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## 

**Experiment 7**

CPE106L (Software Design Laboratory)

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## **PreLab**



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| **Readings, Insights, and Reflection**  Lee, Fernandez, and Taguiam (Web Scraping)  In the handout given for Web Scraping, we were able to learn that it is the process of extracting data from a HTML page on the internet to a CSV or similar formats so it can be used in Excel. We then learned about Python libraries, specifically urlib and Beautifulsoup, which are commonly used for web scraping.  In the same handout, Regular Expressions were discussed. Regular Expressions are patterns that are used to identify specific strings in text data, and they have 5 rules they follow. The first rule is “A-Za-z0-9\. +]+”, which states that the first part of an email address, before the “@” symbol, must contain at least one uppercase or lowercase letter, a number, periods (.), plus sign (+), or underscores (\_). The second rule is “@”, which is the "@" symbol in an email. The third rule is “A-Za-z]+”, where the email address needs to have at least one upper or lowercase letter. The fourth rule “\.”, where a period (.) must separate the username from the domain name. The fifth and last rule is “(com|org|edu|net)”, where the domain must end with a top-level domain, but is not restricted to these 4.  Lee, Fernandez, and Taguiam (Matplotlib)  The next handout regarding data visualization with Matplotlib which gave us a comprehensive understanding of Matplotlib’s functionality. With the detailed explanations and practical examples, we learned about the different interfaces offered by Matplotlib and how to use these interfaces to create plots. We learned about customization such as color, linestyle, marker type, grids, and more. We were also able to apply this in our Data Science Programming Exercises and were able to have more practice using them.  Lee, Fernandez, and Taguiam (Application Programming Interface)  This handout discussed what APIs were and gave us a comprehensive understanding of Application Programming Interface (API) basics and fundamentals. It focused on web APIs, design principles, and the practical implementations of Python frameworks. It explained what a web API is and why it is so important, emphasizing its crucial part in enabling programs to interact with resources on the internet. It also discusses the importance of clear documentation and well-designed URLs from the user. We also learned when API is useful, such as when managing larger datasets, real-time data access, and more. Terminologies such as HTTP, UTL, JSON, and REST were also explained to help us better understand APIs. Overall, the handout helped give us a comprehensive understanding of APIs, together with their functionalities and practical applications in software development. |