# Architect Interview Questions:

**1.** Describe a recent project you were responsible for architecting! The goal of this question is for you to demonstrate the architecture & technology of the solution, the problems solved, the considerations taken, the unknowns encountered, any comprimises of functionality that occurred and why. Say what areas you were responsible for versus a contributor to.

As interviewee is answering questions, our job is to determine their technical ability and ability to communicate the problem domain and their problem solving ability and their ability to interview stakeholders and come up with solutions. How thoughtful were they?

Ask questions:

- How much interviewing the candidate did to gather requirements
- How much proposing of the solution the candidate did to stakeholders
- How much did they implement
- How much did they design
- then dig at the technical details of the solution:
    - How much does the candidate know in an area
    - Why did they choose what they chose
    - What would they do different today
    - What compromises did they make and why.

**2.** Design me a solution that solves the following problem:

I'm a starting company that wants to make windmill turbine farms and have monitoring and control and reporting systems, that lets me know how the turbines are performing and how much electricity is being generated and health of the windmills. We have 100 windmills sitting in San Francisco bay. They each have a computer that is connected to the internet with a cellular backup connection. They emit sensor telemetry data every second (somebody thought 1 second was necessary for monitoring & alerting). This data needs to be sent to a receiving application/service. Included in the data is about a dozen data points (wind speed, wind direction, turbine rotation speed, turbine direction, electricity generated, vibration, brake status, cell network status, internet status, external temperature, turbine temperature). This data needs to go back to a central repository in near real time to a central application for purposes of monitoring and alerting. Secondarily the data needs to be stored for daily, weekly, monthly, quarterly, yearly analysis and reporting. How would you design this solution.

Later we can change the problem to say ok, this company became the biggest in the world and now they have 10,000,000 windmills, How does your solution need to change?

The reporting requirements are all about the data aggregation and deltas, not the down to the second actual data points. Want to know how much electricity is generated when. Want to know when peformance is out of range to other turbines. Want to know when turbines go down and come back online.

The alerting needs to be configurable and near real time to alert on various out of range values (temp, voltage, rotation speed, network connectivity), The monitoring is to show current, hourly, and maybe expected value for important information (dollar value type information).

The goal of questions to ask during this is to see how many questions the interviewee would ask to get details in to the requirements. See how technical they get. See the quality of a solution(s) they might propose. Do they challenge any of the initially proposed premises.

Nice to see elements:

- scaling the solution
- data collection
- data agreggation
- data reporting
- trying to get at more requirements
- more than one solution
- challenges to the initial requirements