**Step 1: Make sure candidate can explain the solution on paper.**

8 Identical Balls Problem

You are given 8 identical looking balls. One of them is heavier than the rest of the 7 (all the others weigh exactly the same). You are provided with a simple mechanical balance*.*

*Find the heavier ball with the minimum number of uses of the scale*



Possible solutions:

* Max of 7 uses. Weigh each ball one by one (linear solution)
* Divide and Conquer/Recursion : 3 use (This is what we want the candidate to code)
* Thinking out of the box: 2 uses. Solution here: <http://google-interviews-questions.blogspot.com/2010/05/8-identical-balls-problem.html>

**Step 2: Test hands on coding skill.**

**Candidate is required to code a recursive algorithm using the eclipse project provided. There are a few packages but the candidate only needs to modify CandidateSolution.java. They are required to use recursion.**

**The candidate can use the JUNIT test case framework to test that their code works. Just run SolutionTest.java**

**Observations:**

* **Check how comfortable the candidate is using the notebook. You might be surprised.**
* **Check how he types.**
* **Does he start coding immediately? He should since he has worked out the algorithm already.**

**Time to solution:**

* **Excellent: 20-30 minutes**
* **Average: 30-60 minutes**
* **Reject: more than 60 minutes**

**Other things to consider:**

* **Code quality**
* **Coding style**
* **Check for OO concepts, if not used why not?**

**Additional Questions:**

* **Is recursion the best way? Which is faster recursion or iteration?**