

Dear Applicant,

Thank you for your application. As part of the interview process, we will be discussing the following scenario with you. In order to better simulate real world conditions, we are giving you the exercise in advance.

We recommend that you come prepared with the code for items 1 and 2 below - you can either email it to us ([emea.sgs.recruiting@sungard.com](mailto:emea.sgs.recruiting@sungard.com)) in advance or bring it with you. Note that if you don't have time before the interview to finish the code, we can give you time during the interview process to write the code.

Please also note that, in addition to discussing the code, we will also be discussing the design of the system – with a focus around performance, system architecture, testing approaches, and some project planning/estimation tasks. Please ensure that you come prepared to present how you would build this system, as if you were meeting with colleagues to discuss it.

## Interview Scenario - TicketMaestro

We've been asked to develop an *online ticketing system* for our new client, TicketMaestro. TicketMaestro sells tickets to a variety of events at many different venues and they want their customers to be able to purchase the tickets online.

As part of the project, we're building an external-facing website for customers and an internal website for customer support and administration. We expect there will be a number of back-end architectural components to handle the application service layer, messaging, etc.

You've been asked to develop the ***ticket reservation system***. We need a system with an API that allows other components to:

1. Allow a user to book/buy tickets for a specific set of seats
2. Allow a user to book/buy the next 'best X seats' in a section (that is, instead of specifying seats, the user just chooses a section and then the system will find the best available seats automatically)

**Before the in-person interview, please write the code for items 1 and 2.**

1. **What does the actual code look like for reserving specific seats and for reserving the best seats?**
2. **What kind of tests would you write for this code?**

For the purposes of this exercise, you should:

1. Assume the other components will be in the same process and can just call your methods directly – we are specifically interested in the actual code for reserving the seats.
2. Assume all the venues can be represented as having multiple *sections*, each of which has *rows* of *seats*. Assume all seats in a row are equally good.

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3. Choose whatever data structure you want for the section, row, seat data and assume it's set already. (That is, don't worry about how you get the seat data; just assume you have it.)
  4. Be aware that the system will be multi-threaded and there may be significant load; your design should absolutely prevent two simultaneous requests from getting the same seats
  5. Use your judgment on any other requirements that are missing.

Should you have any questions regarding the above then please send them through to [emea.sgs.recruiting@sungard.com](mailto:emea.sgs.recruiting@sungard.com)

**We wish you the very best of luck in your recruitment process,**

**SunGard Recruiting.**