Purpose

The purpose of this exercise is not to give a "gotcha" question or puzzle, but a straight-forward (albeit contrived) example of the kind of requirement that might arise in a real project so that we have shared context for a technical conversation during the interview. We are interested in how you approach a project, so you should feel free to add new class files as well modify the files that are provided as you see fit. Use of your favorite libraries or frameworks is encouraged, but not required. How you demonstrate the correctness of your implementation is up to you.

Requirements

https://github.com/QuickBase/interview-demos/tree/master/c%23

The project requirement is to aggregate data (in this case population statistics) from two disparate sources. We've provided two classes to represent those sources. SqliteDbManager.cs, provides access to a SQL database containing population data for cities. Each city is in a state within a country. You need to write a method to retrieve the total population for each country. The other class, IStatService.cs, returns a List<Tuple<String, Integer>> containing country population data. For the purposes of this exercise, we've provided a concrete class that just returns a hard-coded list, but in a real project, assume it would be calling an API.
The assignment is to implement a solution that consumes these two data sources and returns the combined list of countries and their populations. In the event of duplicate population data for a given country, the data from the sql database should be used.

Building and Running the code

This project assumes you're using Visual Studio 2013 or newer and depends on nuget. It currently does not support .Net Core or VScode. A windows dev environment is assumed.

That said, feel free to challenge any of the current limitations with your demo. Just keep the time limit in mind.

Can I modify ___?

We are interested in how you approach a project, so you should feel free to add new class files as well modify the files that are provided as you see fit.

Tests?

Yes, please add unit tests. We don't need full coverage but would love to see how you make the code more testable and the type of tests you are thinking of. Please be prepared to answer questions around testing.

- ilities?

We dont expect the project to be production-grade. If you have time, feel free to incorporate best practices in your code. Be prepared to answer questions about scale, error handling, monitoring, i8n etc.

Time Investment?

We expect the Backend Service to take ~2 Hours We expect the Front end to take ~2 hours. If you find yourself spending more time, do let us know.

Powerpoint?

Please don't prepare any PowerPoint slides. We will ask you questions from your resume and jump right into the code.

Where should I upload?

Please dont mail your solution. We would prefer if you uploaded it to a private repo and granted us permissions. Otherwise upload it to a private storage (S3, Dropbox) and give us a link.

More Questions?

Please don't hesitate to ask the hiring manager any questions you have.