**Background:**

An investment bank has alerted one of Advent’s managing partners that three companies of interest are available for sale, with first round bids due next week. The three companies are similar in terms of industry, business model, financials and valuation, so the investment team has approached you to give additional color in order to quantify culture. In other words, Advent would like to proceed and start courting the firm with the best culture. Consequently, you have decided to use B2B data (attached csv raw file) as the alternative data tool of choice for this project.

**Instructions:**

1. Familiarize yourself with attached csv files (Advent\_B2B\_Data\_Work\_Experience.csv and Advent\_B2B\_Data\_Edu\_Experience.csv). You’ll find that the former represents all of the individual employees at each of the 3 companies (Company N, Company H, and Company A) while the latter file has the education data for those employees. The names have been replaced with an unique ID which will serve as the anchor.
   1. Use Python to analyze the data, please join the two files together so you can view the employee work history as well as their education history
   2. You will submit 3 (three) total files to complete this case study – 1. your code 2. an excel output and 3. This word document with answers to the below
   3. Please do not spend any time formatting charts or creating slides as we’re only focused on the content and creativity of your analysis

**Questions (provide both an excel output as well as a qualitative answer for the below):**

1. Calculate full-time employee growth for the 3 companies from 2015 to 2020 (annually)
   1. Which company is growing the fastest?
2. What is the most common job type for each of the 3 companies? Please define your methodology and how you approached this question
3. Which city has the most full-time employees for each of the 3 companies?
4. From 2015 to 2020, how many employees left their firm every year across the 3 firms?
   1. How would you standardize this metric for comparison’s sake?
5. Calculate the # of job promotions annually for the 3 companies. Which firm promotes more of their employees and how did you define a “promotion”?
6. From 2015 to 2020 annually, what was the average tenure of employees at each of the 3 firms?
   1. Please calculate in terms of avg # of years worked at the existing company
   2. Also compute the total work experience for each employee for the final question below
7. How would you score each of the firms’ culture from 1-100 using this data? Assume a score of 100 represents the highest quality and a score of 0 would be the lowest.
   1. Hint: Use the aggregate employees’ tenure, total working experience, and education level (bachelor vs. masters vs. PhD)
   2. What additional data would you like for each individual in order to help build a better culture ranking model?