CSE 5474 — Software Security Spring 2022

Warmup CTF

Due 11:59PM January 28th (Friday), 2022

1 Overview

In this CTF, you are given four challenges (`week2_warmup_level1`, `week2_warmup_level2`, `week2_warmup_level3`, and `week2_warmup_level4`). You need to reverse engineer each binary, figure out the special input you need to enter, in order to let the program print out the flags you want. You can use static analysis with `objdump` or `ghidra`, or dynamic analysis with `gdb`, or symbolic execution with `angr`. For beginners, `ghidra` might be a good starting point, but please get used to `gdb` and `objdump`.

2 Tutorial

Please register your account with any username and password. However, please add your OSU email to your account information for grading purpose.

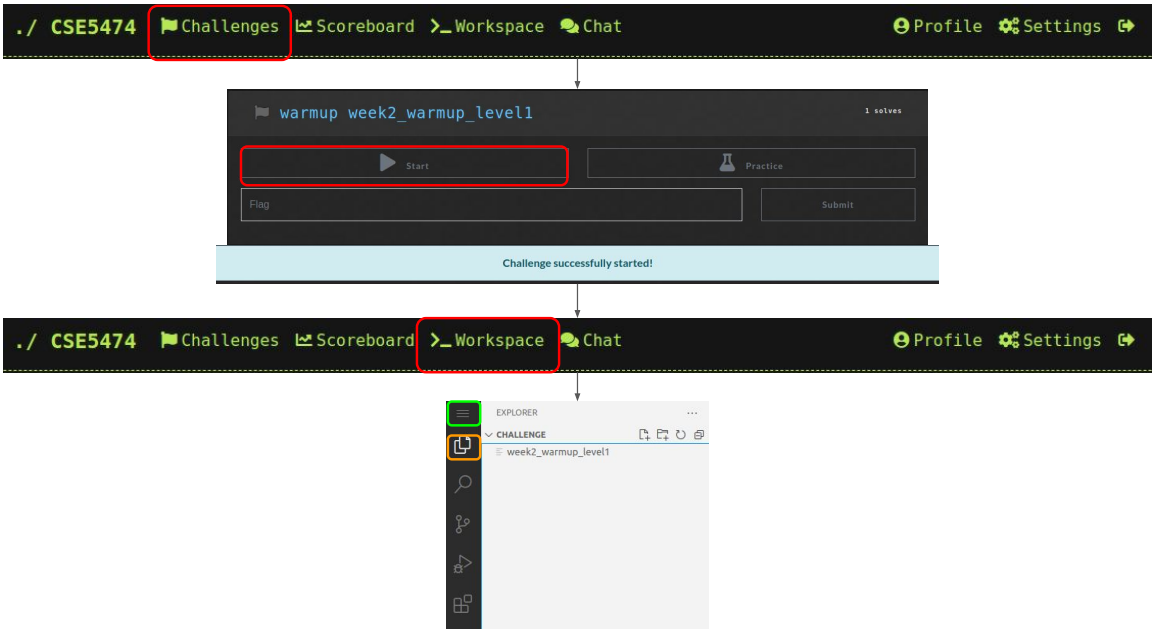

Figure 1: How to execute challenges.

To use the CTF website properly, as shown in Figure 1, click challenges and start button on a challenge you want to solve. Next, please wait until the color has changed to pink or the message '`challenge successfully started!`' shows up. Then, you can click workspace. You

can download a binary (click orange box → find out binary and right click → download) or open terminal directly (click green box → terminal → new terminal), as shown in Figure 2. You can find out the binary in `/challenge` directory. Please follow the step presented in Figure 3.

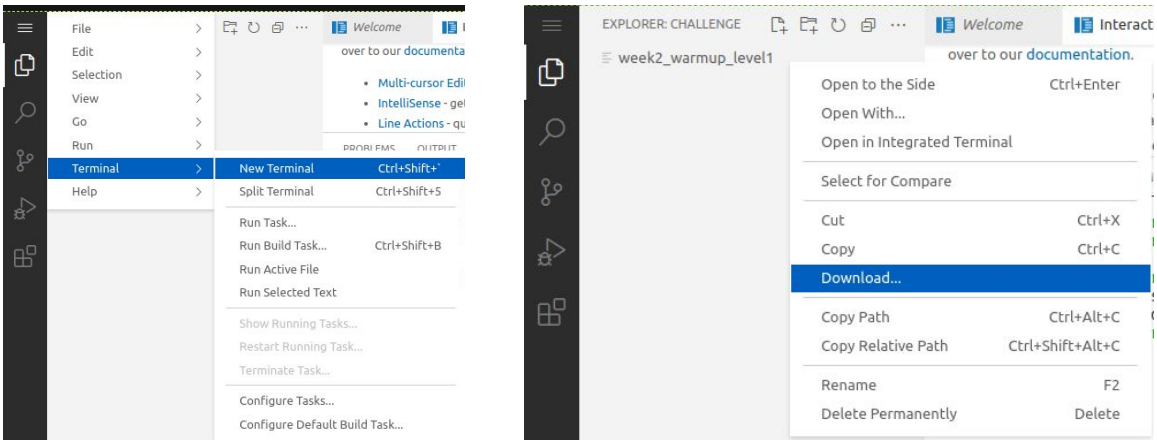

Figure 2: How to download a binary and open a terminal.

```
hacker@warmup_week2_warmup_level1:~$ cd /challenge/
hacker@warmup_week2_warmup_level1:/challenge$ ls
week2_warmup_level1
hacker@warmup_week2_warmup_level1:/challenge$ ./week2_warmup_level1
Please provide the password
Usage: <this> <password>
```

Figure 3: The directory where a challenge is stored.

3 Deliverables

The flags you captured, and please submit them in `https://cse5474.osuseclab.com`, and the writeup describing how you solve these challenges. **Please also attach your code in your write up, and package them together**. The writeup will be submitted in CARMEN by Jan 28th.

Please note that The latex template of writeup can be found at `https://www.overleaf.com/read/cfckkqgjrvqb` (you can make a copy of the template in overleaf and then write your own)