"""

Simple Intruder/Virus Detection Simulation Tool

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This educational Python tool simulates a simple intrusive pattern detection on files,

using only built-in Python modules available in IDLE by default.

HOW IT WORKS:

- It scans files in a specified directory.

- Checks for suspicious keywords/patterns inside the file contents (like 'virus', 'malware', 'hack').

- Reports files that contain these suspicious patterns as potentially infected.

This is a very basic simulation and NOT a replacement for real antivirus or IDS software.

Designed for beginners to understand concepts of scanning and detecting suspicious content.

USAGE:

- Place sample text files in a folder.

- Run this script, enter folder path.

- The tool scans and reports suspicious files.

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"""

import os

# Define suspicious keywords that might indicate infection (as example)

SUSPICIOUS\_PATTERNS = ['virus', 'malware', 'trojan', 'hack', 'worm', 'exploit', 'backdoor']

def scan\_file\_for\_intrusions(filepath):

"""

Scan a single file for suspicious keywords.

Parameters:

- filepath: Full path to the file to scan.

Returns:

- True if suspicious pattern found, False otherwise.

"""

try:

with open(filepath, 'r', encoding='utf-8', errors='ignore') as file:

content = file.read().lower()

for pattern in SUSPICIOUS\_PATTERNS:

if pattern in content:

return True

except Exception as e:

# Could not read file, maybe binary or permission issue, skip it

return False

return False

def scan\_directory(directory):

"""

Scan all files in a directory recursively for suspicious patterns.

Parameters:

- directory: Path to the directory to scan.

Returns:

- List of file paths flagged as suspicious.

"""

suspicious\_files = []

for root, dirs, files in os.walk(directory):

for filename in files:

filepath = os.path.join(root, filename)

if scan\_file\_for\_intrusions(filepath):

suspicious\_files.append(filepath)

return suspicious\_files

def main():

print("=== Simple Intruder/Virus Detection Simulation ===")

directory = input("Enter path to directory to scan: ").strip()

if not os.path.isdir(directory):

print("Invalid directory path. Please try again.")

return

print("\nScanning files... This may take a while for large folders.\n")

flagged\_files = scan\_directory(directory)

if flagged\_files:

print(f"Suspicious files detected ({len(flagged\_files)}):")

for f in flagged\_files:

print(f" - {f}")

else:

print("No suspicious files detected.")

print("\nScan complete. Remember, this is a simple simulated tool for educational purposes only!")

if \_\_name\_\_ == "\_\_main\_\_":

main()