

## Welcome to the second stage of the Barbour Logic interview process!

We are excited to move forward with you in our hiring process and appreciate your interest in joining our team. This stage involves three development tasks designed to assess your technical skills, problem-solving abilities, and attention to detail. Please read the instructions in each accompanying document carefully and complete each task to the best of your ability.

### Task 1: Debugging and Refactoring

You will debug and refactor an existing C# console application to improve its functionality and code quality.

### Task 2: Library Management System Development

You will develop a simplified library management system using C#, implementing key features for book and user management, borrowing, and returning books.

### Task 3 (Optional): Pathfinding Algorithm Implementation

You will implement a pathfinding algorithm to navigate a robot through a grid with obstacles, showcasing advanced problem-solving skills.

### Note on Use of AI and Other Resources

While we encourage developers to utilise various resources available when solving programming problems, we ask that each of these assignments be your own work. The purpose of these tasks is to assess your individual capabilities and problem-solving skills.

### Submission Guidelines

1. **GitHub Repository:** Create a GitHub repository for each task and push your code there. Share the links with us.
2. **README File:** Include a README file in each repository explaining how to set up and run your application, as well as any assumptions you made.
3. **Unit Tests:** Provide instructions on how to run the unit tests.

We look forward to reviewing your submissions and continuing the conversation about how you can contribute to Barbour Logic. If you have any questions, please do not hesitate to reach out.

Best of luck!

Sincerely,

David Cardona  
Head of Technology  
Barbour Logic