



# Senior Backend Candidate Assignment

## Introduction

Congratulations! You have made it one step closer to the opportunity to work at Mathison as a Senior Backend Engineer.

At Mathison, we believe that the interview process should be fair and reflective of the kind of projects you would be working on as a member of one of the product development teams. With that in mind, the assignment below is designed to reflect that.

## Background

One of the products that the product development teams here at Mathison have been working on, is the Knowledge Center. The Knowledge Center equips the entire team (our clients) to move from recommendation to action faster by providing tangible next steps for specific DEI goals. Here are some of the features of the Knowledge Center:

1. New Toolkits to provide case studies as well as tangible recommendations on how to reduce bias and create more inclusive hiring experiences
2. Defining DEI video to help ground the broader organization on what DEI means
3. Videos from a candidate perspective that speak to the impact of a positive and less positive hiring experience

Here is a screenshot of what the landing page for this product currently looks like:



#### Categories

Defining & Tracking DEI  
Sourcing & Attracting  
Interviewing & Engaging  
Onboarding & Advancing  
Growing DEI Leaders  
Book: Hiring for Diversity

## Featured Content



BOOK 30 MIN



### Empowering and Advancing Underrepresented Team Members

Maintaining a vibrant, productive community of people from many backgrounds requires us to create cultures that make them feel valued, nurtured and, above all, included.

Read More →

## Newly added

TOOLKIT 15 MIN



### Create an Inclusive and Accessible Interview Process

For most organizations, interviews represent the least structured and most subjective part of the hiring process.

Interviews Hiring

Read more →

HOW TO 3 MIN



### Reduce Candidate Screening Bias

When we surface biases and arrive at a deeper understanding of the damage they can do, we can actively work to change how we review resumes.

Read more →

INTERVIEW 15 MIN



### Why You Should Anonymize Your LinkedIn Profiles

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Interview Hiring Social

Read more →





## The Main Task

Your task is to build a web service that supports a SPA that would be built with ReactJS and whatever other technologies to reproduce some aspect of the Knowledge Center. Specifically, you are required to use **Rails** to:

1. Build a web service that can be accessed to manage data required by the frontend.
2. Do a domain design based on the UX design and provide documentation for it. You may use an ERD or UML for this. Your choice.
3. Design a DB schema based on your domain design from above.
4. Seed your DB tables with data found in this [figma document](#). You should be able to select a specific content and then copy the text from it.
5. Provide endpoints for fetching all the data needed for each page.
6. Design your endpoints to provide the most efficient option for fetching data for each page.
7. **Bookmarking:** you are required to implement endpoints that allow a user to click on a bookmark icon to toggle the bookmarked state of the containing piece of content. More specifically, provide endpoints that allow for bookmarking or unbookmarking a piece of content.
8. Using Postman, provide a list of requests that allows for interactions with the endpoints that you build. Feel free to use Postman collections to organize these requests.
9. Protect all of your endpoints using an access control mechanism of your choice.
10. The expected response format for each endpoint is JSON.

## What You Will Be Assessed On

The main criteria on which your work will be assessed are as follow:

1. Your ability to translate requirements in words into a finish product
2. Your ability to translate requirements from design into a finished product
3. Your grasp of OOD principles.
4. Your understanding of certain SE principles like
  - a. Separation of Concerns
  - b. The Single Responsibility Principle
5. Your coding skills:
  - a. Code structure and organization
  - b. Code quality
  - c. Code readability
6. Your grasp of the Ruby language



7. Your grasp of Rails conventions and best practices
8. API design and implementation
9. Communication

## Stretch Goals (Optional)

This section of the assignment is not mandatory. However, completing it could earn you some extra credit which could come in handy, should you fall short in other areas during the interview process. Having said that, make sure that you complete the main section before attempting this section, and **only** if you have some extra time to spare.

Feel free to choose any combination of the following:

1. **Unit Tests for models:** Add some unit tests for any models that you create using tools of your choice. For example, RSpec.
2. **Unit Tests for controllers:** Add some unit tests for any controllers that you create using tools of your choice. For example RSpec.

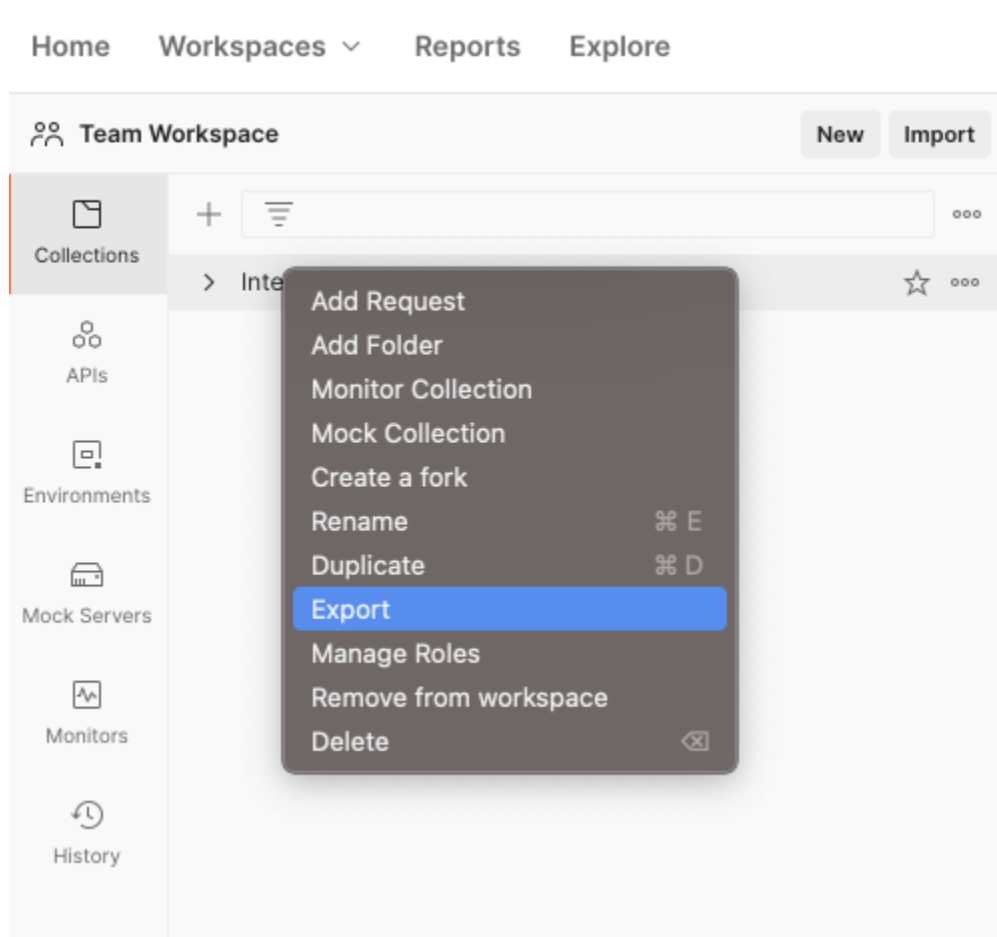
## General Instructions

1. Carefully read the information provided in the Main Task section
2. Carefully read the guideline on assessment
3. Be sure to ask questions if any of the material provided is not clear to you.
4. Get started as soon as possible so that you will have enough time to complete the main task while clearly following instructions. Then, should you have some time left over, you could use that to work on the stretch goal.
5. Make sure that whatever functionalities and features you build work and demonstrate your professionalism and appreciation for quality.



## Submission Instructions

1. Add a Readme or another form of documentation which contains instructions as to how to run your submission locally on a MacBook Pro.
2. Provide instructions on how to run any unit tests you may submit, when applicable.
3. Export your Postman requests and/or collections as JSON files to be included in the package below. Here is an example of the export functionality in action on Postman.



4. Push your completed work into a GitHub repo and share with the following emails via invitation:
  - a. [daniel.brown@mathison.io](mailto:daniel.brown@mathison.io)
  - b. [katty.polyak@mathison.io](mailto:katty.polyak@mathison.io)
  - c. [emanuel.alvarez@mathison.io](mailto:emanuel.alvarez@mathison.io)
  - d. [memo.ramirez@mathison.io](mailto:memo.ramirez@mathison.io)



e. [marcus.oliver@mathison.io](mailto:marcus.oliver@mathison.io)

## Resources

Below are resources to help you with this assignment.

### UI Design

You can find the design specially prepared for this assignment in this Figma document:

<https://www.figma.com/file/ZA0yg6N2nYGsUv34x4sFZt/Sample-design-pages?node-id=0%3A1>

### Other Pages


Included in the Figma document whose link is provided above are the following three pages:

1. The Landing page (Categories)
2. The Interviewing & Engaging page
3. The Book: Hiring for Diversity page

That leaves a number of pages which are missing from that document. For your convenience, we have collected the missing pages in the form of screenshots and are presenting them to you here in this document. You are expected to be able to interpret these screenshots and provide endpoints for accessing the requisite data just like with those found in the above Figma document.



## Defining & Tracking DEI Page

MATHISON

Categories

Defining & Tracking DEI

Sourcing & Attracting

Interviewing & Engaging

Onboarding & Advancing

Growing DEI Leaders

Book: Hiring for Diversity

Defining & Tracking DEI

Blurb goes here that introduces this section. It will be about a sentence or two of text. Something else here. Another sentence there. Just another sentence here. That should do it.

EVENT1 HR

Event 6

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. At consectetur lorem donec massa sapien faucibus et molestie ac.

Read more →

EVENT1 HR


Event 4

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Read more →



## Sourcing & Attracting Page



Categories

Defining & Tracking DEI

Sourcing & Attracting

Interviewing & Engaging

Onboarding & Advancing

Growing DEI Leaders

Book: Hiring for Diversity

### Sourcing & Attracting

Blurb goes here that introduces this section. It will be about a sentence or two of text. Something else here. Another sentence there. Just another sentence here. That should do it.

EVENT1 HR 30 MIN

#### Event 3

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Read more →

EVENT1 HR

#### How to Write Job Descriptions & Scope Job Requirements to Cast a Wider Net

Book Club Action Series: We will explore how to scope inclusive jobs and craft job descriptions and candidate communication in a way that is accessible, neutral, and inviting to all job seekers

Read more →

HOW TO3 MIN

#### Write an Inclusive Job Description

The choices you make in language, titles and job requirements have a huge impact on who feels welcome to apply.

Read more →

TOOLKIT10 MIN

#### Rethinking Your Sourcing Strategy

Savvy HR teams know they benefit from a diverse workforce. Grow your pipeline and meet those you may have overlooked.

Read more →





## Onboarding & Advancing Page



### Categories

Defining & Tracking DEI

Sourcing & Attracting

Interviewing & Engaging

Onboarding & Advancing

Growing DEI Leaders

Book: Hiring for Diversity

## Onboarding & Advancing

Blurb goes here that introduces this section. It will be about a sentence or two of text. Something else here. Another sentence there. Just another sentence here. That should do it.

EVENT

2 HR



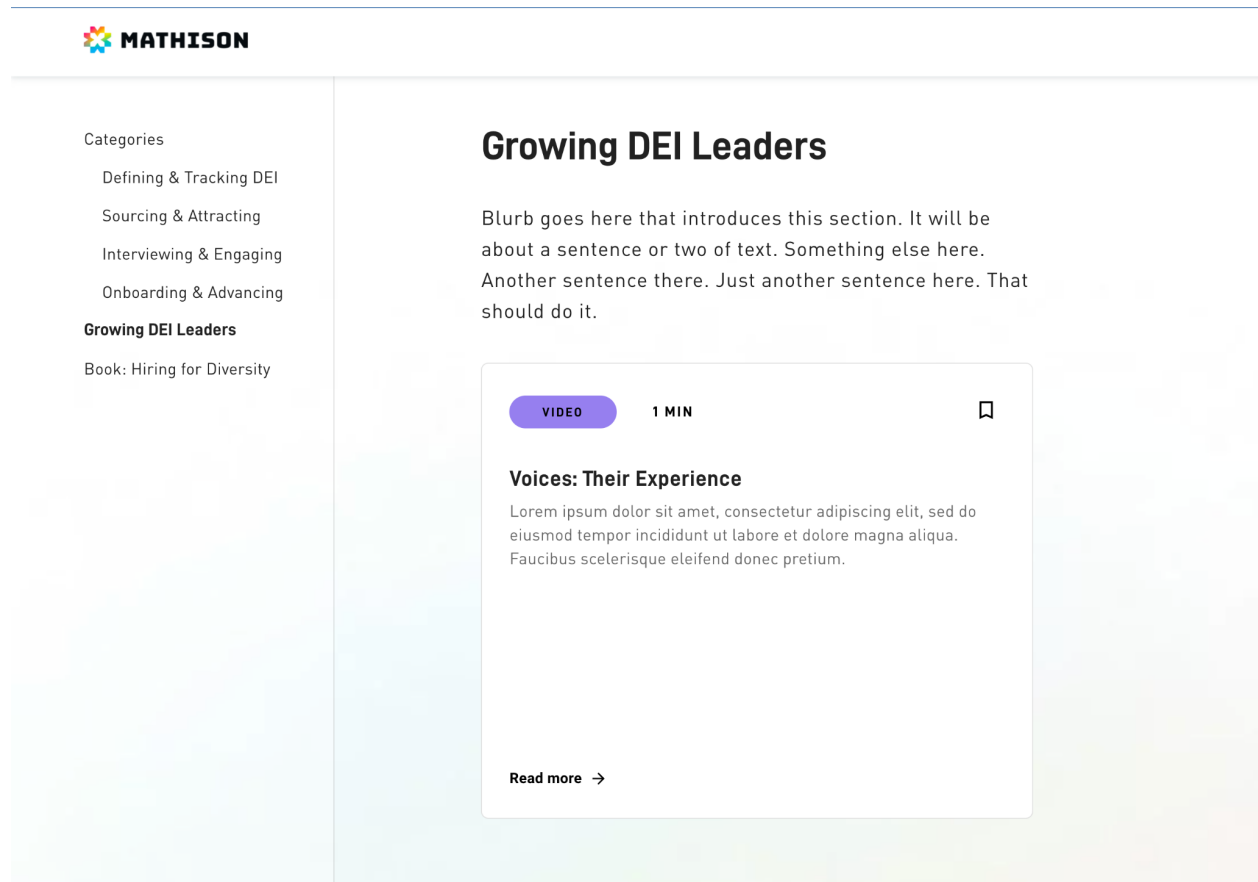
### Event 5

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. At consectetur lorem donec massa sapien faucibus et molestie ac.

Read more →



## Growing DEI Leaders Page



You now have UIs for the complete set of pages (7 total) for which you are expected to design the web service for and to provide endpoints for accessing applicable data.