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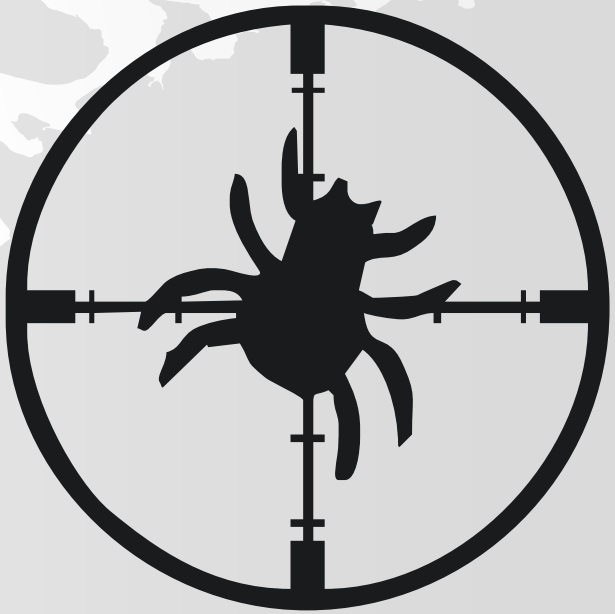

METHODOLOGY FOR VULNERABILITY RESEARCH AND EXPLOIT DEVELOPMENT

Presenter m-r Mane Piperevski

BalCCon2k17 Novi Sad, Serbia 2017

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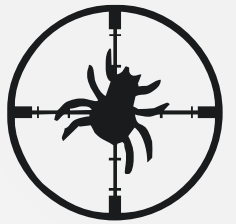

WORLD OF BUGS

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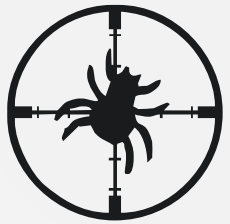

HOW DIFFICULT IS VULNERABILITY RESEARCH?

1. Learning used technology
2. Learning hacking tools and techniques
3. Choosing the right approach method
4. Found one … What next???
5. How much money will I earn?
6. How much money should I spend?

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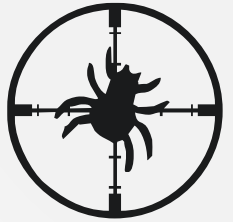

HOW DIFFICULT IS VULNERABILITY RESEARCH?

All Things are
Difficult

Before they are
Easy

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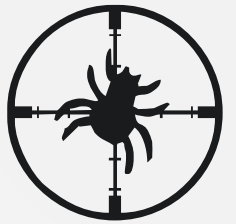

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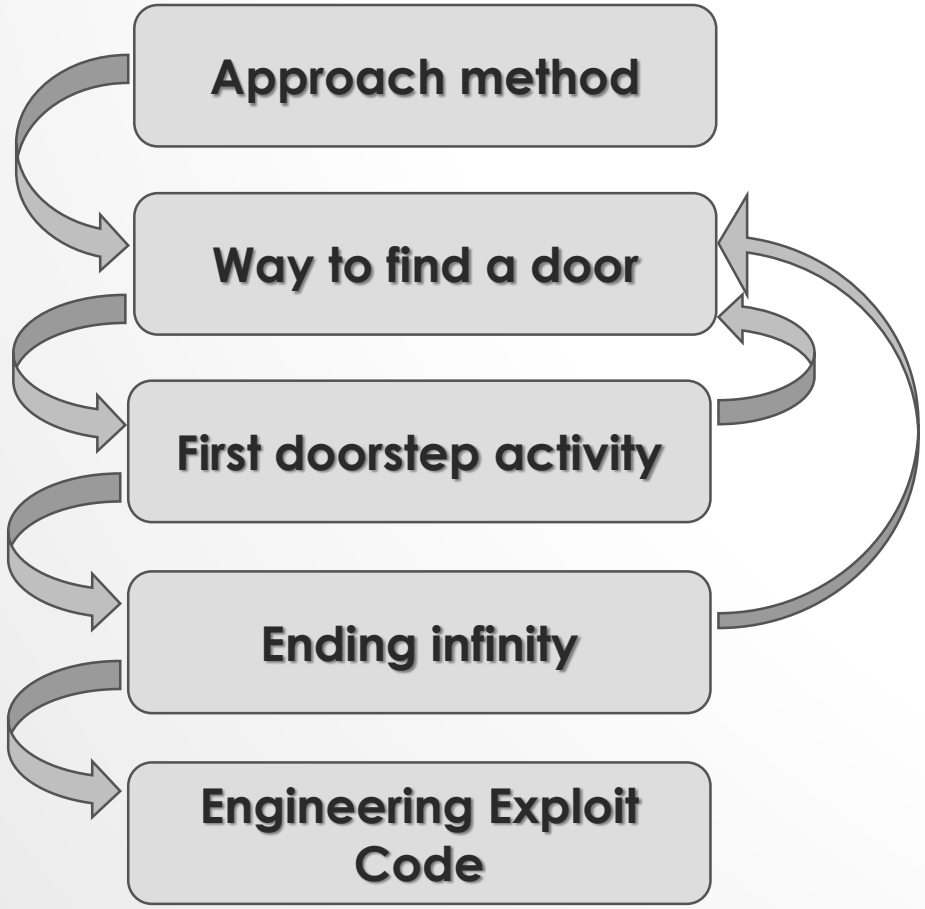

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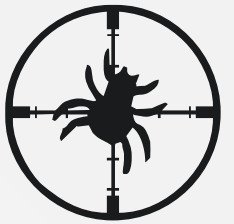
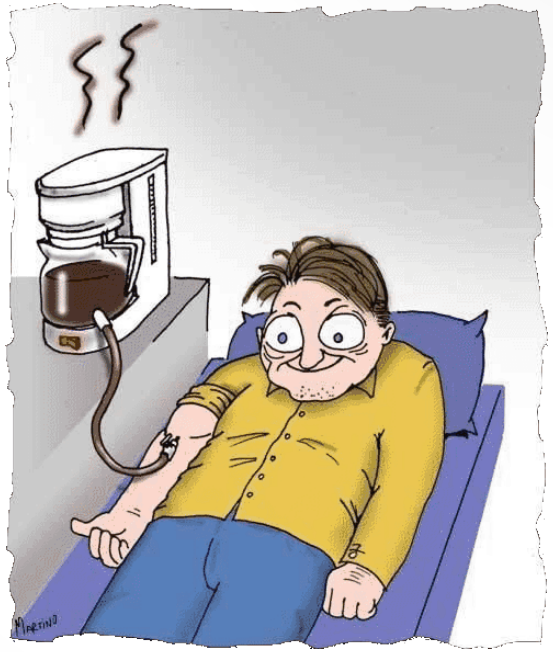


METHODOLOGY FOR VULNERABILITY RESEARCH AND EXPLOIT DEVELOPMENT

Don’t forget to do this before you begin



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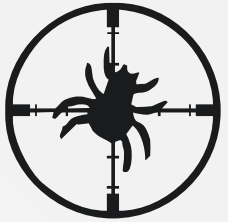


METHODOLOGY PHASE 1
APPROACH METHOD

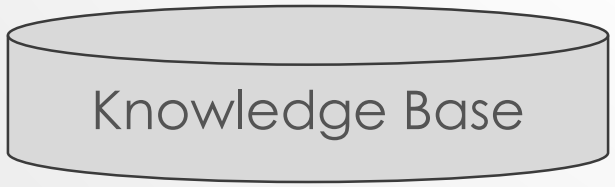
Vendor dependent

Automated testing

- Loud
- Detectable
- Non Efficient

Manual testing

- Quiet
- Intelligent
- Time Consuming



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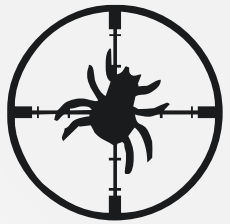


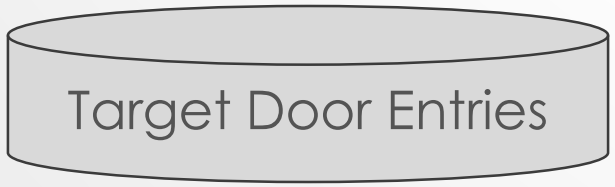
METHODOLOGY PHASE 2
WAY TO FIND A DOOR

If possible, try them all

Enumeration
- Discover Inputs
- Discover Activities
- Discover the Surface

Thinking
- Business Process Overview
- Identify hidden opportunities

Diffing
- Identify differences
- Discover how they differ
- Time Consuming



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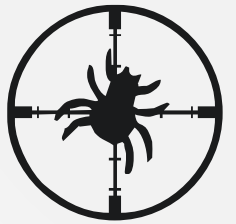

METHODOLOGY PHASE 3
FIRST DOORSTEP ACTIVITY

If applicable, try them all

Bruteforce
- Use of Fuzzing
- Easily Detectable
- Inefficient on Production Env.

Hapax
- Unique Activity
- It can be done only once
- Related with business logic

Incantation
- Predefined set of activities
- Smart Fuzzing
- Related with business logic

Target Door Entries
Tested without outcome

Discovered
Vulnerabilities

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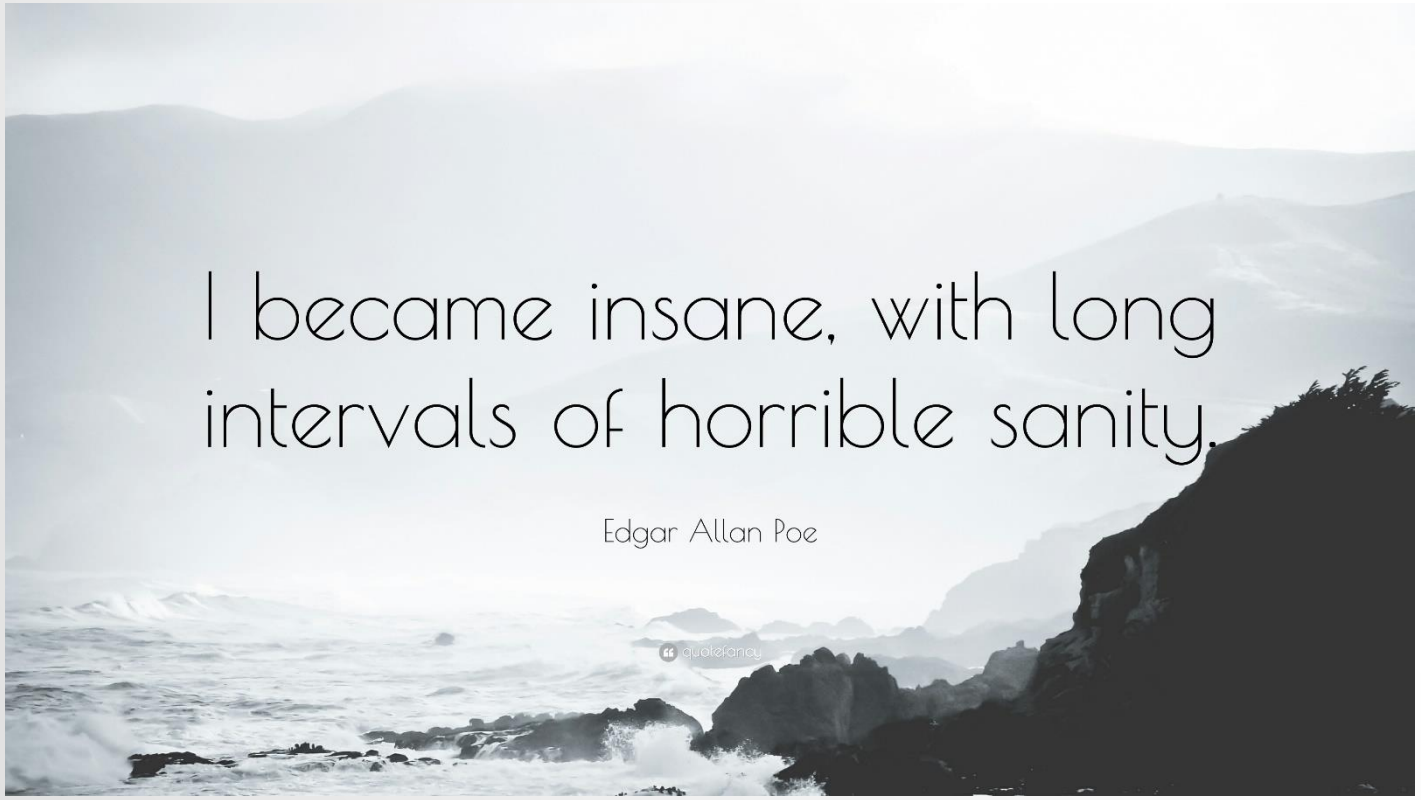
METHODOLOGY PHASE 3
FIRST DOORSTEP ACTIVITY



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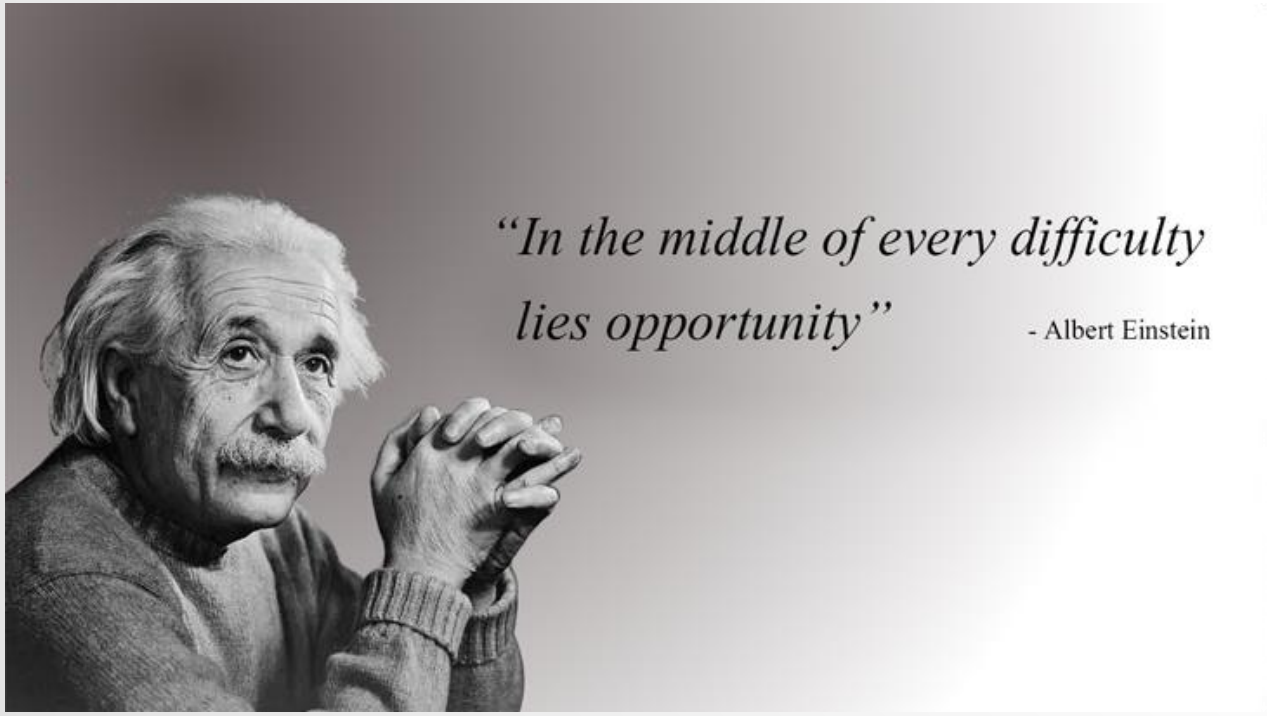
METHODOLOGY PHASE 3
FIRST DOORSTEP ACTIVITY



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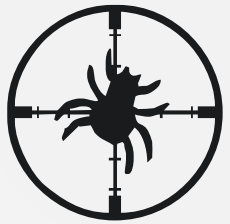
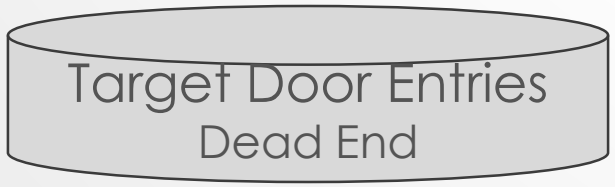


METHODOLOGY PHASE 4
ENDING INFINITY

Lucky choice

Bonanza
- Time Solve Problem
- Look from Different Point
- New Ideas/Techniques

Breakdown
- Review the Logic
- Make Mind Map
- Repeat previous steps again



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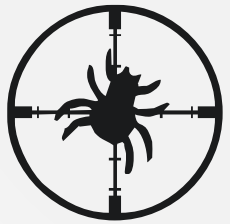


METHODOLOGY PHASE 5
ENGINEERING EXPLOIT CODE

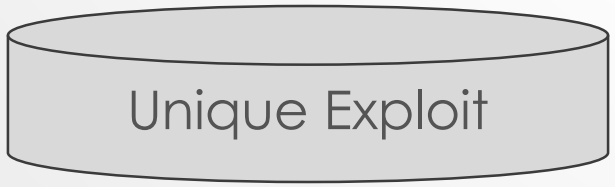
Depends on the goal

Totum
meaning
totally

- Develop from scratch
- Custom modules
- Opportunity to sell it

Pars
meaning
partly

- Use of Metasploit
- Proof of concept
- Short time to build



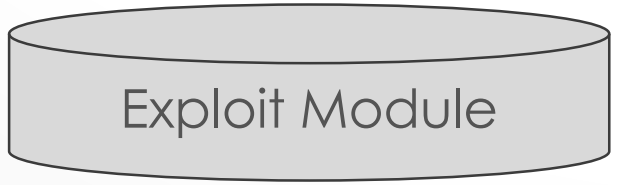


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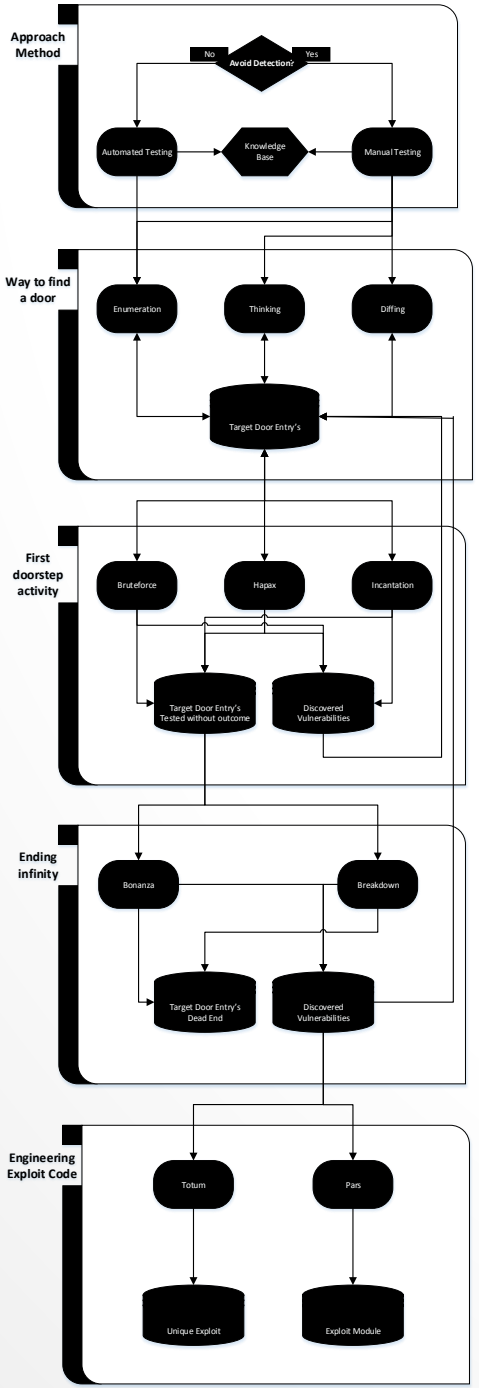
DIAGRAM VIEW



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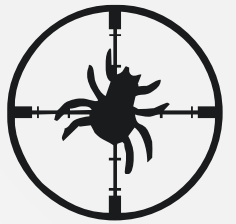
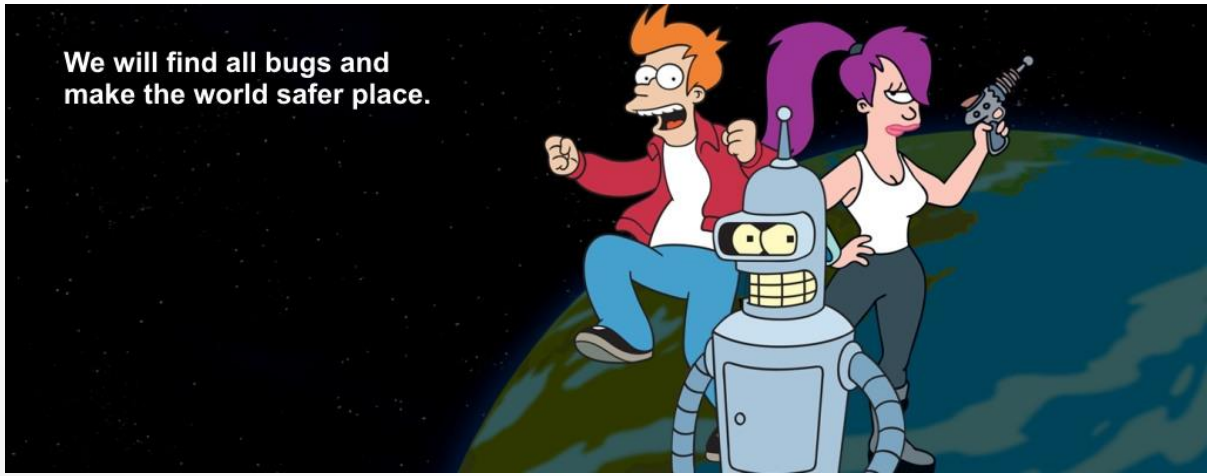


FUTURE DEVELOPMENT AND VISION

- Building testing guide for every element
- Create multiple practical examples
- Create OWASP project
  - Vulnerability Research and Exploit Development Methodology



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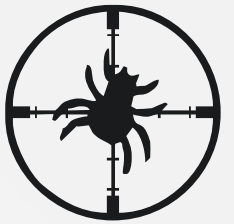
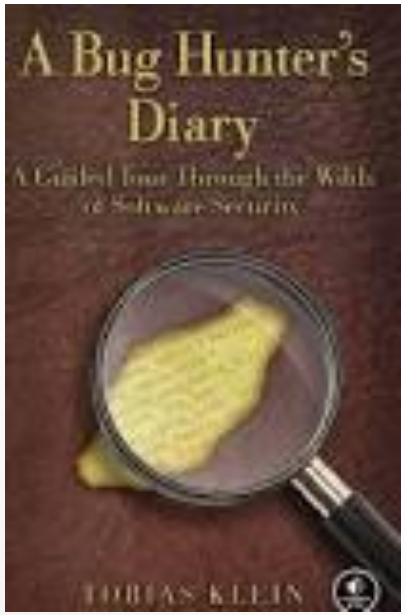


PRACTICAL EXAMPLE

- Desktop Standalone Application
  - Поинт Финансии (http://www.point.com.mk/)
- Microsoft Technologies
- Use of tools
  - Sysinternals Suite of tools
  - x64dbg
- Recommended starting point



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QUESTIONS !!!

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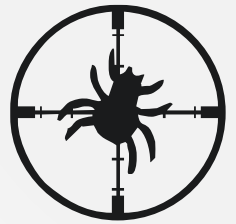

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