Unit 8 Lab

Specter and Meltdown Vulnerabilities

1. **In your own words, outline the Meltdown vulnerability, including who is affected by it and how it can be exploited: in other words, outline how the vulnerability "works."**

Meltdown is a hardware vulnerability affecting Intel x86 microprocessors, IBM POWER processors, and some ARM-based microprocessors. It allows a rogue process to read all memory, even when it is not authorized to do so.

2. **In your own words, outline the Spectre vulnerability, including who is affected by it and how it can be exploited: in other words, outline how the vulnerability "works."**

Spectre is a vulnerability that tricks a program into accessing arbitrary locations in the program's memory space. An attacker may read the content of accessed memory, and thus potentially obtain sensitive data.

3. **How are the two exploits similar in the way they function?**

Spectre and **Meltdown** are the names given to different variants of the same fundamental underlying vulnerability that affects nearly every computer chip manufactured in the last 20 years and could, if exploited, allow attackers to get access to data previously considered completely protected.

4. **Based on the similarities of these two exploits, what lessons can hardware and software developers take from the discovery of these exploits?**

That these chips need to be made more secure. If hackers can get in by tricking chips, this is serious. As so much sensitive information is stored on computers, having chips not be secure enough is a big problem which needs to be changed.

Cambridge Analytica Case

1. **Explain how the Cambridge Analytica researchers used social engineering in their scheme. Explain how you or others could resist such manipulation in the future.**

An app was made in 2013, which asked a series of questions to build psychological profiles on users. The app also collected the personal data of the users' Facebook friends via Facebook's Open Graph platform. To avoid falling for social engineering, be **100% SURE** you know what you are looking at. For example, if you receive an email from Apple asking to send your social security number or credit card information to verify a refund, its fake. Because remember, Apple doesn't ask that stuff via email. If you know what is normal and what isn't, you can distinguish easily if it is a scam or not.

2. What consequences does Reich say Cambridge Analytica and Facebook should face for this scandal? Do you agree with Reich? Why or why not?

That they should be punished under the law and that they should probably have their permission, their capacity to work with this kind of data or work across these platforms taken away as well. I would agree with this, as they are violating people's data and wouldn't trust them with it for doing what they did.