Short Coding Test - Part 1

Let's say you need a sequence of numbers that can be used with LINQ for the purpose of some algorithm (e.g., 1, 2, 3,...).  You can get an enumerator that can provide a sequence of numbers with something like `Enumerable.Range(1, 100)`.

That method returns an IEnumerable that generates that sequence on-the-fly without ever actually creating a proper data structure to hold all elements of the sequence.

Now, let's say you had a dependency that required this sequence to be randomly accessed via an IList interface.  Can you implement an IList that makes random access to a just-in-time return of the value in each "element" of the list?  (so … um, ToList() is not a valid answer here)

Here's one test to help gauge your implementation success:

// Given a list of numbers ranging from 100 to 200

var list = new Listify(100, 200);

// When I access index position 50

var val = list[50];

// Then I should get back a value of 150

val.Should().Equal(150);

Short Coding Test - Part 2

Now, we need to hook up that IList interface to do something super useful via a “microservice” (#buzzwords):

1. If you don’t already have a free Azure dev account, set that up now
2. Set up a public repo on GitHub
3. Create a WebAPI project that responds to GET requests on this endpoint route: /listify
   1. Accept *begin* / *end* range parameter values, in whatever way you think is most RESTful
   2. Accept a parameter to select the *index* within that range
   3. Return the value located in that index in whatever way you think is most RESTful
4. Deploy this WebAPI endpoint into Azure

Once you have it deployed, share the working Azure link and GitHub repo link.

If you want bonus points, or just for fun, set up the GitHub webhook integration so that your endpoint auto-deploys to Azure after each commit.

<http://testmachine.westcentralus.cloudapp.azure.com/api/listify/?begin=100&end=200&index=50>

Interview Questions

Answer as many of these as you like and post them in a gist to share your responses with us to review:

1. What are examples of the types of projects you have deployed to Azure?

I have used IIS on local servers. The first thing I posted on was the coding test part 2.

1. How do you classify your senior-ness as a developer? What are your development strengths?

I have a master’s degree in computer science from UIS. The program at UIS in oriented for software development. I also have worked as a software developer for 20 years and I have learned a lot from that. I keep up with new technology and learn new things.

1. What are your top 1-2 favorite editor(s)?

Visual Studio and Eclipse.

1. Have you ever done a pull request?

No. I haven’t.

1. Have you ever had a chance to use TDD?  Have you found it to be helpful? If so, when does it work best for you?

I have used test driven development. It works best when the code is designed in a modular way so you can test it without a bunch of dependencies on code that isn’t part of the module you are testing.

1. Have you been given the opportunity to use tools like ReSharper?  What did you like about it?

I haven’t used ReSharper.

1. Do you prefer working directly with the business people? Or do you find it's best to have a go-between run interference?

I like to work with businesspeople when I understand what they are using. I have worked with different industries and when I’m new I need a go between who understands their needs.

1. Have you ever used web.config transformations?  If not, do you know what they are good for?

Web config transformations help automate the release process. It avoids releasing the wrong version.

1. Can you tell me anything about `slots` in terms of Azure?  If not, based on what you just googled, how would you use them in your next Azure project?

Based on what I googled, you can create slots for development, testing, staging, and release. I would create different server for each so, that is more efficient.

1. Have you worked with any of the cloud providers (Heroku, AWS, Azure, Google)?

I haven’t worked with cloud providers. I have worked at companies that host on their own servers.

1. Can you explain what DevOps and/or continuous integration is, and some of the benefits?

DevOps and continuous integration make integration testing easier and help ensure that the entire code branch is tested. You can also use it to deploy after it’s tested.

1. Are you technology agnostic? Or are you pretty strict when it comes to things like Mac vs Windows, or AWS vs Azure?

I am technology agnostic. Most places I have worked gives the users windows computers so, I have worked with Microsoft technology stack more than others.

1. What are some of your more advanced SQL querying abilities (i.e., like what keywords or commands, etc)?

I have been using SQL for a long time and have learned a lot about SQL and optimizing queries.

1. Do you happen to know what TypeScript is and why it’s gotten so popular?  How does it differ from JS?

TypeScript has type checking and JavaScript doesn’t. Typescript has a lot of features that JavaScript doesn’t.

1. How comfortable are you in working a project that involves touching some CSS and HTML?

I am very comfortable working with CSS and HTML.

1. Can you explain the diff b/t relational databases and NoSQL? What are some NoSQL platforms that you have familiarity with?

I have never used NoSQL. NoSQL is good for really large datasets and doesn’t have limitations that relational databases have.

1. Can you explain GPG, SSL or public/private key encryption?

SSL uses certificates to verify the user or machine. Public private key encryption allows the encryption of messages that only allows a single user to unencrypt. I haven’t used GPG , but now that I know about it I will.

1. Do you know anything about "secure coding" practices?

Yes. The OWASP guidelines describe secure codding practice as Input Validation

Output Encoding

Authentication and Password Management (includes secure handling of credentials by external services/scripts)

Session Management

Access Control

Cryptographic Practices

Error Handling and Logging

Data Protection

Communication Security

System Configuration

Database Security

File Management

Memory Management

General Coding Practices

1. Can \_you\_ authenticate to GitHub using SSH?

Yes.

1. Can you explain what REST sorta kinda means?

REST is a description of architectural style for creating stateless web servers.

1. How enthusiastic would you be if we asked to pay you to take some training courses on Udemy?

Very enthusiastic. I would like to do that.

1. How many of these platforms / languages / frameworks do you have experience with?

Node Typescript Angular / React / Vue Spark Hadoop SQL Excel Python Pandas R Linux Mac Windows Jasmine Docker Kubernetes .NET C# NUnit Go PostgreSQL MySQL SQL Server bash shell scripts PowerShell MongoDB Azure AWS Google Cloud Platform

SQL, Excel, Linux, Mac, Windows, .NET, C#, Nunit, MySQL bash shell scripts. I have played with Azure, but I have never used it in production.