USB PHYSICAL
SECURITY SOFTWARE

PROJECT REPORT

BATCH–23EO5

ST#IS#6651
ST#IS#6652
ST#IS#6653
ST#IS#6654

GitHub Repository-

https://github.com/satvikx/Project-USB

WHAT IS IT?

The USB Physical Security Software is designed to enhance the security of computer systems by regulating USB access based on predefined policies and geofencing parameters.

USB devices are widely utilized for data transfer on different systems, but they can also pose a major security threat. Malicious individuals take advantage of the natural trust in USB devices to insert malware, steal information, or disrupt activities. Utilizing data mining methods on USB behavior patterns from various devices allows us to create a system that can detect possible risks and weaknesses. This system is designed to examine data transferred through USB devices and identify potentially malicious behavior that may suggest attempted exploitation.

FEATURES

The USB Physical Security Software is designed to enhance the security of computer systems by regulating USB access based on **predefined policies** and **geofencing** parameters. The software integrates various security measures such as **Role-Based Access Control (RBAC), geofencing, auditing**, and **logging** to monitor and manage USB device usage across multiple users. Developed entirely using Python and Batch scripts, this software provides a **user-friendly graphical interface** built with Tkinter, while SQLAlchemy is employed for robust **database management.** This section outlines the detailed implementation of the software, describing its modular components and overall system architecture.

Bash Files

Bash Scripts are text files containing a series of commands that are executed by the Unix shell, known as "bash" (Bourne Again SHell). These scripts are often used to automate repetitive tasks, manage system operations, or configure software environments. Bash scripts are powerful tools in systems administration and software development due to their simplicity and flexibility in executing command-line instructions, processing text, managing files, and interacting with the operating system.

TECH STACK

This is a python based application and the tech stack is as follows-
1. GUI (Tkinter)
2. DataBase (SQLAIchemy/SQLite)
3. Location - Brower Geolocation API, geopy