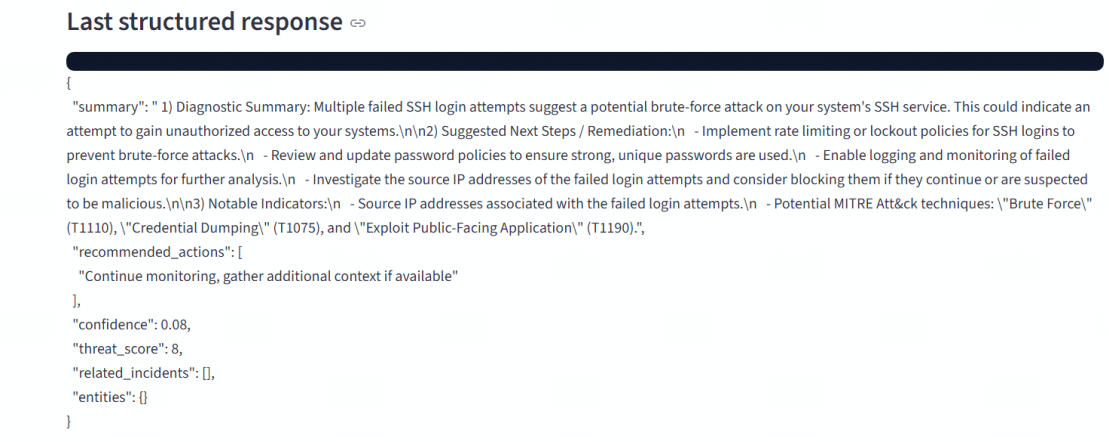
Ishan Garg Milestone 4 Assessment(10843105)

SOC-RAG Assistant

As per the question, I have done all use cases along with bonus use cases.

This is the UI for the SOC assistant app



Output in the terminal along with bonus

```
Enter: <analyst_id> <query> (or q): user0 spiked in failed login attempts

--- RAG OUTPUT ---
Entities extracted:
{}

Threat Score:
Score: 8  |  Level: Low
Reasons:
- Brute-force indicators (1) => +8

Retrieved snippets:
(no retrieved snippets)

LLM Answer:

 1) Diagnostic Summary: There has been an increase in failed login attempts, which may indicate a brute-force attack or compromised accounts.

2) Suggested Next Steps / Remediation:
   - Investigate the IP addresses involved in the failed login attempts to determine if they are malicious.
   - Review account lockout policies to ensure they are not overly permissive and causing unnecessary delays or service interruptions.
   - Implement multi-factor authentication for all accounts where possible.
   - Consider implementing a rate limiting system to prevent brute-force attacks.

3) Notable Indicators:
   - Suspicious IP addresses involved in the failed login attempts.
   - MITRE Att&ck Techniques: "Brute Force" (T1110), "Credential Dumping" (T1003), and "Account Manipulation" (T1115).
```

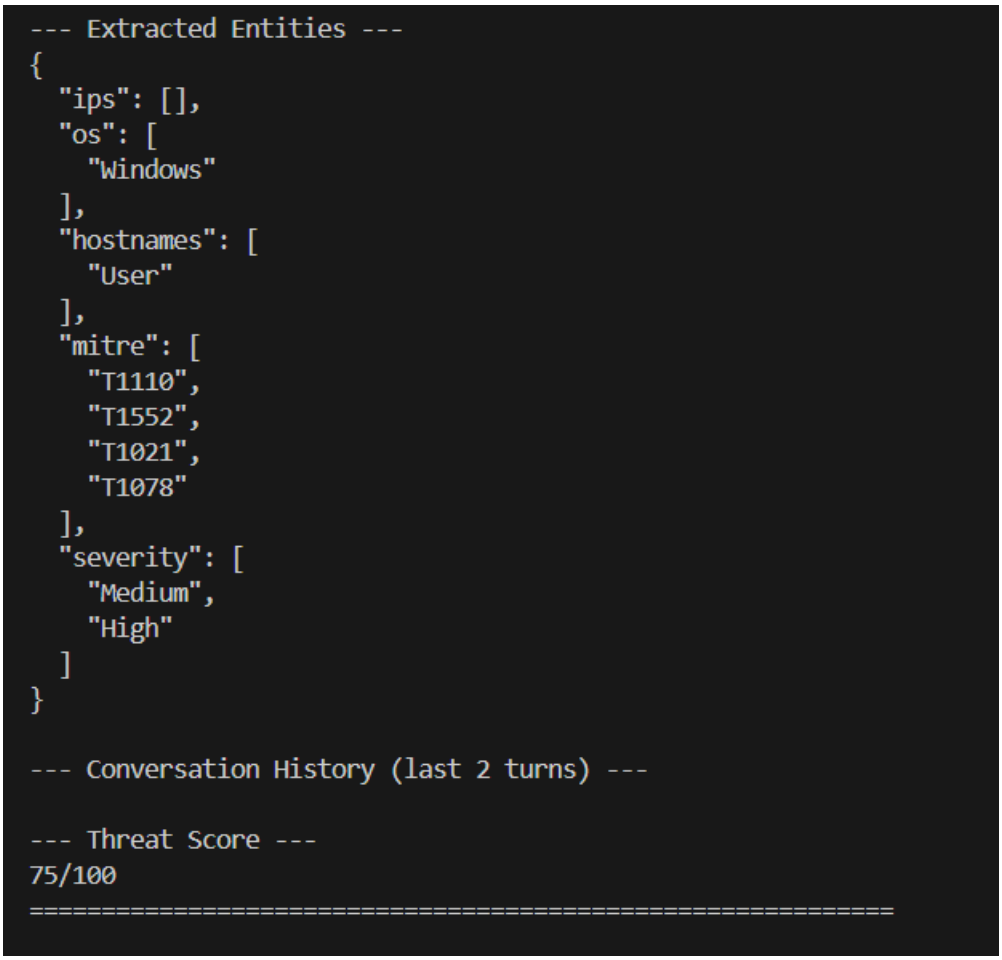
```
Format: <analyst_id> <your query>   (type 'q' to quit)

Enter: user1  ssh login failed
Error in RootListenersTracer.on_chain_end callback: KeyError('output')

============================================================
FINAL ANSWER (JSON)
{
  "analysis": "The incident involves a spike in failed SSH login attempts on the host SRV-SSH01 running Ubuntu 22. This aligns with MITRE's T15
52 (Credential Abrasion).",
  "resolution": "Revoke the current SSH keys, enforce rotation of new SSH keys, and implement a lockout mechanism for failed login attempts.",
  "similar_incidents": [
    "Incident #018"
  ],
  "threat_score": "75"
}

--- Retrieved Context (Hybrid) ---
1. User:Incident #008 Host:User=rohan OS:Alert=Spike in failed login attempts IP:Host=SRV-APP2 Summary:OS=RedHat 8 MITRE:MITRE=T1110 Severity:S
everity=Medium Resolution:Resolution=Throttled login attempts; Enabled MFA....
2. User:Incident #040 Host:User=allan OS:Alert=SQL admin login anomaly IP:Host=SRV-DB03 Summary:OS=RedHat 9 MITRE:MITRE=T1078 Severity:Severity
=Medium Resolution:Resolution=Reset admin password; Reviewed logs....
3. User:Incident #021 Host:User=tony OS:Alert=Multiple failed RDP logins IP:Host=WKS-33 Summary:OS=Windows 10 MITRE:MITRE=T1021 Severity:Severi
ty=High Resolution:Resolution=Blocked IPs; Enabled account lockout....
4. User:Incident #018 Host:User=will OS:Alert=Suspicious SSH key usage IP:Host=SRV-SSH01 Summary:OS=Ubuntu 22 MITRE:MITRE=T1552 Severity:Severi
ty=High Resolution:Resolution=Revoked SSH keys; Enforced rotation....
5. User:Incident #016 Host:User=lisa OS:Alert=Frequent failed sudo attempts IP:Host=DEV-01 Summary:OS=Debian 10 MITRE:MITRE=T1110 Severity:Seve
rity=Medium Resolution:Resolution=Implemented lockout; Alert rule created....

--- Extracted Entities ---
{
  "ips": [],
  "os": [
    "Windows"
  ],
  "hostnames": [
    "User"
  ],
```



Above 3 screenshots show Threat score, JSON Format answer, Tool and Entity Memory Extraction.