Job Market analysis Assignment

1. A brief introduction

In this project, there are two objectives: (1) to analyse how salaries for data-analyst positions vary according to the programming languages specified in the postings, and (2) to evaluate the link between required experience and compensation. The dataset, scraped from Indeed, contains each job's title, description, and advertised salary range. All visualizations were generated in Cursor.

2. Analysis of "Years of Experience"

Figure 1 below shows that relationship between the years of experience required and the compensation offered. There are three main takeaways from the analysis:

- There is no relationship between years of experience required and higher salary. Postings that demand more experience do not systematically offer higher pay, if anything, the point estimate implies a small decrease.

- For 0- to 3-year requirements, salaries span the entire range, from entry-level ($30-40 k) to six-figure offers. That spread indicates other factors (industry, location, specific technical stack, seniority wording, etc.) drive pay more than the raw "years of experience" line in the ad.

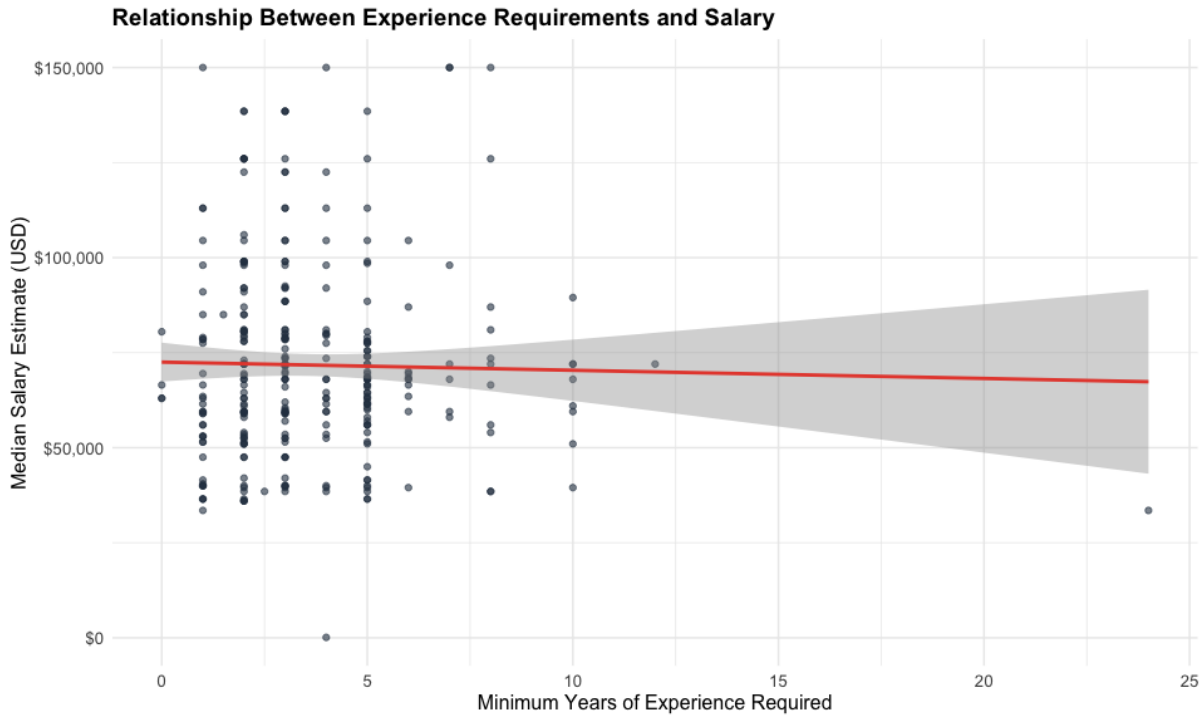

Fig 1: Relationship between years of experience and Salary

3. Analysis of "Programming Language Requirements"

Figure 2 below shows the relationship between compensation and the programming language requirement. Below are the key takeaways:

- Roles that require both Python and R are associated with the highest typical pay and the greatest upside.
- Vacancies that list Python only tend to pay a touch more than the "no-language-specified" baseline, while R-only jobs come in a little lower. That's in line with current market realities-Python dominates data-engineering-heavy environments, whereas R remains common in research settings where salaries are lower.
- The boxes overlap substantially, showing that language requirements explain only part of salary variation. Sector, location, seniority wording, and industry (finance vs. public health, for example) almost certainly play bigger roles.

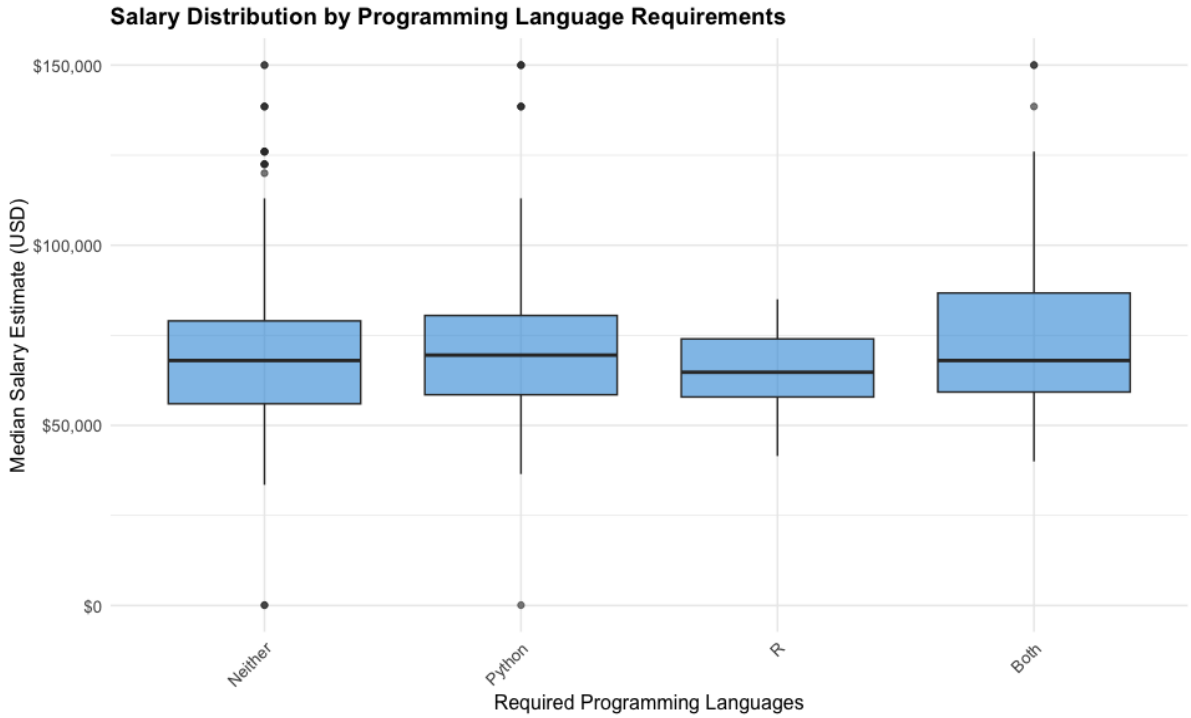

Fig 2: Relationship between compensation and programming language requirements

4. A personal reflection on the process

The more I work with AI tools, the more confident I become, and they're already saving me significant time on data analysis and visualisation.