

CSCI – 297 Systems Programming

Assignment 3

Due 11:59 PM, Nov 2, 2023

In this assignment, you will be working with the **gdb**, **ldd**, **ltrace** and **strace** utilities in Linux. In the last assignment we looked generating a symbol table with specific entries. In this one, you will be working with precompiled executables and inspecting them. In addition to the utilities listed above, you may also use the **readelf** or **objdump** utilities.

Before you start, please make sure to set up your environment correctly. While **gdb** and **ldd** are already installed, you may have to install **ltrace** and **strace**. You can use the following command on your AWS VM to install these additional utilities:

```
sudo apt update && sudo apt install ltrace strace -y
```

Task 1:

You have been provided with 4 executable files, each which has a secret encoded in them. Your job is to extract the secrets by using the tools mentioned above, as well as hints from executing the program. Hint: You may need to get creative to extract the secrets :)

For the deliverables you need to create and fill out two files in your **secrets.txt** and **howto.txt**. The **secrets.txt** should have the following format:

```
0: this
1: is
2 : my
3: secret
```

In the **howto.txt** you must describe in English your process on how you found the secret for that given executable. Each individual howto should be on one more lines, after a line with only the executable number and a period on it. The following is an example on how to format the **howto.txt**.

```
0.
This was the really easy one. You had to run it and then type in the secret
of life.
1.
For this one, I had to:
* Run a specific unix utility to learn some specific information
* Perform some specific task that I found out about by checking part of a
specific line in the output of the unix utility.
...
```

Submission Instructions:

Submit your completed **secrets.txt** and **howto.txt** on Canvas under the Assignment 3 tab.