

Sumeet Shailendra Kadam

Roll No.23

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In [1]: import re

def extract_critical_errors(log_data: str) -> list[tuple]:
    pattern = re.compile(
        r"\[(\d{4}-\d{2}-\d{2} \d{2}:\d{2}:\d{2})\] \[ERROR\] \[([A-Za-z_]+\)\] (.+?(?:\d{1,3}\.\d{1,3}\.\d{1,3}
    )

    matches = pattern.findall(log_data)

    return [(timestamp, module, message) for timestamp, module, message in matches]

# Example usage
log_data = """[2025-03-09 08:15:45] [ERROR] [Firewall_Module] Blocked unauthorized access from 172.16.0.2. Error
[2025-03-09 09:30:22] [DEBUG] [Cache_Module] Cache cleared successfully.
[2025-03-09 10:05:12] [ERROR] [Network_Module] Packet loss detected from 192.168.0.254. Error Code: 0x1234ABCD
[2025-03-09 11:45:30] [INFO] [System_Module] System rebooted successfully.
[2025-03-09 12:10:55] [ERROR] [Security_Module] Malware detected from 10.10.10.10. Error Code: 0x9876FEDC"""

result = extract_critical_errors(log_data)
print(result)

[('2025-03-09 08:15:45', 'Firewall_Module', 'Blocked unauthorized access from 172.16.0.2. Error Code: 0xFE12ABC
D'), ('2025-03-09 10:05:12', 'Network_Module', 'Packet loss detected from 192.168.0.254. Error Code: 0x1234ABCD
'), ('2025-03-09 12:10:55', 'Security_Module', 'Malware detected from 10.10.10.10. Error Code: 0x9876FEDC')]
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In []: