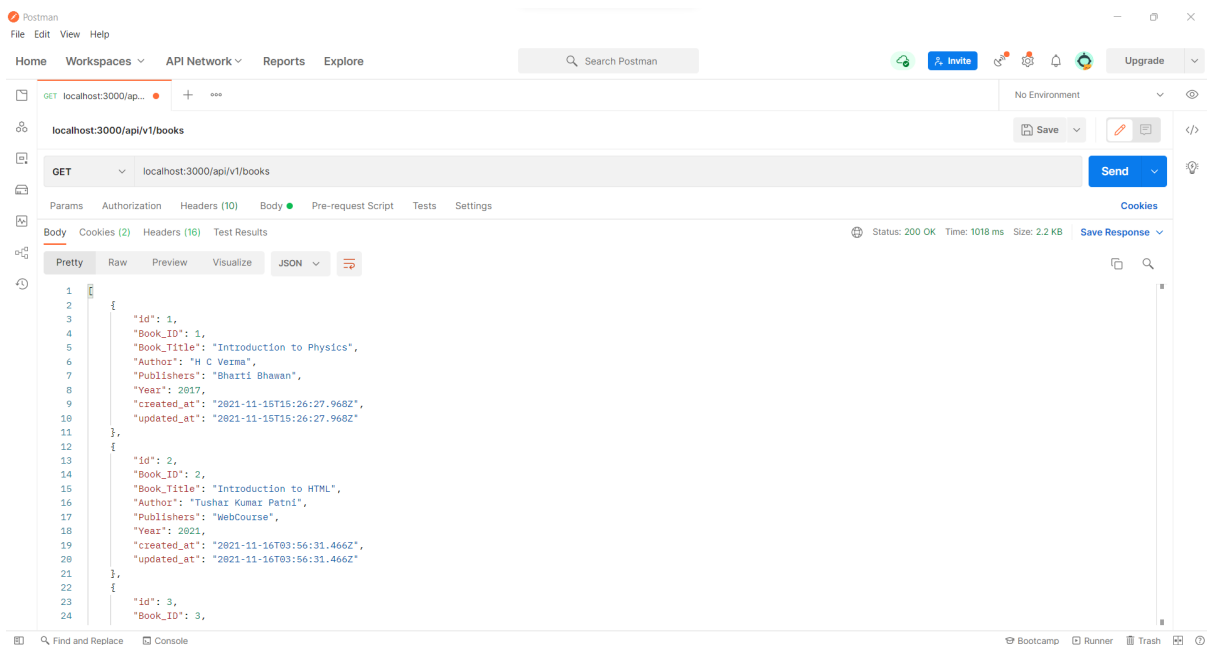
```
config/routes.rb
1 Rails.application.routes.draw do
2   resources :books
3   #get 'home/index'
4   get 'home/about'
5   get '/api/v1/books', to: 'books#home'
6   get '/api/v1/books/:id', to: 'books#book'
7   post '/api/v1/books', to: 'books#newBook'
8   root 'home#index'
9
10  # For details on the DSL available within this file, see https://guides.rubyonrails.org/routing.html
11 end
12
```

7. The API is ready. Run the app using the following command:

```
rails s
```

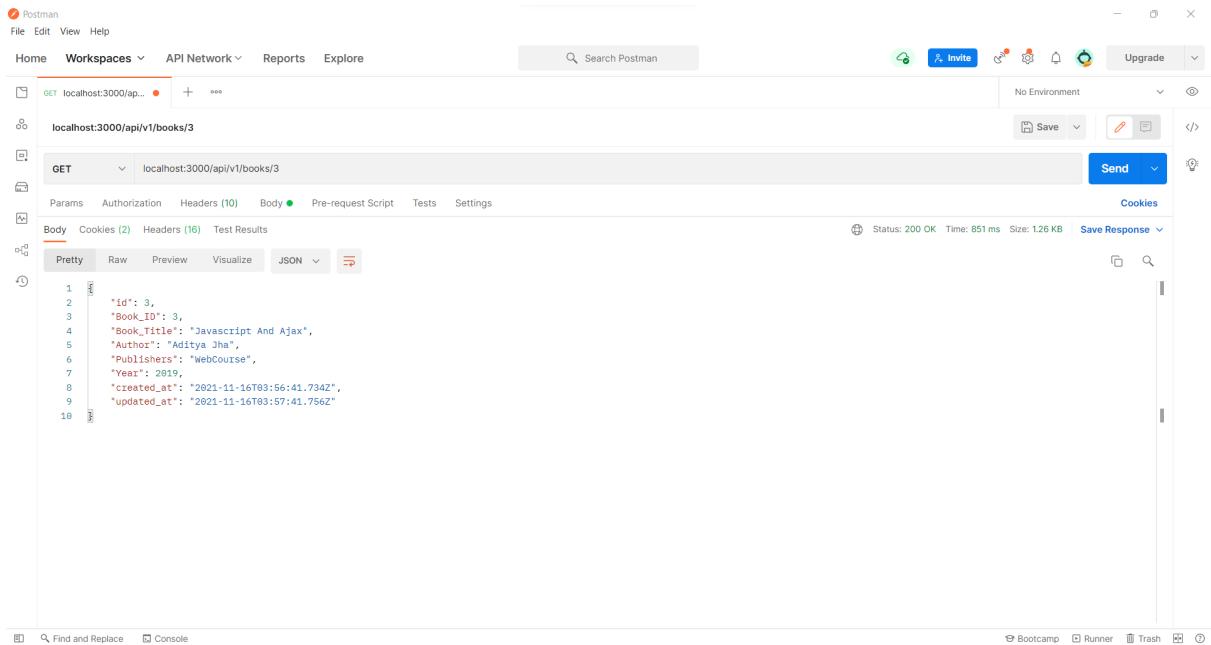
8. POSTMAN SCREENSHOTS (CRUD OPERATIONS)

1. GET ALL



```
GET localhost:3000/api/v1/books
Status: 200 OK Time: 1018 ms Size: 2.2 KB
{
  "id": 1,
  "Book_ID": 1,
  "Book_Title": "Introduction to Physics",
  "Author": "H C Verma",
  "Publishers": "Bharti Bhawan",
  "Year": 2017,
  "created_at": "2021-11-15T15:26:27.968Z",
  "updated_at": "2021-11-15T15:26:27.968Z"
},
{
  "id": 2,
  "Book_ID": 2,
  "Book_Title": "Introduction to HTML",
  "Author": "Tushar Kumar Patni",
  "Publishers": "webCourse",
  "Year": 2021,
  "created_at": "2021-11-16T03:56:31.466Z",
  "updated_at": "2021-11-16T03:56:31.466Z"
},
{
  "id": 3,
  "Book_ID": 3,
  "Book_Title": "Introduction to JavaScript",
  "Author": "Tushar Kumar Patni",
  "Publishers": "webCourse",
  "Year": 2021,
  "created_at": "2021-11-16T03:56:31.466Z",
  "updated_at": "2021-11-16T03:56:31.466Z"
}
```

2. GET BY ID

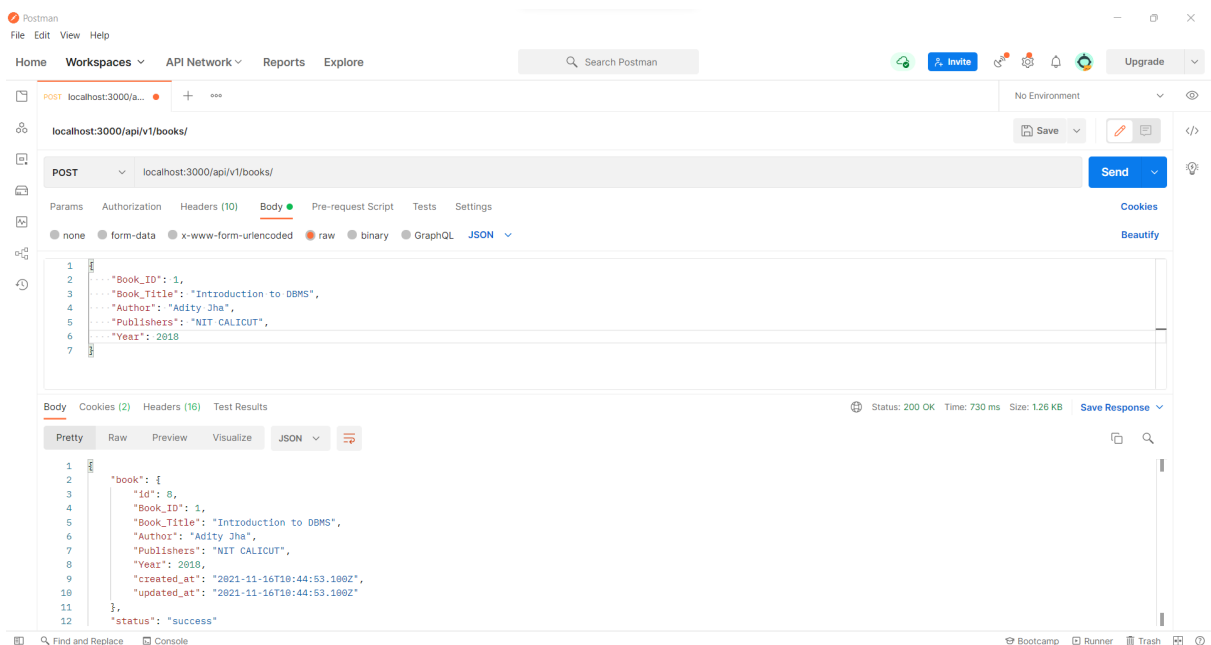


Postman interface showing a GET request to `localhost:3000/api/v1/books/3`. The response is a JSON object with the following details:

```
1 {
2   "id": 3,
3   "Book_ID": 3,
4   "Book_Title": "Javascript And Ajax",
5   "Author": "Aditya Jha",
6   "Publishers": "WebCourse",
7   "Year": 2019,
8   "created_at": "2021-11-16T03:56:41.734Z",
9   "updated_at": "2021-11-16T03:57:41.756Z"
10 }
```

Status: 200 OK Time: 851 ms Size: 1.26 KB Save Response

3. POST



Postman interface showing a POST request to `localhost:3000/api/v1/books/`. The response is a JSON object with the following details:

```
1 {
2   "book": {
3     "id": 8,
4     "Book_ID": 1,
5     "Book_Title": "Introduction to DBMS",
6     "Author": "Aditya Jha",
7     "Publishers": "NIT CALICUT",
8     "Year": 2018,
9     "created_at": "2021-11-16T10:44:53.100Z",
10    "updated_at": "2021-11-16T10:44:53.100Z"
11  },
12  "status": "success"
13 }
```

Status: 200 OK Time: 730 ms Size: 1.26 KB Save Response

4. PUT (UPDATE)

Postman interface showing a PUT request to `localhost:3000/books/3.json`. The request body is a JSON object:

```
{
  "Book_ID": 3,
  "Book_Title": "Introduction to Data Structures",
  "Author": "Tushar Kumar Patni",
  "Publishers": "NIT CALICUT",
  "Year": 2019
}
```

The response is a 200 OK status with the following JSON body:

```
{
  "status": "SUCCESS",
  "message": "Updated book",
  "data": {
    "Book_ID": 3,
    "Book_Title": "Introduction to Data Structures",
    "Author": "Tushar Kumar Patni",
    "Publishers": "NIT CALICUT",
    "Year": 2019,
    "id": 3,
    "created_at": "2021-11-16T03:56:41.734Z",
    "updated_at": "2021-11-16T18:31:27.016Z"
  }
}
```

5. DELETE

Postman interface showing a DELETE request to `localhost:3000/books/2.json`. The response is a 200 OK status with the following JSON body:

```
{
  "status": "SUCCESS",
  "message": "Deleted book",
  "data": {
    "id": 2,
    "Book_ID": 2,
    "Book_Title": "Introduction to HTML",
    "Author": "Tushar Kumar Patni",
    "Publishers": "WebCourse",
    "Year": 2021,
    "created_at": "2021-11-16T03:56:31.466Z",
    "updated_at": "2021-11-16T03:56:31.466Z"
  }
}
```

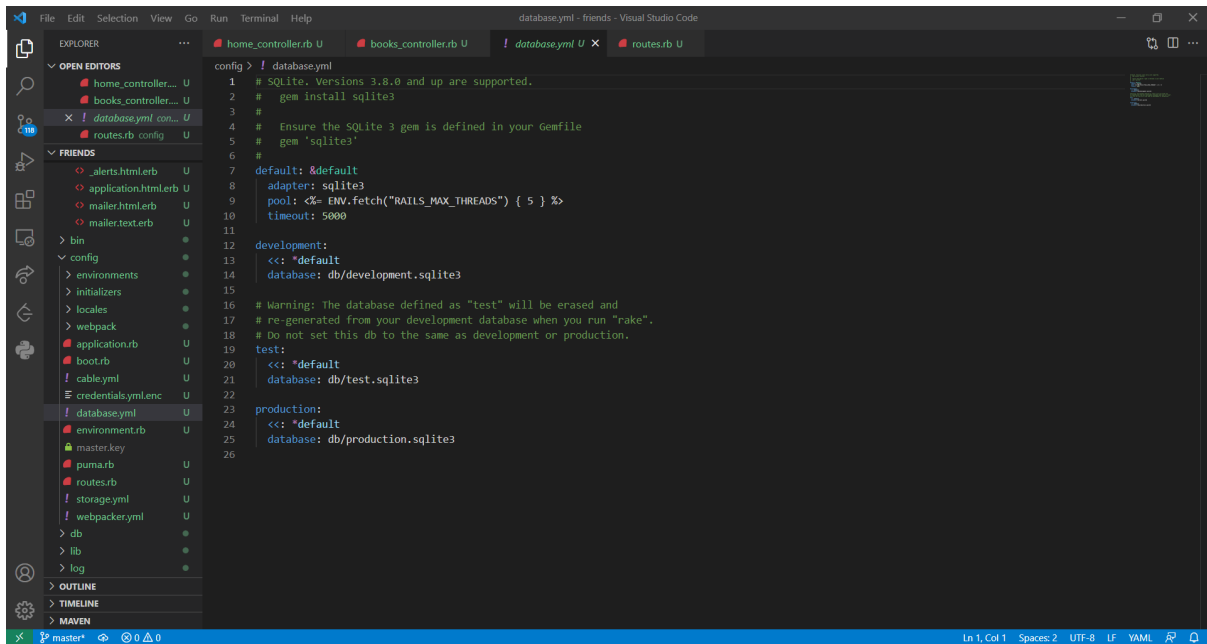
INDIVIDUAL CONTRIBUTIONS OF GROUP MEMBERS

Tushar Kumar Patni :-

Home & Book controller code function was written in this part as well as the db entities were done .

```
home_controller.rb U books_controller.rb X 20211115151241_create_books.rb U routes.rb U
app > controllers > books_controller.rb
1 class BooksController < ApplicationController
2   skip_before_action :verify_authenticity_token
3   before_action :set_book, only: %i[ show edit update destroy ]
4
5   # GET /books or /books.json
6   def index
7     @books = Book.all
8   end
9   def home
10    @books = Book.all
11    render json: @books
12  end
13
14  def book
15    @book = Book.find(params[:id])
16    render json: @book
17  end
18  # GET /books/1 or /books/1.json
19  def show
20  end
21
22  def newBook
23    @book = Book.new(book_params)
24    if @book.save
25      render json: { book: @book, status: 'success' }
26    else
27      render json: { book: @book.errors, status: 'fail' }
28    end
29  end
30
31  # GET /books/new
32  def new
33    @book = Book.new
34  end
35
36  # GET /books/1/edit
37  def edit
```

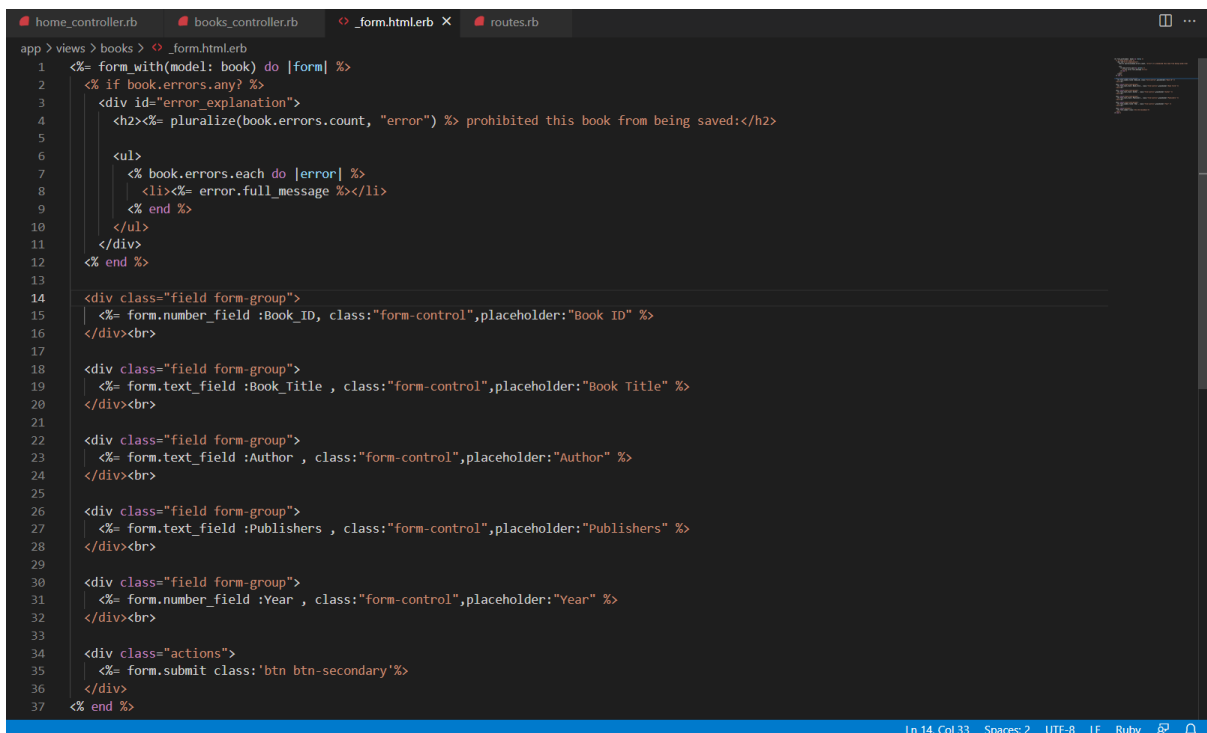
```
home_controller.rb U books_controller.rb X 20211115151241_create_books.rb U routes.rb U
app > controllers > books_controller.rb
1 class BooksController < ApplicationController
2   skip_before_action :verify_authenticity_token
3   before_action :set_book, only: %i[ show edit update destroy ]
4
5   # GET /books or /books.json
6   def index
7     @books = Book.all
8   end
9   def home
10    @books = Book.all
11    render json: @books
12  end
13
14  def book
15    @book = Book.find(params[:id])
16    render json: @book
17  end
18  # GET /books/1 or /books/1.json
19  def show
20  end
21
22  def newBook
23    @book = Book.new(book_params)
24    if @book.save
25      render json: { book: @book, status: 'success' }
26    else
27      render json: { book: @book.errors, status: 'fail' }
28    end
29  end
30
31  # GET /books/new
32  def new
33    @book = Book.new
34  end
35
36  # GET /books/1/edit
37  def edit
```



```
config > ! database.yml
1 # SQLite. Versions 3.8.0 and up are supported.
2 # gem install sqlite3
3 #
4 # Ensure the SQLite 3 gem is defined in your Gemfile
5 # gem 'sqlite3'
6 #
7 default: &default
8 adapter: sqlite3
9 pool: <%= ENV.fetch("RAILS_MAX_THREADS") { 5 } %>
10 timeout: 5000
11
12 development:
13   <<: *default
14   database: db/development.sqlite3
15
16 # Warning: The database defined as "test" will be erased and
17 # re-generated from your development database when you run "rake".
18 # Do not set this db to the same as development or production.
19 test:
20   <<: *default
21   database: db/test.sqlite3
22
23 production:
24   <<: *default
25   database: db/production.sqlite3
26
```

Aditya Jha :-

Front End of the app as well as the table modification in format was done in this part & a form for the model was made in a well manner with the help of bootstrap.



```
app > views > books > _form.html.erb
1 <%= form_with(model: book) do |form| %>
2   <% if book.errors.any? %>
3     <div id="error_explanation">
4       <h2><%= pluralize(book.errors.count, "error") %> prohibited this book from being saved:</h2>
5
6       <ul>
7         <% book.errors.each do |error| %>
8           <li><%= error.full_message %></li>
9         <% end %>
10      </ul>
11    </div>
12  <% end %>
13
14  <div class="field form-group">
15    <%= form.number_field :Book_ID, class:"form-control",placeholder:"Book ID" %>
16  </div><br>
17
18  <div class="field form-group">
19    <%= form.text_field :Book_Title , class:"form-control",placeholder:"Book Title" %>
20  </div><br>
21
22  <div class="field form-group">
23    <%= form.text_field :Author , class:"form-control",placeholder:"Author" %>
24  </div><br>
25
26  <div class="field form-group">
27    <%= form.text_field :Publishers , class:"form-control",placeholder:"Publishers" %>
28  </div><br>
29
30  <div class="field form-group">
31    <%= form.number_field :Year , class:"form-control",placeholder:"Year" %>
32  </div><br>
33
34  <div class="actions">
35    <%= form.submit class:'btn btn-secondary'%>
36  </div>
37 <% end %>
```



```
home_controller.rb books_controller.rb _form.html.erb index.html.erb X routes.rb
app > views > books > index.html.erb
1 <p id="notice"><%= notice %></p>
2
3 <h1 style="text-align:center">Books List</h1>
4
5 <table class="table table-striped table-bordered table-hover">
6   <thead class="table-dark">
7     <tr>
8       <th>Book ID</th>
9       <th>Book Title</th>
10      <th>Author</th>
11      <th>Publishers</th>
12      <th>Year</th>
13      <th colspan="3"></th>
14    </tr>
15  </thead>
16
17  <tbody>
18    <% @books.each do |book| %>
19      <tr>
20        <td><%= book.Book_ID %></td>
21        <td><%= book.Book_Title %></td>
22        <td><%= book.Author %></td>
23        <td><%= book.Publishers %></td>
24        <td><%= book.Year %></td>
25        <td><%= link_to 'Show', book %></td>
26        <td><%= link_to 'Edit', edit_book_path(book) %></td>
27        <td><%= link_to 'Destroy', book, method: :delete, data: { confirm: 'Are you sure?' } %></td>
28      </tr>
29    <% end %>
30  </tbody>
31 </table>
32
33 <br>
34
35 <%= link_to 'New Book', new_book_path, class:"btn btn-secondary" %>
36
```

Ritik Gautam :-

Ruby Installation and database installation with front-end of the header was done rest all are available i.e. was inbuilt.

```
home_controller.rb books_controller.rb _form.html.erb _header.html.erb X routes.rb
app > views > home > _header.html.erb
1 <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
2   <div class="container-fluid">
3     <%= link_to 'Book App', root_path, class:"navbar-brand" %>
4     <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarSupportedContent" aria-controls="navbarSupport
5       <span class="navbar-toggler-icon"></span>
6     </button>
7     <div class="collapse navbar-collapse" id="navbarSupportedContent">
8       <ul class="navbar-nav me-auto mb-2 mb-lg-0">
9         <li class="nav-item">
10          <%= link_to 'Show Books', books_path, class:"nav-link" %>
11        </li>
12        <li class="nav-item">
13          <%= link_to 'Add Book', new_book_path, class:"nav-link" %>
14        </li>
15        <li class="nav-item">
16          <%= link_to 'About Us', home_about_path, class:"nav-link" %>
17        </li>
18      </ul>
19      <form class="d-flex">
20        <input class="form-control me-2" type="search" placeholder="Search" aria-label="Search">
21        <button class="btn btn-outline-success" type="submit">Search</button>
22      </form>
23    </div>
24  </div>
25 </nav>
```

```
home_controller.rb books_controller.rb show.html.erb _form.html.erb routes.rb
app > views > books > show.html.erb
1 <p id="notice"><%= notice %></p>
2 <div class="jumbotron">
3   <h1 class="display-4">
4     <%= @book.Book_Title %>
5   </h1>
6   <p class="lead">
7     <%= @book.Book_ID %> |
8     <%= @book.Author %> |
9     <%= @book.Publishers %>|
10    <%= @book.Year %>
11  </p>
12  <br/>
13
14  <%= link_to 'Edit', edit_book_path(@book), class:"btn btn-secondary" %>
15
16  <%= link_to 'Delete', @book, method: :delete, data: { confirm: 'Are you sure?' }, class: "btn btn-danger" %>
17
18  <%= link_to 'Back', books_path, class:"btn btn-dark" %>
19
20
21 </div>
22
23
24
```

TOKEN OF THANKS

We would like to thank Mrs Suvidha ks for her support for doing this project.