Interview Questions

* Explain to me what is volatile variable why do we need this ?   [Answer Question](https://www.glassdoor.com/Interview/Explain-to-me-what-is-volatile-variable-why-do-we-need-this-QTN_2190922.htm)
* Tell about a lock free algorithm that you know.   [Answer Question](https://www.glassdoor.com/Interview/Tell-about-a-lock-free-algorithm-that-you-know-QTN_2190923.htm)
* We wrote an interface and asked me to implement the interface which will take a lock and release a lock.   [Answer Question](https://www.glassdoor.com/Interview/We-wrote-an-interface-and-asked-me-to-implement-the-interface-which-will-take-a-lock-and-release-a-lock-QTN_2190924.htm)
* He asked to implement the concurrent hashmap in java.   [Answer Question](https://www.glassdoor.com/Interview/He-asked-to-implement-the-concurrent-hashmap-in-java-QTN_2190925.htm)
* He asked whether I have heard of heap data structure and what is it used for ?

Written 10 analytical and 10 java, 1.30 hour technical interview , basic java questions, try and catch, finally, exceptions, string reversal, difficult interview, they had taken 1.30 hour technical interview

Interview Questions

* 1.SQL query statements  
  2. Output of code snippets  
  3. Heaps

Interview Questions

* 1st Round: Java, Algorithm, Javascript  
  Implementation of array list program, number reverse with recursion, string algorithm, multithreading java programs, javascript questions  
    
  2nd Round: Data Structure, Algorithm  
  linked list problem, producer-consumer problem  
    
  3rd Round: Data Structure, Algorithm, Problem Solving, Design Pattern, System Design  
  two BST and one stack question, strategy pattern problem solving, adapter strategy problem solving, command pattern problem solving

R.1:  
Find loop and remove it, in a linklist  
Implement queue using stack  
Sort a stack with constant space  
Spiral order traversal of a N-ary tree  
  
R2:  
Quick sort discussion in detail  
Deletion in BST  
Find max subsum integer array  
Find non repeating character from stream of characters  
Implement Strategy Pattern  
  
R3: Managerial Round  
Implement thread safe Stack using Linklist  
Implement Synchronization among N threads  
Java Memory model  
Garbage collection algo/ Types of garbage collectors  
How to deep clone a very large object ?  
How JVM works ?  
Detail discussion on threads - How to stop thread,Thread interrupts , Greedy threads , Thread problems , CAS algo  
Concurrent Modification Exception - Fail safe / Failfast  
  
R4: Director round  
1.How would you design phone dictionary ? Which data structure you will use and why?Optimization of the approach further. (Used Trie structure then optimized with Suffix trees)  
2. Edit distance Algorithm  
Managerial Question  
  
R5: VP round  
1 puzzle  
How we should decide - when we are going to create a class/ method / Constructor overloading.  
Discussed about my educational background, what subjects i have studied.  
How i can relate my subjects with Software engineering.  
Why S/W AG?  
  
R6: HR round  
Just for formality. Notice period & Offer discussion

LRU Cache Implemenation, Binary Search Tree (Level Order Traversal), BST (Zig Zag traversal)

**P**[**rincipal Engineer Interview**](https://www.glassdoor.com/Interview/Software-AG-Interview-RVW11251390.htm)

Anonymous Interview Candidate in Bengaluru (India)

No Offer

Positive Experience

Average Interview

Application

I applied through a staffing agency. The process took 2 days. I interviewed at Software AG (Bengaluru (India)) in July 2016.

Interview

Got a call from consultant for Principal Engineer position with experience in Core Java and multi threading. I went for a face to face discussion to the Software AG office. After waiting for around 45 minutes was interviewed by 2 people in the first round.The interviewers were pretty cool and asked me about the comfort areas.The questions in first round were focused on Java collections , multi threading, design patterns and OOP concepts and principles.The second round was on problem solving and analytical skills where one can expect questions on algorithms and data structures. The interviewer asked me to rate myself on these areas.The difficulty of the problems would be on the basis of my rating. I was not selected for the third round, which was on Design & Architecture. Candidates are expected to have subsequent rounds with hiring manager HR and VPShow Less

Interview Questions

* Round 1:  
  What principles should be followed when exposing a function from a Java library.  
  Can custom exceptions be sub classes of Runtime exception class.  
  The time complexity of add and get operation for ArrayList,LinkedList,HashSet,TreeSet,HashMap and TreeMap. When should each of these data structures be used.  
  Difference between ConcurrentHashMap,synchronized Map,HashMap. How locking is done on portion of the Map in ConcurrentHashMap.  
  Describe the different areas in Java heap.  
  Why composition is favored over inheritance.  
  Why ReentrantLock is needed.  
  Given a class with one String field and int field, what needs to be done to store object reference in ArrayList,TreeSet,HashMap  
  Write a program which starts 3 threads,and the first thread to execute prints " Execution started" the last thread to terminate prints "Execution completed". The 3 threads should print numbers in different ranges.(1 -10,11-20,21-30)  
  Was given a design problem on Observer pattern and asked to explain and draw the class diagram.  
    
  Round 2  
  Given 2 arrays of size N and M (N > M ), print the intersection of the arrays. Derive the time complexity.You cannot use any other data structure .  
  Since I used binary search in my implementation was asked to write function for binary search  
    
  Given a 5 digit number, write program to find the next higher number using the digits.  
   Example 56123 --> 56132  
    
  Given the stock prices of a particular stock over 10 days. Write a function to calculate maximum possible profit
* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Interview Questions

* Design a message broker and a threadpool.

Interview Questions

* Java - Where to use Interfaces vs abstract class, Collections, Concurrency package, locks, implement thread safety without using synchronized block  
  Data structures = Implement tower of Hanoi, some problems based on recursion.

Interview Questions

* Write a code for zig zag tree traversal .  
  Write a code for AVL tree .

Interview Questions

* Race condition java program  
  two threads printing odd and even continuously till 100  
  programs on concurrency strategies