

Grandjean & Braverman, Inc.

Dear Applicant,

Thank you for your interest in joining us at Grandjean & Braverman, Inc. We create custom software for our clients with an emphasis on providing maximum value. The key to doing that is understanding that we are the experts in software design and our client is the expert in their respective business domain.

The client does not care how many lines of code we write. The client does not care how clever the code is. The client does not care what programming language, web framework, or database we use. The client only cares that we **solve their problem**. We don't sell software, we sell solutions.

Many software companies are looking for "Rock Star Developers!" who write clever code to solve esoteric problems. We're not building self-driving cars, nuclear weapon guidance systems, or always-on listening devices that tell knock-knock jokes. Instead, we're solving everyday problems for everyday people. We put a premium on simple code, not clever code.

At Grandjean & Braverman, our most important programming language is English. You need to be able to communicate to our clients, to your colleagues, and to your future self. It does not matter whether a particular project is written in Python, Java, C#, or VBA; correspondence with clients, commit messages, code comments, and debugging notes are all written in plain English.

We want our developers to be able to do three things very well:

- Fully understand a problem
- Devise a solution to that problem
- Communicate that solution, both in code and to our clients

With those goals in mind, we're presenting a typical client problem for which you need to develop a solution. The problem intentionally leaves out some of the information you will need. Part of the design process is understanding what questions to ask.

Submit two documents: 1) a Q&A with the imaginary client, providing both the questions you would ask and reasonable responses; and 2) a non-technical proposal for a software solution with the client as the intended audience. The two documents should be no more than one page each.

We will use this initial submission to narrow down our field of candidates. We will ask the top candidates to submit technical details that describe how they would implement their solutions. The technical portion will require a database schema and pseudocode.

Submit all documents in PDF format to mike@grandjean.net. I wish you the best of luck.

Warm regards,



Michael Wolfe

President

Grandjean & Braverman, Inc.

MediMaint

Medical Device Servicing and Repairs

Steve is the president of MediMaint, a 15-employee company that repairs and services medical devices. MediMaint's clients include two hospitals, six nursing homes, and several dozen medical device manufacturers for which they provide warranty service.

MediMaint currently uses a paper-based system to track their work. Each serviced device gets a tracking sheet. The sheet contains the following information:

- Client name
- Received date
- Item description (model, serial #, etc.)
- Problem description
- Work performed
- Parts ordered
- Name of service technician
- Date work finished
- Name of approving supervisor
- Fee charged (broken down by parts and labor)

The nine service technicians work both at the company headquarters and remotely at client locations. The two shop foremen work mainly at the company headquarters but travel occasionally to assist service technicians at client locations.

MediMaint employs three clerks who answer phones; fill out the initial device intake sheets; fill out warranty reimbursement request sheets; provide clients with estimates for when items will be repaired; and send out invoices for finished work.

Steve wants to do more than simply automate his existing system.

The most important feature for Steve is a priority queue. Repair work is currently done on a first-come, first-served basis. Yet, several of MediMaint's warranty service contracts include bonuses for fast turnaround times and/or penalties for delays. His other contracts offer no such penalties or rewards, but he wants to maintain a maximum turnaround time of 45 days to keep those customers happy.

The shop foremen are very good at estimating how long it will take to perform a given repair. For each item, they can reliably provide the minimum, maximum, and average number of days required to make the repair. Steve would like the program to prioritize the repair list. Describe your approach in plain English for Steve. Be prepared to describe your approach in pseudocode for the technical submission.

Steve is sure there are other ways to improve MediMaint's operation. Please provide three of your own suggestions for improvement and describe how your solution would implement those ideas.