RIT | Rochester Institute of Technology of Dubai

Department of Electrical Engineering and Computing

Computing Security

CSEC 202 Reverse Engineering Fundamentals

Spring 2024

Sections: 600, 601, and 602

Extra Credit #2: Boost your Midterm by 2%

Dynamic Analysis Tools Showcase: A Cybersecurity Expedition

Date: March 18, 2024

Due Date: April 04, 2024 – 11:59:59 p.m. (GST= GMT+4)

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Extra Credit #2: Boost your Midterm by 2%

Dynamic Analysis Tools Showcase: A Cybersecurity Expedition

Instructions:

Welcome to "Extra Credit #2: Boost Your Midterm by 2% - Dynamic Analysis Tools Showcase: A Cybersecurity Expedition." This assignment is designed not just as a means to enhance your midterm grades but as a comprehensive journey into the heart of cybersecurity practices, focusing on the critical skill of dynamic analysis.

As future cybersecurity professionals, mastering the tools and techniques for analyzing and mitigating threats is indispensable. This project goes beyond traditional learning paths, offering you hands-on experience with setting up a cybersecurity lab, utilizing dynamic analysis tools, and developing essential soft skills crucial for your career.

In the spirit of "**from Tigers, for Tigers**," you are not just participants but contributors to the rich tapestry of knowledge that defines our course. You will embark on an expedition to explore various dynamic analysis tools, install them in a FLARE VM environment, and apply them in real-world scenarios, including the analysis of malware and emulation of cyber-attacks.

This assignment is structured to foster not only your technical acumen but also your ability to work collaboratively, communicate effectively, and support your peers, mirroring the dynamic and interconnected world of cybersecurity. You will deliver presentations, create instructional materials, and potentially produce video tutorials, contributing to a legacy of knowledge that will benefit future cohorts.

Let this expedition be your gateway to deeper understanding, skill enhancement, and active contribution to our learning community. Embrace the challenge, share your insights, and let's advance together in our cybersecurity journey.

Objectives

1. **Technical Proficiency:** Train students in setting up a Windows virtual machine environment (like FLARE), installing various dynamic analysis tools, and familiarizing themselves with their functionalities. This step is crucial for building foundational skills in cybersecurity practices.
2. **Tool Introduction:** Equip students with knowledge about specific dynamic analysis tools, understanding their uses, strengths, and limitations.
3. **Presentation Skills:** Enhance students' ability to effectively communicate technical content, a skill vital for both academic and professional success in cybersecurity.
4. **Engagement and Utility:** Utilize the spring break and online sessions during Ramadan effectively, keeping students engaged with productive tasks that align with the academic calendar and religious observances.
5. **Preparation for Advanced Assignments:** Lay the groundwork for Homework Assignment 3, involving comprehensive dynamic analysis of dangerous malware, and for controlling (GreenCat) malware via a C2 server, simulating a real-world cybersecurity operation.

6. **Technical Support Experience:** Offer students the chance to support their peers technically, simulating real-world tech support scenarios.
7. **Teamwork and Collaboration:** Foster cooperation within and across class sections, reflecting the collaborative nature of cybersecurity teams in the industry.
8. **Content Creation:** Involve students in creating educational content for the course, emphasizing peer-to-peer learning and contribution to the course legacy.

Submission Requirements:

1. **Online Class Presentation:** Each student or team will present their assigned tool during an online class session, explaining its installation, use cases, and functionalities.
2. **PowerPoint Presentation:** Submit a presentation that will be incorporated into the course materials, serving as a reference for current and future students.
3. **Technical Support Role:** Act as a **go-to support resource** for the presented tool, aiding classmates in understanding and troubleshooting issues.
4. **Optional Video Presentation:** Produce a video tutorial on the tool for use in classroom settings and by other sections, enhancing the course's digital resources.

Evaluation and Scoring:

- The assignment contributes to improving midterm scores by **2%.** This initiative encourages thorough and engaging presentations, rewarding students' effort and quality of work.
- Unused bonus points from the 2% improvement can convert into additional bonus points for homework assignments, incentivizing excellence and effort beyond the basic requirements.

Group Work Dynamics:

Group work is flexible, allowing individual to small team participation within sections and enabling cross-sectional collaborations for joint presentations.

- **Within Sections**: Students can work solo or in teams of up to three to tackle the presentation on a dynamic analysis tool.
- **Across Sections:** Encourages collaboration between teams from different sections, fostering a sense of community and shared purpose among students.

Good luck