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FSAD August 2023 Midterm Exam Instructions (16 pts)

These are the instructions for today's exam. Read them carefully, then provide the necessary evidence or answer in the space provided for each question. Deploy your code in gitlab and launch your project in the cloud or on the department server. Make sure that the url of the projects are provided accurately so that I can grade your work.

We are going to create a bookdb project which contains a book model and a reader model. A book data model contains bookname and author. A reader data model contains the readername, comments and a reference to the book model. Fig.1 and Fig. 2 are the data model for books and readers, respectively.

books	
book_id	int (PK)
bookname	string
author	string

Fig. 1 The data model for books

readers	
reader_id	int (PK)
readername	string
comments	text
book_id	int

Fig. 2 The data model for readers

Here are steps to create the project::

1. Create a Rails project called *bookdb* using the Postgresql database.

Command (1 pt):_____

rails new bookdb -d postgresql
rake db:create

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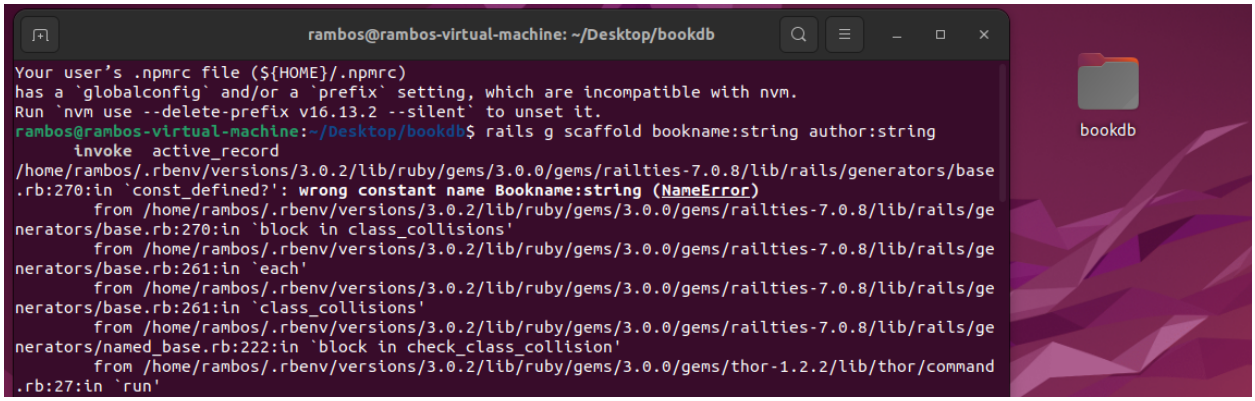

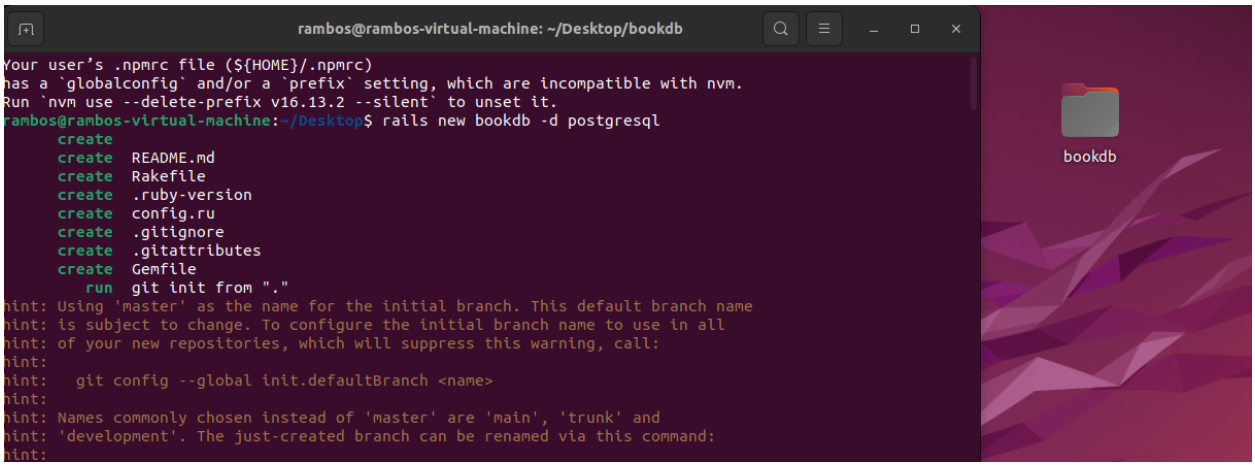

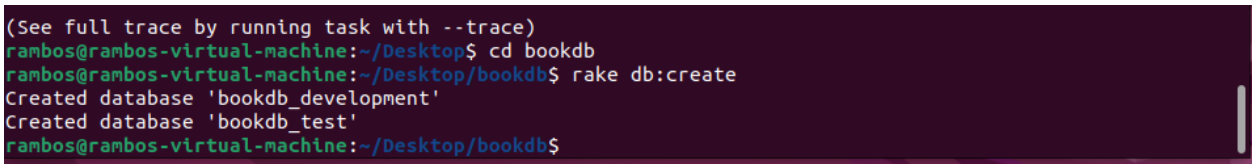

2. Create a scaffold *book* with bookname as string and author as string. (A primary is already generated by the Active Record).

Scaffold command to create book model:
Command (1 pt):_____

rails g scaffold bookname:string author:string
rake db:migrate

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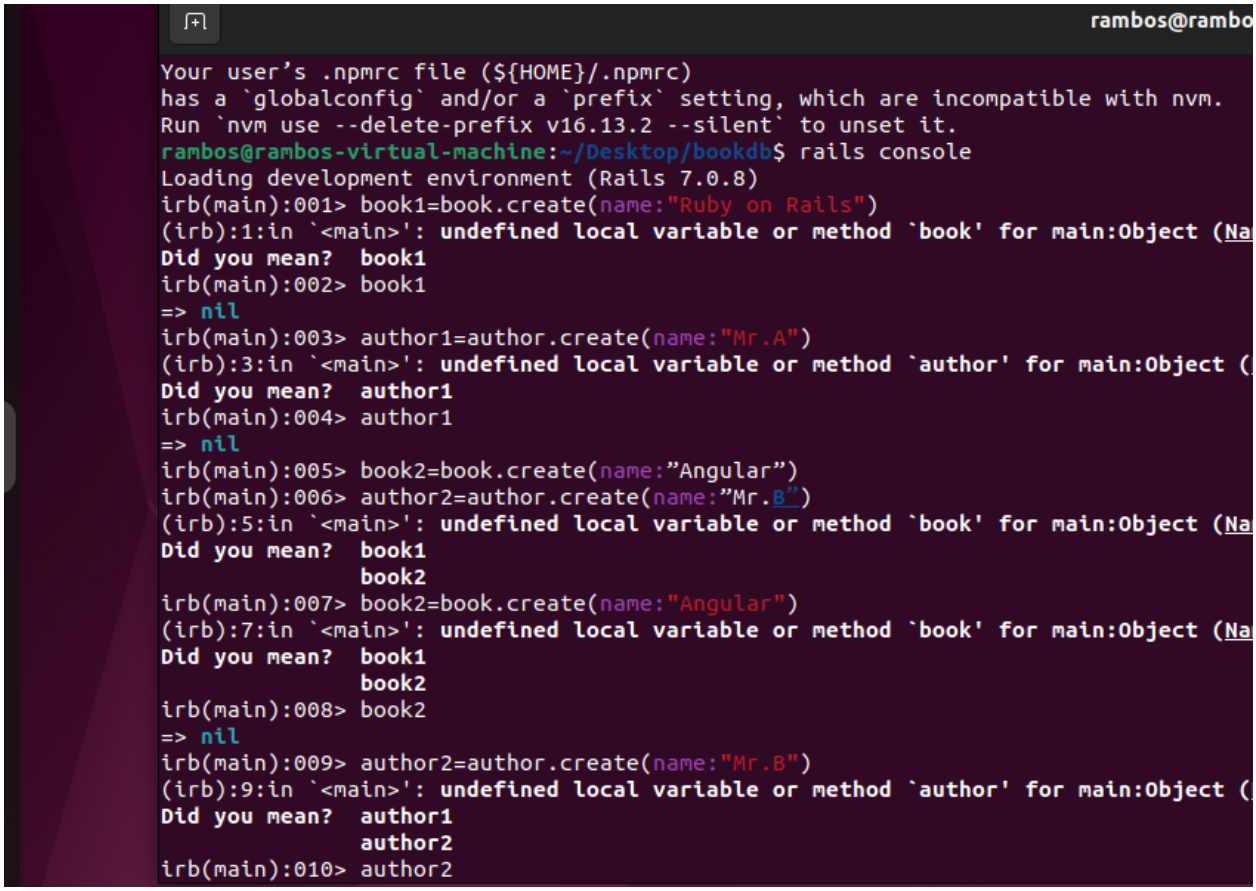
3. Launch the bookdb project. Add a new book named ‘Ruby on Rails’ with the author: ‘Mr. A’ to the project. Then, add another book named ‘Angular’ with the author:’Mr. B’ to the project. Answer the following questions (2 pts):

The url of the create page: _____

rails console
book1=book.create(name:”Rub on Rails”)
author1=author.create(name:”Mr.A”)
book2=book.create(name:”Angular”)
author2=author.create(name:”Mr.B”)

Screenshot of the create web page:



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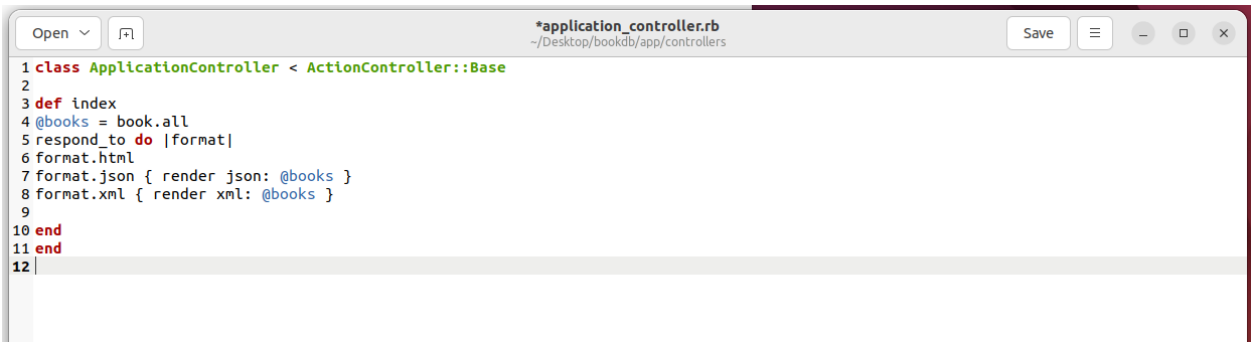
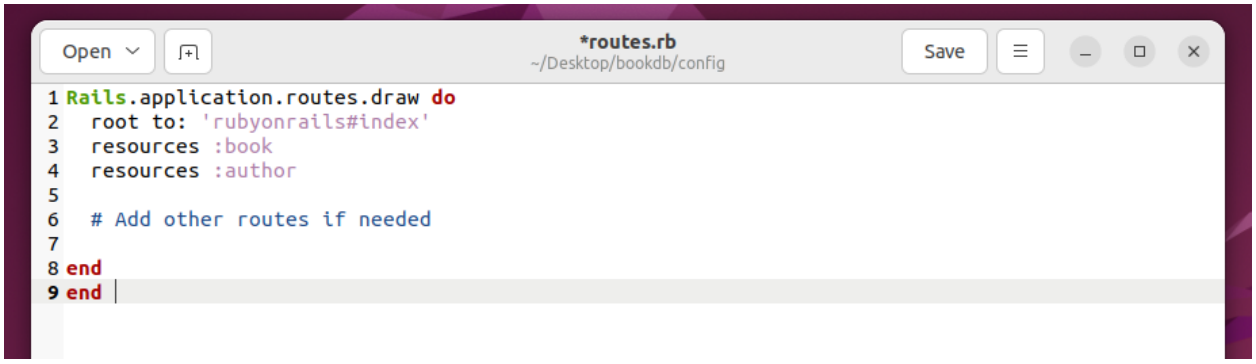
The url of the show page of bookname:'Ruby on Rails': _____
Screenshot of the show web page:
-> modify book book controller

app/controllers/projects controller.rb and alter the index action:
def index
@books = book.all
respond_to do |format|
format.html
format.json { render json: @books }
format.xml { render xml: @books }
end
end



-> Modify ruotes Config



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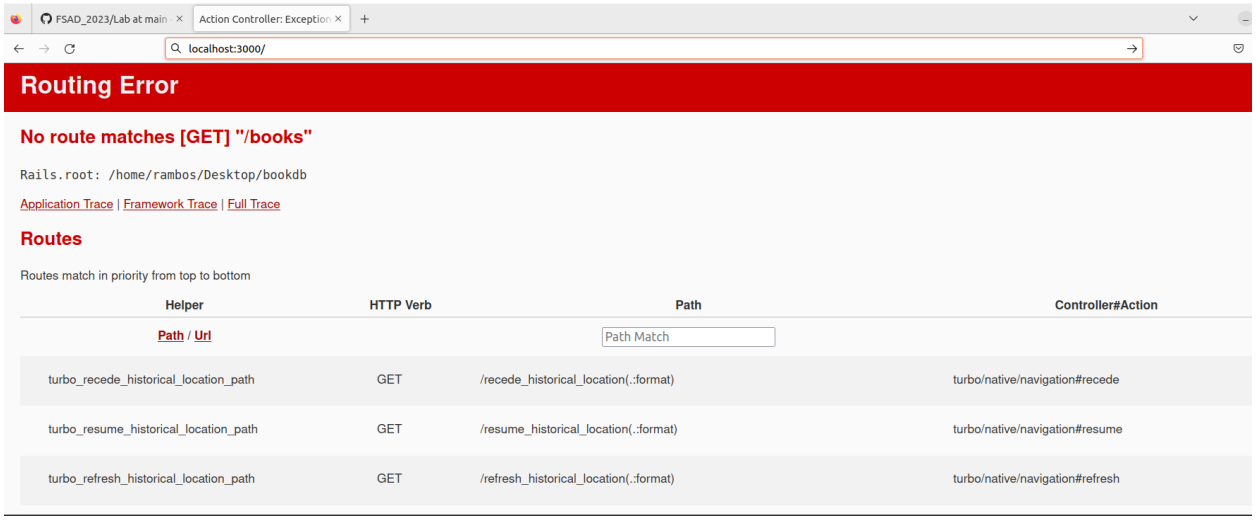
-> load: **rail server**



#I did it but I faced some problem.

4. Delete the Angular book. Capture the screenshot after the delete is done. Successfully destroyed (1 pt).

rails console
remove.book2=book(name:”Agular”)
book.all

5. What happens if you try to add another book named ‘Python’ without the author? Explain your answer with the screenshot (0.5 pt).

We can add can add book name Python without author. However in model can we can define rotation between book and author.
#add book nme python

rails console
book3=book.create(name:”python”)

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6. From Q5, how to ensure that a user must enter both bookname and author. Show your code and results. (1.5 pt)

7. Show a command that sets the default route to be the book list. Apply this command to your project. (0.5 pt)

8. Create a scaffold *reader* with readername as string, comments as text and reference to *book*. (A primary is already generated by the Active Record).

Command (0.5 pt):

rails g scaffold readername:string comment:text
rake db:migrate

9. Go to the reader page. Add a reader named 'Mr. C' and comments:'This book is great!!!' with a reference to bookname:'Ruby on Rails' (need to specify the book_id for reference). Add another reader named 'Mr. D' and comments:'I love this book.' with a reference to bookname:Angular.

Show screenshots after adding both readers (1 pt):

rails console
reader

reader1=reader.create(name:"mr.c")
book1=book.create(name:"Ruby on Rail")

10. Add a code to accept readers with at most 20 characters in comments. **Hint**: use validates with length: {maximum 20} (1 pt)

Code:

Screenshot when adding a new reader entering more than 20 characters in comments.

11. Assume that the book and the reader have one-to-many relationships (1 book with many readers). Add this relationship to the book and reader models.

Code (1 pt):

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12. Edit the book show page to display the reader's name and comments. Show the code and screenshots. (2 pts)

13. How would you write a query to retrieve all books that have been commented on by a reader named 'Mr. C'? Write the ActiveRecord query and the equivalent PSQL query. (1pt)

14. Add star based rating (1-5) for reviews of the books. Show the code and the screenshot (2 pts)
    Hint: You have to update reader model (generate migration command), update reader form and finally to display this to have update your code in reader show.

    Extra Question

15. How would you write an ActiveRecord query to retrieve all books that have received a rating of 5 stars, ordered by the number of comments they have received in descending order? (2pts)

Code:
Screenshots: