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CISC 3140

Assignment 3

I choose an Amazon. The company are looking for motivated software engineers to build web applications and services as developers with skills from HTML5/JavaScript on the UI to Java for middle tier services. The Engineer should comfortable developing in both web browser-based UI and server environments.

Amazon as a Google have 3 stage interview and a lot of requirements.

Software Engineer position requires:

* Programming experience with at least one modern language such as Java, C++, or C# including object-oriented design.
* JavaScript, HTML5, CSS, React.js
* SQL or NoSQL experience, MongoDB,
* Experience using Amazon Web Services (EC2, S3, Dynamo)
* Experience contributing to the architecture and design (architecture, design patterns, reliability and scaling) of new and current systems.
* Knowledge of CS fundamentals including data structures, algorithms, Object Oriented design
* Automated testing
* Bachelor’s Degree in computer science or a related discipline

I have some experience in Java (Swing, JavaFX), C++ and Java Script where was involved in building Static and Dynamic websites where using HTML5, CSS3, Less, Sass, Ajax, Json, APIs, jQuery, PHP, MySQL etc. and projects in single page apps where using React.JS, also Android Studio. But is not enough knowledge for Software Engineer position.

My plan to prepare for interview

1. I choose time limits that’s must prepare for interview (month or year).
2. Second, I need some ingredients (Favorite algorithms book, Whiteboard), at least 1 years coding experience, college degree in Computer science.
3. They ASK knowledge in Data Structure and algorithms.

a)I need make a study list: Memorizing two good sorting algorithms and [their Big-O](http://bigocheatsheet.com/)

Memorizing binary search

Memorizing how to implement basic data structures such as hashmap, linked list, stack, queue, and trees ( heap) and [their Big-O complexities](http://bigocheatsheet.com/)

Memorizing graph traversal algorithms (BFS, DFS, and a shortest path algorithm like Dijkstra's)

Memorizing powers of 2

Practice bit manipulation exercises (working with bit maps, bit shifting)

Object-Oriented Programming terminology (abstraction, inheritance, cohesion, coupling)

Know the collections and math APIs for your given programming language

[Recursion, backtracking, and memoization](http://loveforprogramming.quora.com/Backtracking-Memoization-Dynamic-Programming)

Review principles of basic discrete mathematics and statistics

b**) Practice algorithms and data structures daily.** Write down the worst case Big-O time and space complexities for the algorithm. Always check your work, always!

4. Take a full course in C++ or Java, from Beginner to advance (OOP, Template library, bitmaps etc.) Practice coding can increase your coding skills. Once you have understood the basics, the best thing to do is to brush up your skills with regular practice.

5. Take online course or book for study at least one framework as spring or hibernate (Java)

6. HTML5, CSS: practice best solution, create 3-4 responsible web sites using 3 different CSS technology Flexbox, Grid, Float, also use preprocessors as Less and Sass, creating an actual landing page or website is something different. At some point, you will eventually start using JavaScript snippets. After taking full JavaScript course from many versions of ECMAScripts (JS ES6 -ES8). Then can start learning React JS, and server side NodeJS. Also make sure to become an expert at [Git](http://git-scm.com/). Get involved with open source projects.

7. SQL or NoSQL experience, MongoDB can start learning to create real projects (To Do List etc.) learning the SQL basic could take as little as two weeks, for start should to know how to manipulate data and build queries that communicate with more than one table.

For NoSQL Buy a book. Or watch videos on YouTube. Get some background information first. After that you need to get some basic practice. For this, it depends on what you want to learn. If working as a developer and just want to use a NOSQL system like MongoDB in your application, then all you need to do is to learn the development.

7. Experience using Amazon Web Services (EC2, S3, Dynamo) easiest way taking some courses from AWS or cheapest ways in Udemy. For study you need general knowledge of database technology, programming, Java or Java-like programming languages, and querying languages.

Consistency is the key virtue to embody when preparing for the Amazon Interview. I think need spending most of your time on the most important and most likely material to appear in the Amazon Interview.

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