**Data Analysis Code-at-home (*20/25 mins*)**

The attached csv file contains some time series data of the last print every second from 5 banks. They contribute to a data-feed which we subscribe to, generating bid and ask prices for a currency pair. In whichever tool you are most comfortable with (*python / Excel / R / MATLAB / etc*) analyse the data and provide answers to the below questions. We will aim to discuss your solution to this during the interview. Please send on any code / files / graphs that you used to come to your conclusions as this can really help us understand your thought process and reasoning.

1. What happened here? Talk us through what you see in this data (*<50 words*)

At roughly 10pm, the bid price dips and the ask price spikes at most banks. This suggests that the market became more volatile, or the volume of trades fell for a short period. The currency pairing stabilises after a few minutes but is trading at a higher bid and ask price.

1. Which bank had the tightest overall spread across the hour?

Bank 3, because it has the smallest mean spread.

1. Which bank had the most stable spread?

Bank 3, because it has the lowest variance.

1. Which bank had the most reliable mid-price?

Bank 2, because the impact of the lack of trade or volatility on the bid and ask price was as bad as at other banks.

1. If these questions were not an ad-hoc request, what might you have done differently to answer them?

I would have investigated what could have caused the volatility or the lack of trade volume. I would look at the news to see what happened around 10pm. For example, maybe the Asian markets opened. I would also check past data to see if this was a regular occurrence.