Malware Protection using Reverse Engineering

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PROBLEM STATEMENT

- This project aims to establish a robust framework designed to empower individuals with the knowledge and tools necessary to comprehend, detect, and effectively counteract malware threats.

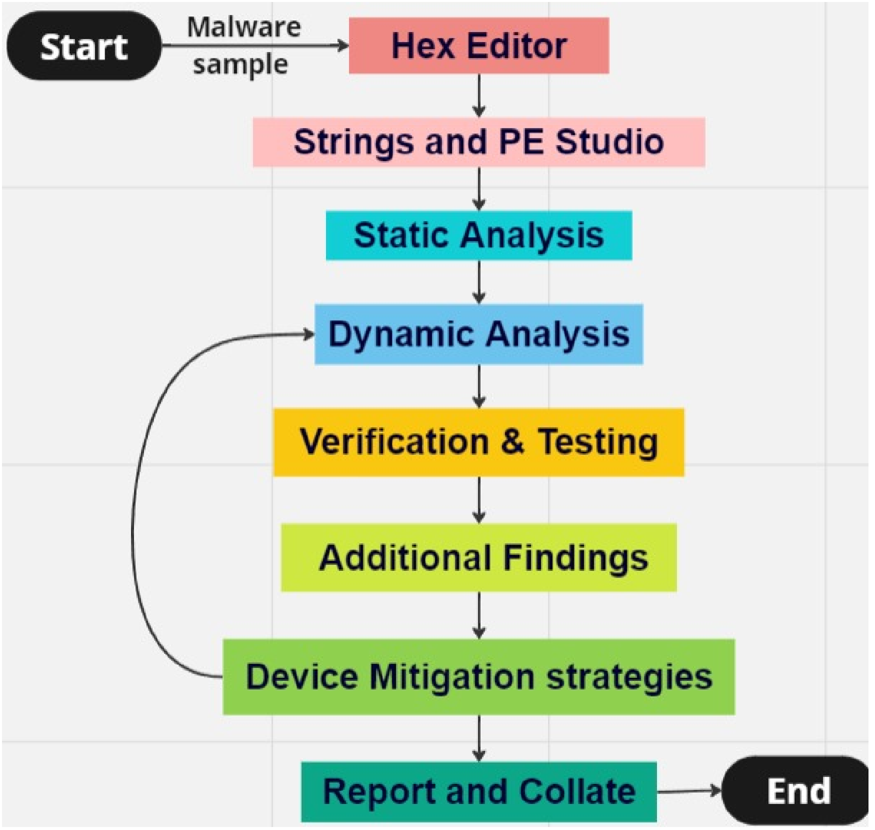
BACKGROUND

- In reverse engineering, the synergy of static and dynamic analysis is key. Ghidra excels in static analysis, offering robust capabilities.
- For dynamic analysis, the Sysinternals suite stands out as a preferred open-source tool.
- Analysing Windows malware is most effective in an isolated environment, such as Flare VM, ensuring a controlled and secure analysis space.

DATASET AND FEATURES / PROJECT REQUIREMENTS/ PRODUCT FEATURES

- Encryption based malware samples like Virlock , Macros like Punjex Dropper, Evasive malware like MalBen Dropper and Information stealers like RedLine stealer are some of the malware samples that we selected/crafted for analysis.

DESIGN APPROACH / METHODS



RESULTS AND DISCUSSION

- The project yielded 16 detailed reports on malware analysis procedures, accompanied by cheat sheets for PowerShell and DLL API calls.
- A comprehensive document outlining the steps for setting up an effective malware analysis environment is also provided. Research papers addressing gaps in analysis augment the project contributions.

SUMMARY OF PROJECT OUTCOME

- The resulting framework encompasses diverse components of malware, offering insights and best practices essential for tackling these threats.
- By adopting a dual perspective—both as an attacker and a defender—this framework provides a comprehensive approach to malware analysis.

CONCLUSION AND FUTURE WORK

- In conclusion, this project's comprehensive framework, developed through the exploration of existing tools and reverse engineering real-world malware samples, stands as a pivotal resource for cybersecurity society.
- For future endeavors, it is imperative to focus on the development of cutting-edge tools aligned with the latest malware trends

REFERENCES

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