Written Analysis

Project 1: Cyber Security Salaries
Dataset: https://www.kaggle.com/datasets/deepcontractor/cyber-security-salaries

After conducting a thorough analysis of cyber security salaries from 2020-2022 with the research questions posed, the following conclusions were made:

Effect of Employment Type on Cyber Security Salaries:

There were 4 employment types given in the dataset i.e. CT (contract), FL (freelance), FT (full-time) and PT (part-time) (see Employment Types). My hypothesis was that the ranking would be as follows going fro highest salary to lowest salary: FT, CT, PT, FL. Instead, the ranking from highest salary to lowest salary was (rounded to the nearest whole number)

FT - $121,000
CT - $104,000
FL - $84,000
PT - $51,000

(see Salary based on Employment Type)
Part-time employees had the lowest average salaries and full-time had the highest. This semi-proved my hypothesis and based on the data is clear that the more hours worked means a higher average salary therefore employment type does have an effect on salary.

Effect of Experience on Cyber Security Salaries:

The ranking of highest to lowest salaries based on experience level is (see salary based on experience level):

EX (executive) - $201,000
SE (senior) - $145,000
MI (mid-level) - $103,000
EN (entry) - $64,000

This shows that the senior and executive roles make the highest average salaries wile entry level make the lowest indicating that the higher the experience level, the higher the salary.

Similarity of Job Titles & Salaries

The findings showed that though job titles may sound similar they have varying average salaries due to technicalities in the job.

For example, the following are some of the 86 job titles and their USD salary (for all 86 job titles please see “salary based on specific job title”.

Application Security Analyst - $105,000 Vulnerability Analyst - $115,000
Application Security Architect - $315,000 Vulnerability Management Engineer - $145,000
Application Security Specialist - $85,000 Vulnerability Researcher - $110,000
This is just a small example and proves that though job titles may sound similar, they have different pay grades.

Effect of Size on Cyber Security Salaries:

My hypothesis prior to the analysis would be that the ranking based on salary would be in order of L, M, S. however it actually turned out be (see salary based on company size):

M - $127,000
L - $121,000
S - $84,000

Mid-size companies actually had the highest average salary (possibly due to more defined roles and an ability for cyber security professionals to reach higher experience levels faster?)

Salaries based on Currencies:

The dataset contained 21 different currencies and the top 5 in highest average salary USD are as follows:

USD (United States dollar) - $133,000
ILS (Israeli new shekel) - $132,000
CHF (Swiss franc) - $130,000
AUD (Australian dollar) - $115,000
GBP (Great Britian pound) - $107,000

These are also the only 5 countries with currencies to have an average salary above $100K. This information is useful for cyber security professionals as it shows them the comparison to US earnings around the world. Moreover, this data also gives us information about the cyber security industry in various countries and how the currency is performing relative to the US dollar. For the 4 countries in this list, it can be assumed they have a thriving cyber security industry as well.

Effect of Remote Ratio and Year on Cyber Security Salaries:

*****see salary based on remote ratio and year and related graphs

The remote ratio has 3 categories: 0, 50, 100 and that is the order of lowest to highest average salaries. This matched with my hypothesis as cyber security jobs are primarily remote and this is increasing over time.

In terms of year, the figures for 2020 and 2021 were comparatively lower as compared to 2022 and this is likely due to the rebound of the industry after COVID-19 when organizations had fully organized their hybrid/fully remote working systems.