**Xandr End-User Services**

**Questionnaire and Programming Challenge**

• **Python**

o What does if \_\_name\_\_=='\_\_main\_\_' do?

o What's the difference between passing by value or and passing by reference?

**Variables can be passed to the functions. Pass by value creates the copy of the variable in the memory and the new value will be passed to the function. Where are Pass by reference passes the memory location of the variable to the function. Any changes happening to the variable will change the original value in pass by reference where as in pass by value changes to the value will not affect the original variable.**

o What's the difference between a Python Class and a Python Module?

• **JavaScript**

o What's the difference between a callback and a closure?

o What the difference between the DOM and JQuery?

o Name two JavaScript frameworks and the benefits/drawbacks they have

**React and Angular are two of the most popular frameworks in Javascript. Each has its own benefits and drawbacks, React is easier to learn for those experienced Javascript developers than angular. Angular has stronger support than react as it has good documentation of every module because of large number of people use Angular. React uses JSX or TSX which embeds the html in Javascript where in angular uses both Javascript and Typescript.**

• **Software Development**

o What's the difference between a git branch and a git fork?

o What's the difference between 'lazy' and 'greedy' matching in regular

expressions?

o What's the difference between refactoring code and reformatting code?

**Reformat and Refactor should not add any new business logic/features.**

**Reformatting usually means fixing the long lines, removing whitespaces, adjusting indentation etc.,**

**Refactoring means changing the function such as splitting into smaller functions, simplifying the code, improve the code quality, removing or introducing new variables etc.,**

• **Infrastructure**

o What's the difference between a DNS A record and a DNS CNAME?

o What's the difference between a database table and database view?

**Table consists of rows and columns to store the data. Views are virtual tables which are made from SQL statements.**

o What's the difference between a Docker image and a Docker Container?

• **Authentication and Authorization**

o What's the difference between authentication and authorization?

**Authentication validates the user who they claim to be by using passwords, one-time-passwords, etc.,**

**Authorization gives permission to users by giving them or restricting the access to certain resources.**

o What's the difference between AD (Active Directory) and LDAP?

o What's the difference between an SSL certificate and a Signing Certificate?

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**Part 2: Experience questions (just check the ones that are true)**

• Have you ever worked in IT for a company with more than 10,000 employees? **True**

• Have you ever worked in IT for a tech startup?

• Have you ever worked in IT Operations?

• Have you ever taught or mentored a less-experienced software developer? **True**

• Have you worked with unit-tests, TDD, test harnesses, or QA testers? **True**

• Have you ever written something that's in production that needed to run as the root user? **True**

• Have you ever written code in a scripting language that made SQL queries to a database? **True**

• Have you ever written anything with SCIM or had to deal with SAML2 or OIDC?

• Have you ever debugged code using Chrome DevTools, FireFox Developer tools, or

Postman? **True**

• Have you ever written or extended an API? **True**

**Part 3: Philosophy and Methodology - short answer (2-3 sentences) - Pick *one***

• What are the benefits of using a container such as Docker? When would you *not* want to

use docker containers?

• What are some shortcomings and advantages to writing a shell script rather than a Python

or Javascript script?

• Under what circumstances would you hardcode a value in code rather than have it in a

configuration file, database, or under source code control?

• If you inherit a somewhat large codebase and find that it has a confusing or inconsistent

naming scheme, what would you do?

**For any large codebase, I start by identifying the entrypoints to the particular module in the codebase and then start the debugging process to identify the flow of the application and create the flow diagram. This will help me in identifying what business processes are involved and understand the code base much better.**

• For Linux command-line arguments, do you prefer the succinctness of "command -v -f

foo.txt" style or the human readability of "command --verbose --file foo.txt"? Why?

• If you were given a large legacy monolithic codebase, how would approach making it

better?

**Bonus Question: Naming**

• What's the highest-scoped thing that you named as an employee or consultant?

( think of naming a variable to be the smallest thing and naming a company the largest.

Naming a server, application, or Python module is somewhere in between)

**I’ve named some of the internal business processes API’s such as Competitor data API, Avis Rental Reporting API which serves the API endpoints for getting rental data for reporting purposes.**