Based on what I know about Python and R, I believe that Python is more robust. Python’s versatility sets it apart and above R in many ways. As a general programming language, Python has more functionality than the statistical programming language, R. Programmers can access web and SQL data using Python, implement Python in a variety of applications and workflows, and process large datasets with Python’s superior speed. While R rises above when it comes to data visualization, Python is stronger in data manipulation and machine learning with libraries like Pandas, sckit-learn, and PyTorch. Additionally, while they are not as powerful as the ggplot2 library, matplotlib and seaborn are useful Python libraries that produce graphics that can more easily be integrated into engineering workflows.

Having experience in Python prior to this course, I would say data analysis with Python is easier for me, and I think that people with prior programming knowledge would agree. Even someone without programming knowledge may find they have an easier time learning Python than R due to Python’s somewhat simpler and more readable syntax. However, the syntax for accessing library modules and classes in Python may be trickier than doing the same for R libraries. Nevertheless, an important distinction between Python and R, in my opinion, is the different learning curves for advanced use of the two languages. Any person may get the basics of each language down easily, but I believe that developing advanced skills and actually implementing the language in your work is easier in Python.

Both languages have their strengths and weaknesses, though. Each language will be better or worse suited for different tasks and roles. I think that roles in business intelligence and statistical analytics will more likely use R than Python. These roles require analysts to visualize and communicate data or create statistical models, which both tasks can be better performed using R because its ggplot2 library and its emphasis of statistical analysis, respectively. Python is going to be better for data scientists and machine learning engineers who will be working with large amounts of data and developing algorithms to handle the data.