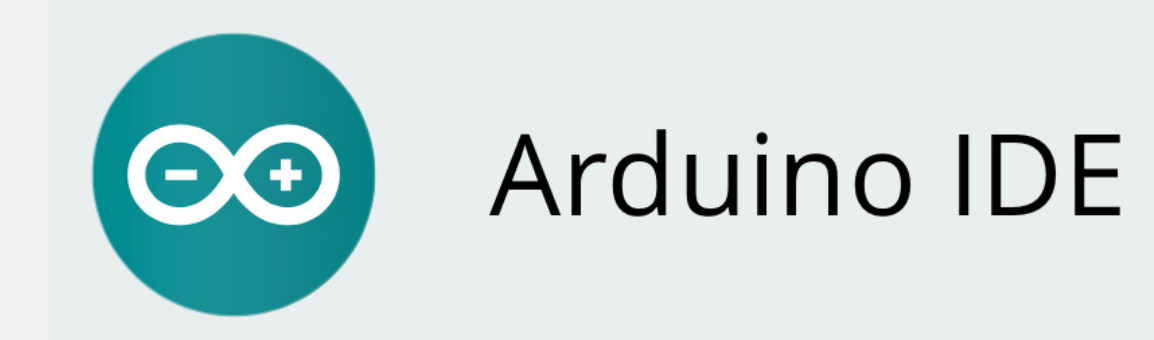




USB Drop Attack Awareness at FIU

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PROBLEM

A USB Drop Attack is a social engineering attack that exploits the curiosity of users by strategically placing a USB flash drive in high-volume areas. These attacks can lure employees into accidentally injecting malware, spyware, or even sabotaging systems. Despite their risks, many organizations fail to train and advocate to employees the risk they can run in situations such as USB Drop Attacks.

System Design

3D Print: Our case was created using 3D printing to disguise the Digispark into a harmless flash drive.

Awareness Posters: A physical measure to keep users aware of the dangers they face plugging in unattended USB drives.

Awareness Message: The system is designed to automatically display a 'You've been hacked!' message in Notepad upon insertion of the DigiSpark Attiny85, causing users to learn from their mistake.

VERIFICATION

Effectiveness Testing: Conducting USB baiting attack scenarios, to verify that systems work.

Behavioral Observations: The analysis of employee behavior on how quick they can report an incident and any other suspicious activity to encourage safer user behavior.

User Feedback and Impact Assessment: Collect feedback from participating organizations to evaluate effectiveness and increase or decrease in incidents.

Instructor/Faculty: Masoud Sadjadi, Florida International University

CURRENT SYSTEM

Many companies conduct training sessions and establish security protocols with employees when they are first hired. However, these protocols can be forgotten over time, and smaller-sized companies can forget to update their systems and enforce a positive culture around cybersecurity to keep their data safe. This leads to nontechnical employees becoming vulnerable to these social engineering attacks.

OBJECT DESIGN

Digispark ATtiny85: Our physical and affordable microcontroller development board used to execute the awareness message onto user devices.

Arduino IDE: Was the tool used to write, compile, and upload the code to the DigiSpark using the C programming language.

SUMMARY

This project demonstrates how cybersecurity awareness training can be delivered inexpensively by showcasing physical and social engineering attack simulations. Our USB drop simulation highlights the effectiveness of hands-on learning in influencing and improving end-user security behaviors.

REQUIREMENTS

Deployment: The use of the Digispark USB would be easy and cost effective to the users, to represent what these attacks do.

Scalability: This awareness initiative should support deployments around small, mid-size, and large companies.

Customization: Companies have the abilities to tailor the Digispark to any specific environment that they may specialize in.

Compliance & Standards: The initiative aligns with the NIST Cybersecurity Framework and its educational goals.

User Accessibility: Our posters and awareness messages are jargon-free to best suit non-technical users.

IMPLEMENTATION

Digispark Creation: The Arduino IDE was used to program the Digispark with scripts that display a Cybersecurity awareness message once inserted.

Integration: Collaborated with management to discuss potential deployment methods to raise Cybersecurity awareness amongst staff.

Testing: Deploying USB's strategically and recording data of who fell for the bait and may need more training.

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