Intuit Interview (SDE1 + Internship)

General:
- [Intuit Interview Questions - GeeksforGeeks](#)

Computer fundamentals:

- ☐ Then, he told me to give some inputs on how would I design the computer player of games like tic tac toe, chess, etc.
- ☐ He asked me the difference in inheritance between java and C++.
- ☐ Compare sql and no sql: when to choose which database
- ☐ What is multithreading and how to avoid multi-threads to access a resource at a time? (https://www.geeksforgeeks.org/synchronized-in-java/)
- ☐ What is Regex? How to efficiently find all the data (documents) in the database that don't match the given Regex ?.
- ☐ What are the benefits of using Mongo DB and Firebase as databases (I told them that I have used Firebase and Firestore)?
- ☐ How to avoid compiler to do optimization for some certain resource. (https://www.geeksforgeeks.org/understanding-volatile-qualifier-in-c/)
- ☐ What are some of the disadvantages of using OOPs?
- ☐ OOPs – Polymorphism and its categories with examples.
- ☐ OS – Difference between deadlock and starvation, how to detect and prevent them.
- ☐ DBMS – Normalisation and why is it useful.
- ☐ DBMS – Functional dependency, explain with an example.
- ☐ There are two processes P1 and P2. P1 is running on a router and P2 on a server. P1 writes into a queue and P2 reads from the queue only after a certain amount of data is written by P1. In this scenario of 2 processes, how will you achieve synchronization between these two processes?
- ☐ Question 5: What is Polymorphism?
- ☐ Question 6: What is Paging?
- ☐ Question 7: What is Indexing & Normalisation?
- ☐ What is Indexing and explain its types?
- ☐ What is Normalization and explain different types of normalization?
- ☐ Questions on SQL Queries
- ☐ What is the difference between multithreading & multiprocessing
- ☐ What is Virtual Memory
- ☐ What are internal & external fragmentation
- ☐ What is Thrashing
- ☐ What is Paging & Segmentation
- ☐ Detailed Discussion on Memory Management
- ☐ Questions about Virtual Functions and was also asked to code it.
- ☐ Detailed Discussion on Polymorphism
- ☐ Operator Overloading
- ☐ Difference between method overloading and method overriding?
- ☐ About constructors?
- ☐ What are multiple inheritance and multi-level inheritance?
- ☐ What is a database and database management system and why it is preferred over traditional file management systems? I was knowing the answer very well and explained it very clearly.
- ☐ In the second question, I was supposed to write the SQL query as per the conditions given by the interviewer. In this, I was supposed to write the query in the editor (the editors link was previously

- [ ] given by them in the mail). For this question, I was able to give two methods one by writing from scratch and the other by using prebuilt functions.
- [ ] The third question I was asked was based on the OOPs concept. I was asked about the pillars of OOPs. After this, I was asked to explain polymorphism and its types with some examples.
- [ ] The fourth question was about the difference between function overloading and overriding.
- [ ] The last question was based on OS i.e. Explain the threading concept in OS
- [ ] the distinction between cookies and cache
- [ ] how an HTTP request is handled
- [ ] about the ACID properties
- [ ] differences between NoSQL and SQL databases.
- [ ] So they asked me how does it use multithreading exactly. What will happen if multiple clients try to connect with the server at once? Will the requests be dropped ? and if not then how will server handle multiple requests concurrently ?
- [ ] After that, they started asking me how processes work when a system gets booted, and what is the chrome which is opened in your system and what are the tabs, as in are they processes or threads? and then there was a timer going on in the glider (assessment tool), so they asked whether it is a thread or process?
- [ ] Then, they said how will you make this application a multiserver multiclient? I answered that I will create a table. Then the follow up questions were like what will be the fields in the table ? What will be the primary key in this table? What if I want to save mobile number for clients and one client might have more than one mobile numbers? I answered that I will create another table for that. Then they asked that what will be the primary key in this table ? and asked me to write a SQL query to find the name of a client given the mobile.
- [ ] OS related concepts like IPC messaging, threads, system calls, did pair programming on OS concepts.
- [ ] What happens when you type google.com in your browser?
- [ ] There is a large system, and you get logs about memory leaks; how would you fix it?

DSA: medium level dsa questions. *(DFS and bfs is commonly asked)*

- [ ] Practice | GeeksforGeeks | A computer science portal for geeks
- [ ] Name some sorting algorithms. What is merge sort?
- [ ] Whether linked list is palindrome. https://leetcode.com/problems/palindrome-linked-list/
- [ ] Write a function that takes a big message and splits it into minimum number of smaller messages adhering to given limit. While splitting the function should not split a word into two messages. The total length of every splitted string should not exceed the MaxLen
- [ ] Min Steps in Infinite Grid | Interviewbit
- [ ] Related to pointers (mainly pointer pointing to a 2D array) and address (in-depth)(https://www.geeksforgeeks.org/pointer-array-array-pointer/)
- [ ] https://www.geeksforgeeks.org/problems/first-and-last-occurrences-of-x3116/1
- [ ] Find all the triplets: https://www.geeksforgeeks.org/problems/find-triplets-with-zero-sum/1
- [ ] O(n) time and O(1) space without changing the relative position of elements. (https://www.geeksforgeeks.org/rearrange-array-alternating-positive-negative-items-o1-extra-space/)
  Practice Link: https://www.geeksforgeeks.org/problems/array-of-alternate-ve-and-ve-nos1401/1
- [ ] https://www.geeksforgeeks.org/problems/print-anagrams-together/1
- [ ] DSA – Insertion, deletion, and updation time complexity in unordered_map and ordered_map and the reason why is it so.
- [ ] DSA – 1st question was the Next Permutation problem.

- [ ] Given a tree, give the sequence of nodes in which they will get burnt given the starting node from where the burning starts. In 1 unit of time, all the neighbors of a burnt node will also get burnt. The solution was a simple BFS approach.
- [ ] (https://www.geeksforgeeks.org/problems/length-of-largest-region-of-1s-1587115620/1)
- [ ] Question 2: Follow Up problem (Making A Large Island - LeetCode) and was asked to code the same
- [ ] Question 3: A linked list is provided and you need to reverse only the nodes present at odd positions. The interviewer further asked if this could be done by using constant extra space and coding the same.
- [ ] Implement Heap and Heapify
- [ ] Question similar to (https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/)
- [ ] Question on Topological Sorting
- [ ] What is the difference between a list and a vector?
- [ ] When to use a list and when to use a vector?
- [ ] Complexity for insertion in list and vector.
- [ ] The time complexity for searching an element in a Binary tree.
- [ ] Worst case time complexity for searching element in BST.
- [ ] How to convert BT to BST?
- [ ] Given an array arr[] and an integer K, the task is to find the maximize the sum of K elements in the Array by taking only corner elements.
- [ ] to tell in how many steps we can climb a stair if we can take 1 or 2 steps at a time, I explained an approach using recursion and then another with dp, then he asked me if there exists an alternate algorithm with lesser time complexity and I came up with an approach of $O(1)$, then he seemed satisfied.
- [ ] Given a string n containing digits only and an integer k, I had to remove k digits from string n such that the number becomes the largest possible number after removing k digits.
- [ ] Merge overlapping intervals, only the logic was required
- [ ] Reverse alternate K nodes in a Singly Linked List

Projects: Try to spend more time in explaining your projects

- [ ] APIs, logic, database normalisation
- [ ] What approach and why
- [ ] Difficulty faced
- [ ] Detailed discussion on projects like stacks and technologies used, the problem faced, how did you manage to make your app efficient, database structure and schemas, functional and non-functional requirements, security, scalability
- [ ] How did you test your application? How have you applied unit testing to it?
- [ ] How did you optimize your React Application? (My answer was: using Lazy loading, dividing into modules, optimizing webpack, etc).
- [ ] Question on how Encryption is different than Hashing? (https://www.geeksforgeeks.org/difference-between-hashing-and-encryption/)
- [ ] What are the problems faced by React? (https://www.growth-rocket.com/blog/a-closer-look-at-client-side-server-side-rendering/)
- [ ] How can you store user passwords in your application in a database or is it a good idea to save a user's password?
- [ ] Why did I choose to use NoSQL Database like Firebase over SQL database? What's the problem with the SQL database?
- [ ] Write a react component that consists of a button clicking which increments the counter.
- [ ] What is a useState hook in React?

☐ Project discussion was in depth: asked how I implemented that feature, any alternative way if doing that. How backend is working and all.

HR(general-like any other):

- Why Intuit?
- What is the most challenging thing you have done?
- Where do you see yourself in five years?