STEGANOGRAPHY

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KEY LOGGER AND SECURITY

*UNDERSTANDING AND MITIGATING KELOGGING THREATS

AGENDA

- INTRODUCTION
- STATEMENT OF THE ISSUE
- OVERVIEW OF THE PROJECT
- TARGET AUDIENCE
- PROPOSED SOLUTION AND BENEFITS
- MODELING APPROACH
- OUTCOMES
- CLOSING THOUGHTS

ISSUE DESCRIPTION

- ISSUE:
- KEYLOGGERS POSE A SUBSTANTIAL CYBERSECURITY THREAT,
- RESULTING IN UNAUTHORIZED ACCESS TO CONFIDENTIAL INFORMATION,
- IDENTITY THEFT, AND FINANCIAL FRAUD.
- CONSEQUENCES:
- THIS IMPACTS INDIVIDUALS, BUSINESSES, AND ORGANIZATIONS BY JEOPARDIZING DATA PRIVACY AND SECURITY.

PROJECT OVERVIEW

- OBJECTIVE:

- DEVELOP A COMPREHENSIVE UNDERSTANDING OF KEYLOGGERS,
- THEIR TYPES, HOW THEY WORK, AND EFFECTIVE SECURITY MEASURES TO
- PREVENT KEYLOGGING ATTACKS.

- SCOPE:

- INCLUDES AN ANALYSIS OF HARDWARE AND SOFTWARE KEYLOGGERS,
- LEGAL AND ETHICAL IMPLICATIONS, SECURITY MEASURES, AND BEST PRACTICES.

WHO ARE THE END USERS

- INDIVIDUALS: CONCERNED ABOUT PERSONAL DATA SECURITY AND PRIVACY.
- BUSINESSES: NEED TO PROTECT CORPORATE DATA AND ENSURE COMPLIANCE WITH SECURITY STANDARDS.
- ORGANIZATIONS: REQUIRE ROBUST SECURITY MEASURES TO SAFEGUARD SENSITIVE INFORMATION.
- SECURITY PROFESSIONALS: AIM TO UNDERSTAND AND MITIGATE KEYLOGGING THREATS.

SOLUTION AND ITS SUGGESTIONS

- TO AVOID KEYLOGGERS
- USE ANTI VIRUS PROGRAM
- USE PASSWORD MANAGER
- USE MULTI FACTOR AUTHENTICATION
- USE A FIREWALL
- AVOID SUSPICIOUS LINKS AND DOWNLOADS
- CHANGE PASSWORD PERIODICALLY
- UPDATE YOUR SYSTEM
- USE VIRTUAL KEYBOARD TO TYPE PASSWORDS AND SENSITIVE INFORMATION

MODELING

- ARCHITECTURE OVERVIEW:
- MODULAR DESIGN: THE KEYLOGGER CODE IS STRUCTURED INTO MODULAR FUNCTIONS FOR BETTER READABILITY AND MAINTENANCE.
- EVENT HANDLING: UTILIZES THE PYNPUT LIBRARY TO CAPTURE AND HANDLE KEYBOARD EVENTS.
- DATA LOGGING: IMPLEMENTS FUNCTIONS TO LOG CAPTURED DATA INTO TEXT AND JSON FILES.

MODELING

- COMPONENTS:
- KEY PRESS HANDLING: FUNCTION: ON_PRESS(KEY)
- DESCRIPTION: CAPTURES AND LOGS THE PRESSED KEYS.
- DETAILS: APPENDS KEY PRESS EVENTS TO A LIST AND UPDATES THE JSON LOG FILE.

- KEY RELEASE HANDLING: FUNCTION: ON_RELEASE(KEY)
- DESCRIPTION: CAPTURES AND LOGS THE RELEASED KEYS.
- DETAILS: APPENDS KEY RELEASE EVENTS TO A LIST, UPDATES THE JSON LOG FILE, AND ACCUMULATES KEYS FOR THE TEXT LOG.

- LOGGING FUNCTIONS:
- TEXT LOGGING: GENERATE_TEXT_LOG(KEY)
- DESCRIPTION: WRITES THE RECORDED KEYS TO KEY_LOG.TXT.
- JSON LOGGING: GENERATE_JSON_FILE(KEYS_USED)
- DESCRIPTION: DUMPS THE LIST OF KEY EVENTS TO KEY_LOG.JSON.

MODELLING

- GUI INTEGRATION:

TKINTER FRAMEWORK: UTILIZES TKINTER FOR CREATING A GRAPHICAL USER INTERFACE.
USER INTERACTION:
START BUTTON: INITIATES THE KEYLOGGER.
STOP BUTTON: STOPS THE KEYLOGGER.
STATUS UPDATES: PROVIDES REAL-TIME FEEDBACK ON THE STATUS
OF THE KEYLOGGER (RUNNING/STOPPED).

RESULTS

SUCCESSFULLY IMPLEMENTED A KEYLOGGER THAT CAPTURES KEYSTROKES AND RECORDS THEM INTO BOTH TEXT AND JSON FILES.

REAL-TIME KEYLOGGING WITH START AND STOP FUNCTIONALITY CONTROLLED VIA A SIMPLE GUI.

THE KEYLOGGER PROJECT DEMONSTRATED THE CAPABILITY TO EFFECTIVELY CAPTURE AND LOG KEYSTROKES IN REAL-TIME.

THE GUI PROVIDED A USER-FRIENDLY WAY TO CONTROL THE KEYLOGGER, MAKING IT ACCESSIBLE AND EASY TO USE.

EMPHASIZED THE ETHICAL USE OF KEYLOGGERS AND THE IMPORTANCE OF IMPLEMENTING SECURITY MEASURES TO PROTECT AGAINST MALICIOUS USE.

THANK YOU

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