Below are the assignments that I mentioned in the call that Sidecar Engineering would like you to complete. This will help the team in understanding the way you work and also gives us an insight into your skills.

Part 1: Design Assignment

The question is "***how would you go about designing a micro-service for a simple online Pizza Order taking service***". **For this exercise, we don't expect you to write any code**.

You may outline the above architecture/drawings on a sheet of paper, and you can scan and send it to us beforehand.

You may take a top-down approach or bottoms-up approach in putting together a high-level design for a backend application stack.

For example: how your entity objects and their relationships will be modelled **vs** how the database tables and their relationships will be modelled. We have no preference on the approach you take.

Without getting into complexities, questions that you can expect would be something like this:

1. I want to order one cheese pizza with no toppings, and two veggie pizzas with A,B,C,D and E toppings etc
2. The application should remember who I am, so next time I visit the site my information is pre-populated (including the option to store my payment information)
3. Ability to email the order confirmation that contains the order details
4. Any other enhancement(s) you can think of

Part 2: Coding Assignment

Write a Spring Boot application that will demonstrate the following capabilities:

1. REST API backed by a simple JPA CRUD operations with MySQL as the underlying database
2. Spring security leveraging JWT
3. Autoconfiguration
4. Actuator capabilities
5. Logging
6. Leverage application level caching using a local Redis server
7. Swagger support for API documentation
8. Unit and integration testing with a mock framework (Mockito etc)

Feel free to integrate your design and coding submissions into one assignment. In other words, your Spring Boot application could be an implementation of your Pizza Order design.

Once completed, please commit your project to a Git repository of your choice and share the link with us. As long as the code is working, you may send us the tests in parts, and keep notifying us of updates and we will be sure to pull the latest code.

Please email me any questions you might have, and I'll be happy to clarify. Good luck!