Python Automation Assignment Report

1. Log File Analysis:
    a. For the log file analysis, we analyzed a log file that we found online. We had our code look for patterns, and suspicious logs. The list of suspicious logs was then recorded in a text document named summary_report.txt. It found 9 suspicious logs and gave a list of them as well.
2. System Performance Monitoring:
    a. For this section we monitored the system's performance and had our code output the CPU and memory usage. The percentage usage was documented in a file called performance_log.txt. If the CPU usage was above 0.1% then the code would output an alert stating high CPU Usage detected. For this section we used the pstuil library.
3. Alert Generation
    a. For this section, we automated a system to send email when CPU usage is high. We used an email Api, sendgrid, to do this. When the CPU usage is above 0.1%, the code sends an email to the specified email address. For this section we used an email API and smtplib library.
4. Automating Routine Security Checks
    a. For this section, we automated code to run security checks. We used nmap, the subprocess library, and scapy to do this. Scapy monitors the network traffic and nmap scans for vulnerabilities on the network. Our code captures 10 packets. The code outputs a nmap scan report. The report states whether the network is up or down and lists tcp ports and their statuses.