Google Coding Interview Answer Template

1. Clarify the Question

- Repeat the prompt to the interviewer.
- Ask: What are the inputs, constraints, edge cases?

Example:
So, I need to implement a class with two methods: insert(num) and findMedian(). Can I assume all inputs are integers? Should fin

2. State Assumptions & Examples

- Say assumptions out loud.
- Try a few small test inputs by hand.

Example:
Lets walk through one. If I insert: [4], median = 4. [4, 6] median = 5.0. [4, 6, 1] median = 4.

3. Decide on Data Structures

- Choose the structure that fits best.
- Justify your choice with time complexity and use case.

Example:
To get median efficiently after each insert, Ill use:
- Max heap (left) for lower half
- Min heap (right) for upper half
This gives O(log n) insert and O(1) median.

4. Explain Your Algorithm Out Loud

- Say the approach as steps before coding.

Example:
On every insert:
- If number <= max of left, push to left
- Else, push to right
- Then rebalance
- For median: return from larger heap or average of tops

5. Start with Pseudocode or High-Level Plan

- Write comments first: # define heaps, # insert logic, # rebalance, # findMedian logic
- Code only after roadmap is clear.

6. Write Clean Code, Narrating

- Use standard libs (heapq).
- Narrate as you go.

Example:
Ill import heapq. Define class, then use negation trick for max-heap.

7. Test 2–3 Edge Cases Aloud

- Walk through code manually.

Example:
Test 1: [4] 4
Test 2: [4, 6] 5.0
Test 3: [4, 6, 1] 4

8. Analyze Time and Space Complexity

- State worst-case insert and median lookup.

Example:
Insert is O(log n) due to heap. Median is O(1). Space is O(n).

9. Optional: Optimize or Handle Follow-Ups

- Ask: What if deletes are allowed? or What if I want top 3 medians?
- Show you're thinking beyond current scope.