Discussion 7.1 Security Best Practices

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**Name of the Security Threat:**

Malware

**Description:**

Malware or malicious software is a virus, trojan, worm, spyware etc. is software that has been added to your system that can track keystrokes, or even what you do online.

**Danger to users:**

The danger of malware is that it can steal your personal information, such as credit card information, S.S numbers, passwords to online banking just to name a few, it can steal your identity (*Malware - Information Security*, 2016)

**Danger to companies:**

The biggest danger to companies is that it would lock down information and steal it. Or on certain infrastructure it could even lock the entire thing down where you would have to pay a ransom to get the infrastructure back and running again. An example of this would be would an electric grid that had one employee be compromised with malware that tracked passwords and it was eventually passed along through their emails or files into a more higher security area where the hackers were able to figure out how to lock everything down and threaten to turn the shut the power plants of substations down, or worst yet figure out a way to permanently destroy them by removing safety protocols in some software in a substation.

**Why it was selected:**

When you think of security issues this is probably the most common one you think of, often times it starts in other forms such as phishing.

**How can we protect Express application from it:**

According to blog.logrocket.com you are able to lock dependencies down with package-lock.json or yarn.lock (Gimeno, 2019) use npm/yarn to install. Other NPM packages include npm audit or Snyk that can supply you with alerts when your program is vulnerable. But the biggest and often easiest way is mitigation. I know that IT security video your company encourages you to watch is not the most thrilling but it is probably the easiest way to educate employees on why security is so important.

**Name of the Security Threat:**

SQL Injection

**Description:**

SQL injection allows hackers to add, view or destroy queries in your database. (*What Is SQL Injection? Tutorial & Examples | Web Security Academy*, n.d.) Often times stealing passwords or credit cards or other personal data.

**Danger to users:**

A danger for users is that your personal data could be leaked. Credit cards that have been store, S.S. numbers, or any other personal data.

**Danger to companies:**

It really doesn’t look good when your company gets their database hacked and it leaks a bunch of your customers personal data.

**Why it was selected:**

I selected this because of our recent introduction to databases.

**How can we protect Express application from it:**

According to stackhawk.com you can use a layer of data protection (*Node.js SQL Injection Guide: Examples and Prevention*, n.d.)

For Example

app.post("/records", (request, response) => {

const data = request.body;

connection.query('SELECT \* FROM health\_records where id = ?', [data.id], (err, rows) => {

if(err) throw err;

response.json({data:rows})*;*

})*;*

}

(*Node.js SQL Injection Guide: Examples and Prevention*, n.d.)

**References:**

*Node.js SQL Injection Guide: Examples and Prevention*. (n.d.). StackHawk. Retrieved February 13, 2023, from <https://www.stackhawk.com/blog/node-js-sql-injection-guide-examples-and-prevention/>

*What is SQL Injection? Tutorial & Examples | Web Security Academy*. (n.d.). PortSwigger. Retrieved February 13, 2023, from https://portswigger.net/web-security/sql-injection

Gimeno, A. (2019, December 18). *How to protect your Node.js applications from malicious dependencies*. LogRocket Blog. Retrieved February 13, 2023, from https://blog.logrocket.com/how-to-protect-your-node-js-applications-from-malicious-dependencies-5f2e60ea08f9/

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