

Ex.No.8 Use Steg-Expose to detect hidden data in images

AIM:

To hide a secret text message inside an image file and extract it back using Stegosuite in Kali Linux.

PROCEDURE:

StegExpose is a tool used to detect hidden data in images using steganography analysis. It works by evaluating the statistical properties of an image to estimate whether any hidden data is embedded.

Below is a step-by-step guide on how to use StegExpose to detect hidden data in images:

Prerequisites:

1. **Java Runtime Environment (JRE):** StegExpose is a Java-based tool, so ensure you have JRE installed.
2. **StegExpose Tool:** Download StegExpose from the [official GitHub repository](#).

Step-by-Step Process:

1. Download and Set Up StegExpose:

- **Download the tool:** Go to [StegExpose GitHub](#) and download the .jar file.
- **Install Java:** Ensure that Java is installed on your machine. You can download it from the official site.
- **Prepare environment:** Place the .jar file in a folder where you plan to work on the image files.

Software Requirements

1. **Java Development Kit (JDK 8 or higher)** StegExpose is Java-based, so java and javac must be installed.

Windows:

```
choco install openjdk
```

Ubuntu/Linux:

```
sudo apt update
```

```
sudo apt install default-jdk
```

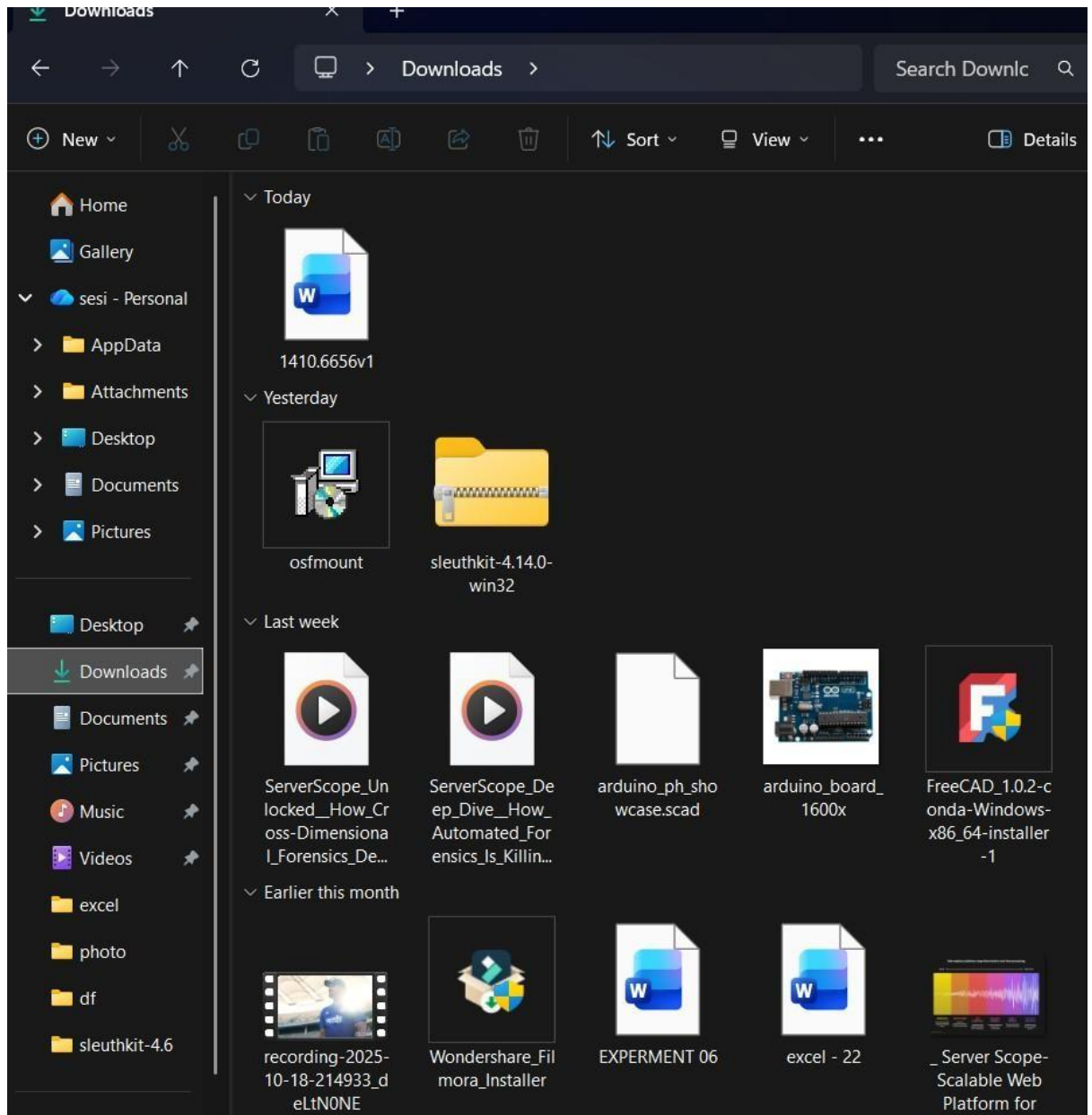
macOS:

```
brew install openjdk
```

Verify installation:

```
java -version
```

```
javac -version
```



Step 1 — Compile the Source Code :

Compile the Java files with the required dependency:

```
-javac -cp commons-math3-3.1.1.jar -source 1.8 -target 1.8 *.java
```

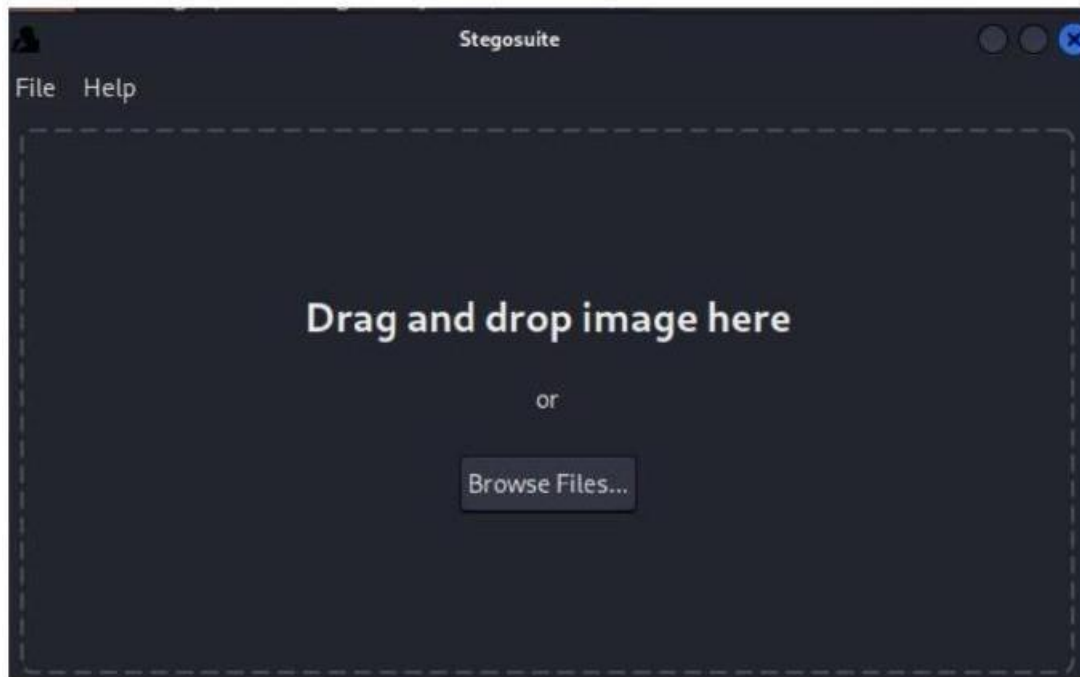
Compilation is successful if .class files are generated.

Step 2 — Create the Executable JAR


By using Notepad Create a file named manifest.mf in the same folder:

Step 3 — Run StegExpose

```
—(kali@kali)—[~]  
$ stegosuite gui
```



< Stegosuite



version: 0.9.0 arch: all

[Stegosuite Homepage](#) | [Package Tracker](#)
[Source Code Repository](#)
[Edit This Page](#)

Metapackages

- everything

Tools:

- crypto-stego

Packages and Binaries:

stegosuite

Stegosuite is a graphical steganography tool to easily hide information in image files. It allows the embedding of text messages and multiple files of any type. In addition, the embedded data is encrypted using AES. Currently supported file types are BMP, GIF, JPG and PNG. Stegosuite is written in Java and utilizes the SWT toolkit for its interface.

Installed size: 279 KB
How to install: `sudo apt install stegosuite`

Dependencies:

\$ stegosuite

Steganography tool to hide information in image files

Step 4 — Example Output

```

(kali@kali)-[~]
$ stegosuite gui
Loading jpg image from /home/kali/Downloads/Yamirukka-Bayamen-Tamil-A4-Muruga
n-Poster-For-Room-1-scaled.jpg
Saving jpg image to /home/kali/Downloads/Yamirukka-Bayamen-Tamil-A4-Muruga-P
oster-For-Room-1-scaled_embed.jpg
(kali@kali)-[~]
$ stegosuite gui

```

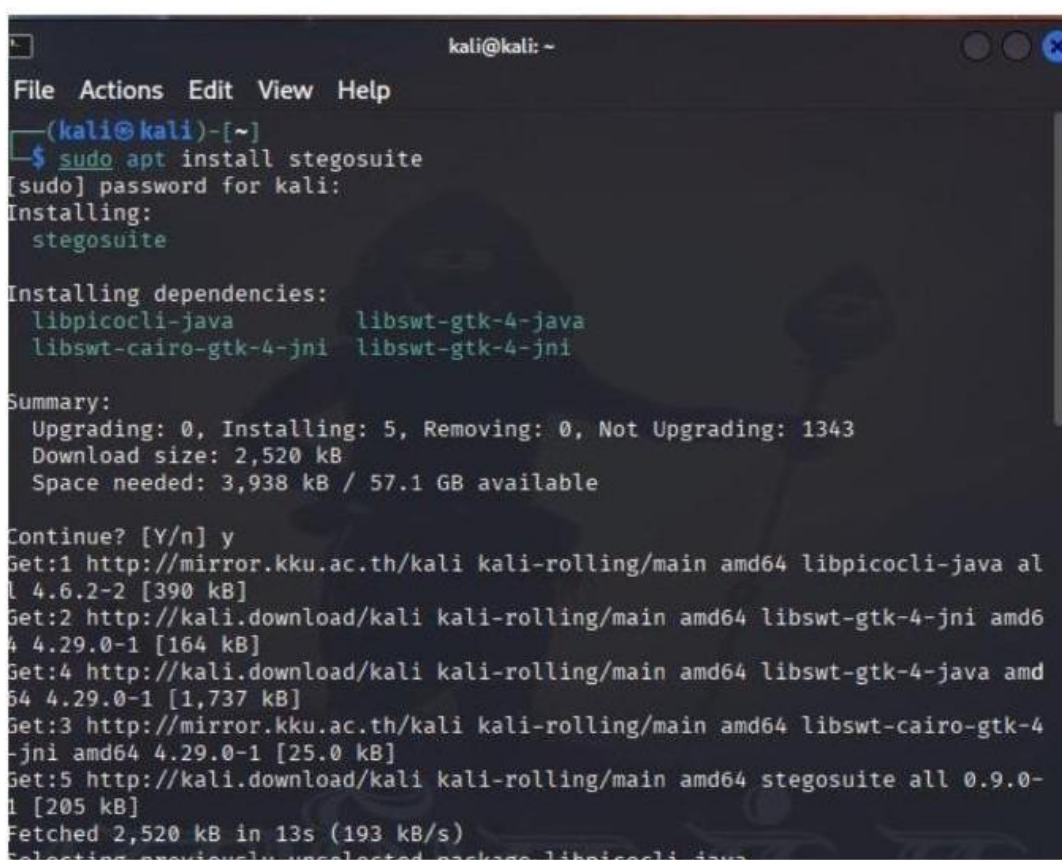
Step 5 — Analyze and Verify Results

The tool lists images with potential hidden data and estimates the approximate size. Further validation can be done using tools such as:

- StegSolve
- OpenStego
- zsteg
- Binwalk

Optional — Export Results Automatically

Generate a results file for easier review:



```

kali@kali: ~
File Actions Edit View Help
(kali@kali)-[~]
$ sudo apt install stegosuite
[sudo] password for kali:
Installing:
  stegosuite

Installing dependencies:
  libpicocli-java      libswt-gtk-4-java
  libswt-cairo-gtk-4-jni libswt-gtk-4-jni

Summary:
  Upgrading: 0, Installing: 5, Removing: 0, Not Upgrading: 1343
  Download size: 2,520 kB
  Space needed: 3,938 kB / 57.1 GB available

Continue? [Y/n] y
Get:1 http://mirror.kku.ac.th/kali kali-rolling/main amd64 libpicocli-java al
l 4.6.2-2 [390 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 libswt-gtk-4-jni amd6
4 4.29.0-1 [164 kB]
Get:4 http://kali.download/kali kali-rolling/main amd64 libswt-gtk-4-java amd
64 4.29.0-1 [1,737 kB]
Get:3 http://mirror.kku.ac.th/kali kali-rolling/main amd64 libswt-cairo-gtk-4
-jni amd64 4.29.0-1 [25.0 kB]
Get:5 http://kali.download/kali kali-rolling/main amd64 stegosuite all 0.9.0-
1 [205 kB]
Fetched 2,520 kB in 13s (193 kB/s)
Selecting previously unselected package libpicocli-java

```

Result:

-
- Successfully compiled and executed StegExpose
 - Detected images containing potential hidden data.

