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IT360: Information Assurance and Security

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1 Introduction

- Given their ability to secretly record keystrokes and compromise critical data, keyloggers pose a serious danger to cybersecurity. As a result, the goal of our project is to create a complete defense against keylogging assaults.

1.1 Project Goal

- Our project's objective is to build a functional keylogger in order to better understand its workings and develop countermeasures.

2 Tools and Technologies

- We will use state-of-the-art instruments and technology designed specifically to counter keylogging risks in order to accomplish our project's goal:

2.1 Integrated Development Environment (IDE): Visual Studio Code/Pycharm

- **Description**: For coding activities, Visual Studio Code (VS Code) provides an environment that is both feature-rich and adaptable. While Pycharm is designed specifically for python programming.We will be alternating between the two tools to develop the program.

2.2 Version Control System: GitHub

- **Description**: Strong version control features offered by GitHub facilitate teamwork and allow us to keep track of changes made to our software.
- **Purpose**: Guarantees code integrity, promotes teamwork, and offers a forum for code review and comments.

2.3 Programming Languages

- **Python**: High-level programming language is known for its simplicity and readability, ideal for rapid and easy development of keyloggers. We will use python libraries such as **pynput** because it contains pre-built functions and modules that will simplify keylogging implementation.

2.4 Project Management Tool

- **Windows application programming interface (API)**
  - **Description**: The Windows API, informally WinAPI, is the foundational application programming interface (API) that allows a computer program to access the features of the Microsoft Windows operating system in which the program is running.
  - **Purpose**: Facilitates task tracking, allocation, and progress monitoring throughout the development lifecycle.

3 Development Phases

3.1 Planning Phase

- **Objective**: By recording keystrokes, keyloggers let the user keep an eye on the victim's computer activity.
- **Activities**: Stakeholder meetings, project scope definition, milestone establishment.

3.2 Development Phase

- **Objective**: Execute keylogger features in accordance with the specified specifications.
- **Activities**: Environment setup, code writing (Python, Latex), continuous integration, and testing.

3.3 Testing Phase

- **Objective**: Verify the robustness and functionality of the keylogger.
- **Activities**: Creation of test cases, discovery and correction of bugs, and unit, integration, and system testing.

3.4 Deployment Phase

- **Objective**: Get the keylogger program ready for presentation.
- **Activities**: Software should be packaged with documentation, tested by users, and then deployed to specific environments.

4 Conclusion

- Our project is to successfully create and deploy keylogger countermeasures by utilizing cutting-edge tools and adhering to a methodical strategy throughout the development phases. Throughout the software development lifecycle, this all-encompassing approach guarantees effectiveness, quality, and adherence to project objectives.