Case Study Full Stack Developer „Factory Digitalization"

Preamble

- The case study is intended to test the technical and conceptual skills of the candidate.

- The candidate will be evaluated based on the presentation and the subsequent discussion.

- The case study contains two cases including questions.

- The answers should be prepared in the form of a presentation and will then be presented by the applicant in the interview.

- The oral presentation including discussion takes about 30 minutes in total.

- The average preparation time is 2-4 hours

- The use of ChatGPT and similar AI language models will likely be noticed, and as a result, we will ask deeper follow-up questions to verify the candidate's understanding and ensure the responses are authentic.

- Please send the results of the case study to tarek.shaban@siemens.com and christian.vonluepke@siemens.com at least 1 hours before the start of the interview.

Good Luck!

1. Case: Cloud-based Web Application

A web application called "Worker Guidance" is to be developed in a cloud environment and introduced across the entire assembly area (30 workstations). The main feature of the system is the display of the order sequence. The order is specified by the production control. The data should be updated in real time. It is assumed that the amount of data is several gigabytes per day. Modules such as error recording and material requirements are already available at the workstations.

1. Which services or cloud environments would you choose for this?
2. In which development environment would you develop the web applications, maintain them and ensure that multiple developers can work on them in parallel?

Note: Parts of the questions leave the developer with several options or unclear requirements for the applications. This is intentional and assumptions should be made and questions should be asked before or during the interview.

2. Case: Coding Challenge

For production, information from different source systems often has to be presented in a suitable form at the machine workstation. Implement a small application preferably in C#, Python, JavaScript or Java. The application should be able to display technical drawings in different formats (e.g. PDF, JPEG, TIFF) in a front end. Walk us through the source code and describe the concepts and methods you used to implement it.