

Graduate College of Technology
Master of Science - Information Systems Technology

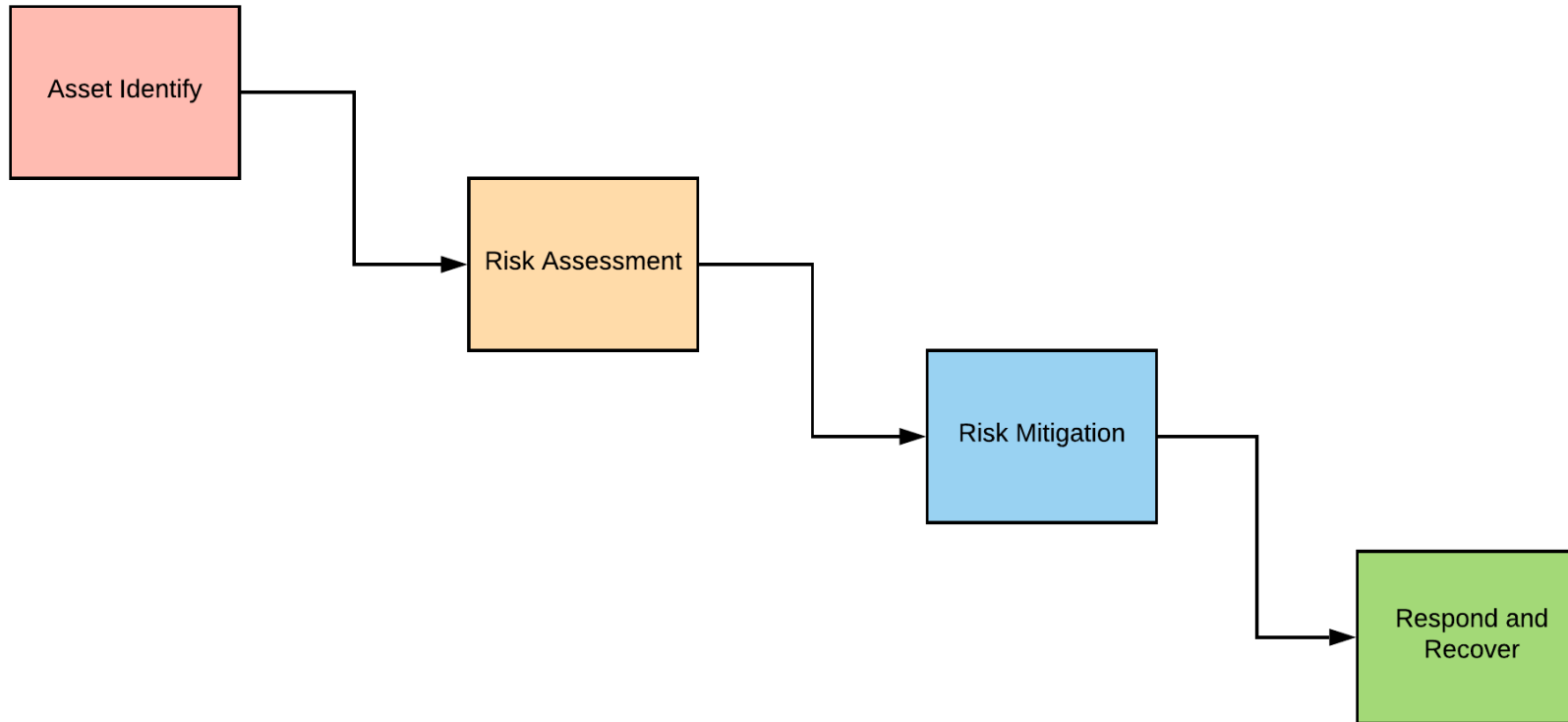
Web Security

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Paper Introduction

- The paper discusses how to approach the security plan for a website and database.
- Most of the websites are data driven since (Vohra & Yadav, 2016)
- The paper discusses how to use Cybersecurity model to secure websites and databases

Cybersecurity Model



Using Notion of Newton's Laws



Why web security is important?

- By 2021, security breaches will cost government and businesses around \$6 trillion every year (Cybersecurity Ventures, 2019).
- Billions of record get stolen every year!
- Websites are one of the most common channel that intruders use to get it.
- Web security is paramount.

Discussion

- Security model.
 - Asset Identification – Infrastructure, webserver, database, user Privacy(!).
What else?
 - Risk Assessment – Asset Importance x Vulnerability x Threat (Parker, 2018).
 - Risk mitigation.

Discussion



I can relax now!!!!

Discussion



No you cannot!!!!

Discussion

- Security model (continued).
 - Respond to events.
 - Recover from events

- Continuous monitoring and improvement

Using Notion of Newton's Laws

- **Newton's first law** – More famous you are, more attacks will be targeted at you.
- **Newton's second law** – The larger the scale of attack, difficult it is to manage.
- **Newton's third law** – Every time you secure something, the hacker are going to figure out another way to intrude.



Discussion

- Common types of attacks. Take care of them during risk assessment and mitigation
 - Cross Site Scripting (XSS)
 - SQL Injection
 - Brute Force
 - Targeting the host using buffer flow (severe consequences)

Takeaways

- Web security is important, make sure to code in a secure manner and your infrastructure is secure.
- Identify assets, assess risks, mitigate risks, respond to and recover from *events*.
- Continuous monitoring and improvement.
- Types of attacks – XSS, SQL injection, brute force and buffer overflow.

Questions?



Thank you!



References

Vohra, N. & Yadav, K. S. (2016). Student's usage and experiences of web 2.0 technologies. *Library Herald*, 54(1).

Cybersecurity Ventures. (2019). *Cybercrime Damages \$6 Trillion By 2021*. Retrieved from <https://cybersecurityventures.com/hackerpocalypse-cybercrime-report-2016/>

Parker, A. M. S. (2018). *Cyberspace, cyber security and cyber crime*. Thousand Oaks, CA: Sage Publication

Herbrandson, J. (2014). Most common attacks affecting today's websites. Retrieved from <https://blog.sucuri.net/2014/11/most-common-attacks-affecting-todays-websites.html>