**Sr. .NET Tools Engineer – Take home challenge**

We are excited to proceed to the technical portion of our hiring process. Please see the information below and let me know if you have any questions. **We expect this to take approximately 1 hour, 2 hours maximum.**  If you have any questions please reach out to John and cc’ing me at the following emails:

[johnc@kibeam.com](mailto:johnc@kibeam.com)

[deb@kibeam.com](mailto:deb@kibeam.com)

I will simultaneously work on scheduling your 45 minute Zoom technical interview to review this project with John Callaway, Principal Backend Engineer. Stay tuned for options!

**Take-Home Coding Challenge**  
**Objective**  
Build a lightweight desktop application from scratch that demonstrates your expertise in creating cross-platform applications using Avalonia (preferred), Xamarin, or .NET MAUI. The application should allow users to upload book pages and preview them, along with basic metadata entry functionality.

**Requirements**

1. **Feature Requirements**

* **File Upload:**
* Allow users to select multiple image files (e.g., .jpg, .png) representing book pages.
* **Preview Pane:**
* Display thumbnails of the uploaded images in a scrollable list.
* Highlight a selected image.
* **Metadata Input:**
  + Allow users to input metadata for the book, such as:
* Book Title
* Author
* ISBN
* **Save Functionality:**
* Save the metadata and file list to a JSON file locally.

1. **Technical Requirements**

* Use Avalonia (preferred), Xamarin, or .NET MAUI.
* Follow good software engineering practices:
* MVVM design pattern.
* Proper use of data binding.
* Separation of concerns (e.g., view models, services, etc.).
* Include clear comments and documentation for your code.
* Provide instructions for building and running the application on both Mac and Windows.

1. **Bonus Points**

* Add a button to generate thumbnails for the uploaded images (downscaling to a smaller resolution).
* Add validation for the metadata (e.g., ISBN should be a 10 or 13-digit numeric value).
* Include a progress indicator when saving data or generating thumbnails.

**Submission Guidelines**

* Provide your solution as a GitHub repository or a ZIP file.
* Include a README.md with the following:
  + Brief description of your approach.
  + Build and run instructions.
  + Any known limitations or assumptions made.