Memory Hacking

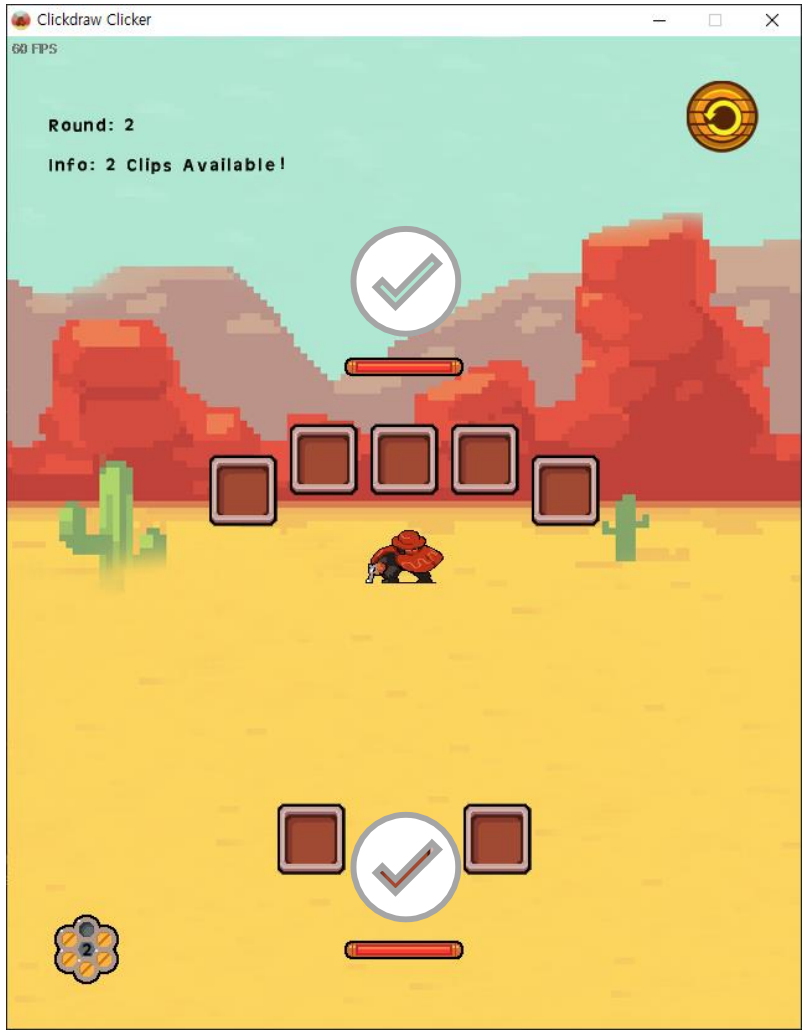
[with Cheat Engine]

이다영

메모리 해킹?

: 메모리에 접근하여 저장된 값을 수정하거나 코드를 끼워넣는 메모리 변조

Memory Hacking



메모리 변조의 원리

01 프로세스의 메모리 불러오기

02 원하는 값 스캔

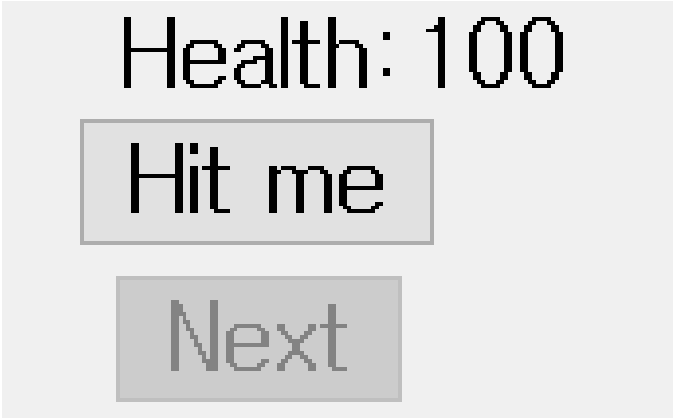
03 그 값을 자신이 원하는 값으로 변경

➡ 메모리 스캐너를 이용하여 값을 수정

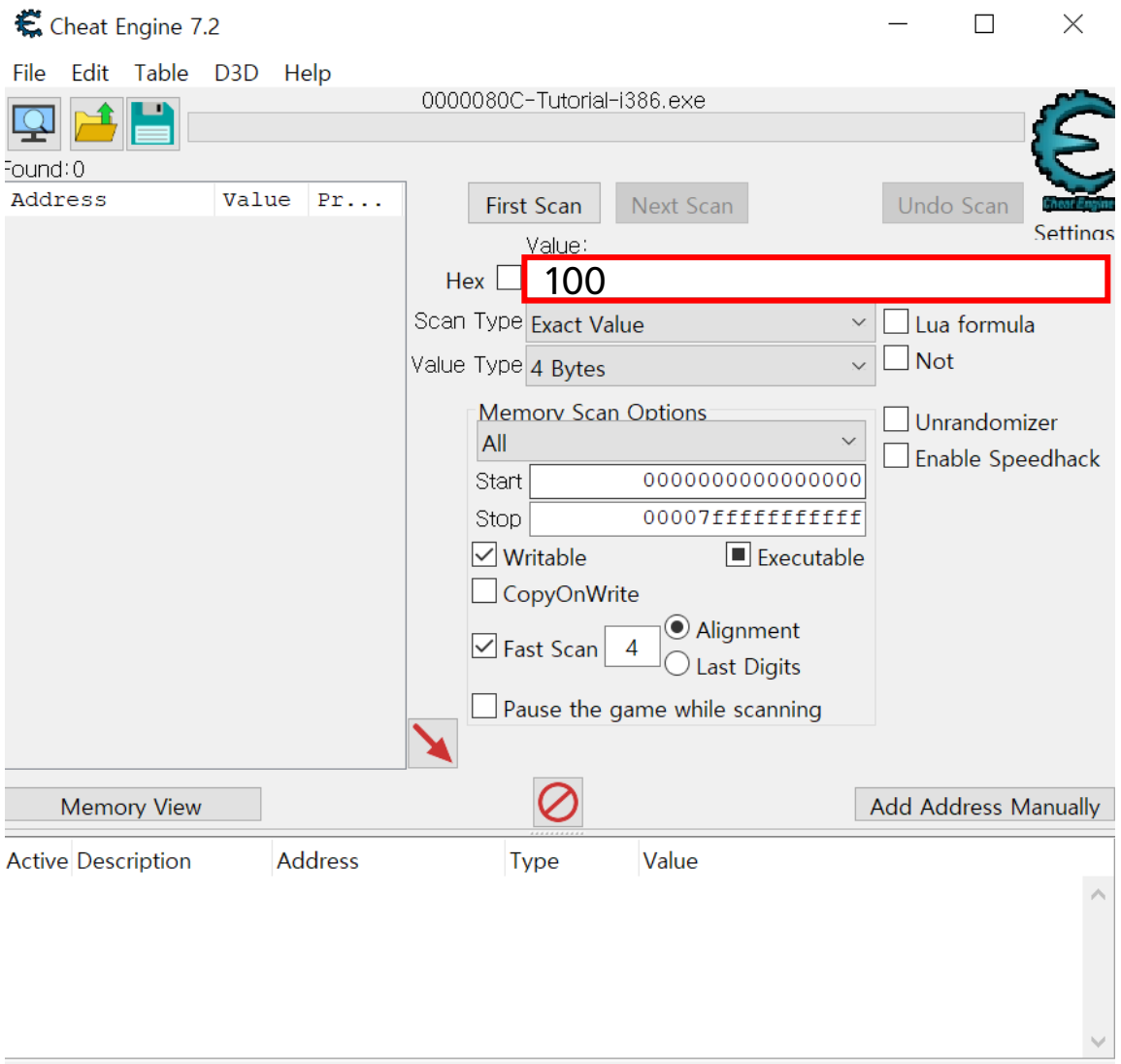
→ 치트엔진

[Level 1]

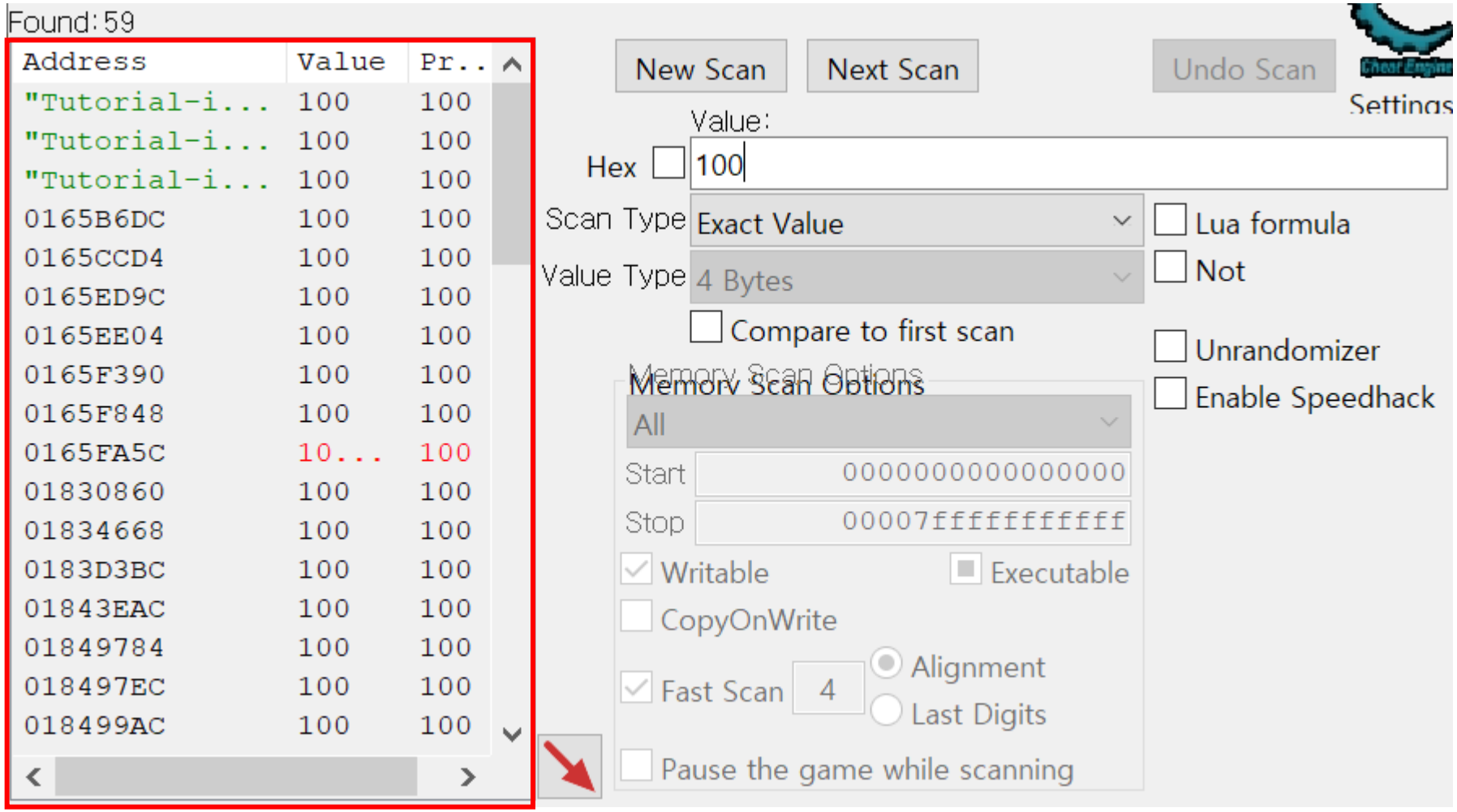
100으로 설정이 되어 있는 체력 (Health) 값을 1000으로 바꾸자



Memory Hacking



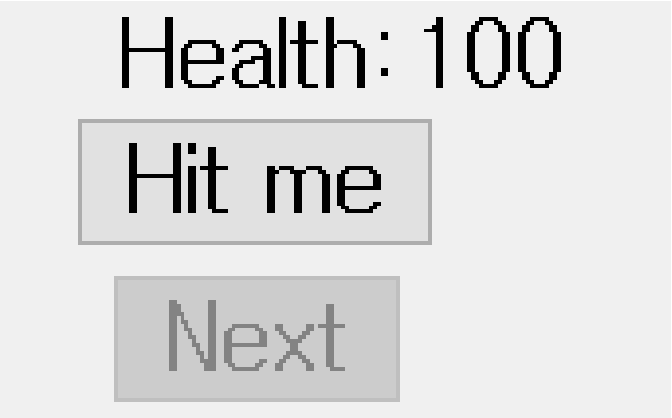
Memory Hacking

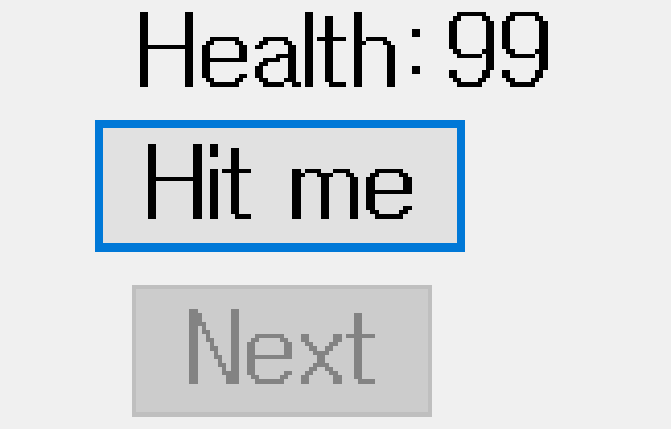


Memory Hacking

Found: 59

Address	Value	Pr..
0184CE20	100	100
01854BC8	100	100
0185D288	100	100
0185D6C8	100	100
0185D6E8	100	100
0185E96C	100	100
0185E98C	100	100
01889350	100	100
0188CD44	99	100
018B199C	100	100
019035F0	100	100
01903810	100	100
0192EF10	100	100
061336EC	100	100
06133870	100	100
0613396C	100	100
061339CC	100	100





Memory Hacking

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0184CE20	100	100
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0185E98C	100	100
01889350	100	100
0188CD44	99	100
018B199C	100	100
019035F0	100	100
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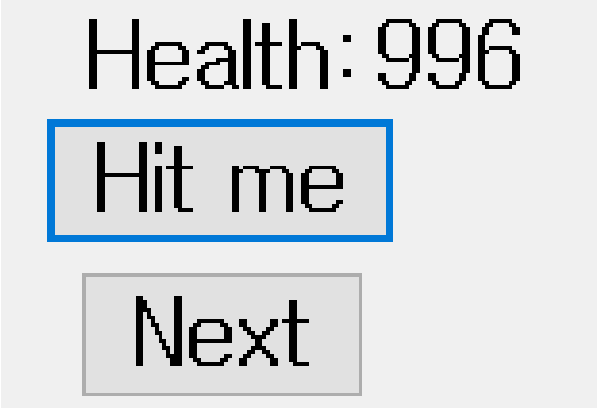
0185E98C	100	100
01889350	100	100
0188CD44	1000	100
018B199C	100	100
019035F0	100	100
01903810	100	100
0192EF10	100	100
061336EC	100	100
06133870	100	100
0613396C	100	100
061339CC	100	100



[Level 2]

값을 변경하는 기능을 무효화하여 Change value를 눌러도 값이 변경되지 않도록 하자

Address	Type
01894FE8	4 Bytes

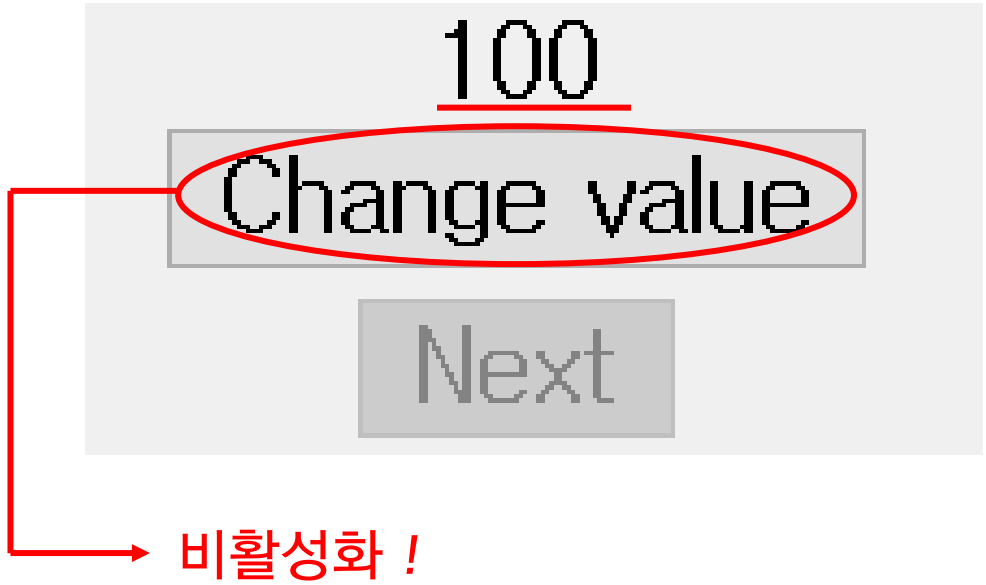
Address	Type
00145328	4 Bytes

ASLR(Address Space Location Randomization)

: 프로그램을 실행시킬 때마다 각 주소들이 바뀌는 메모리 보호 기법

"소지금의 주소가 동적이 아니라 고정이라면?"

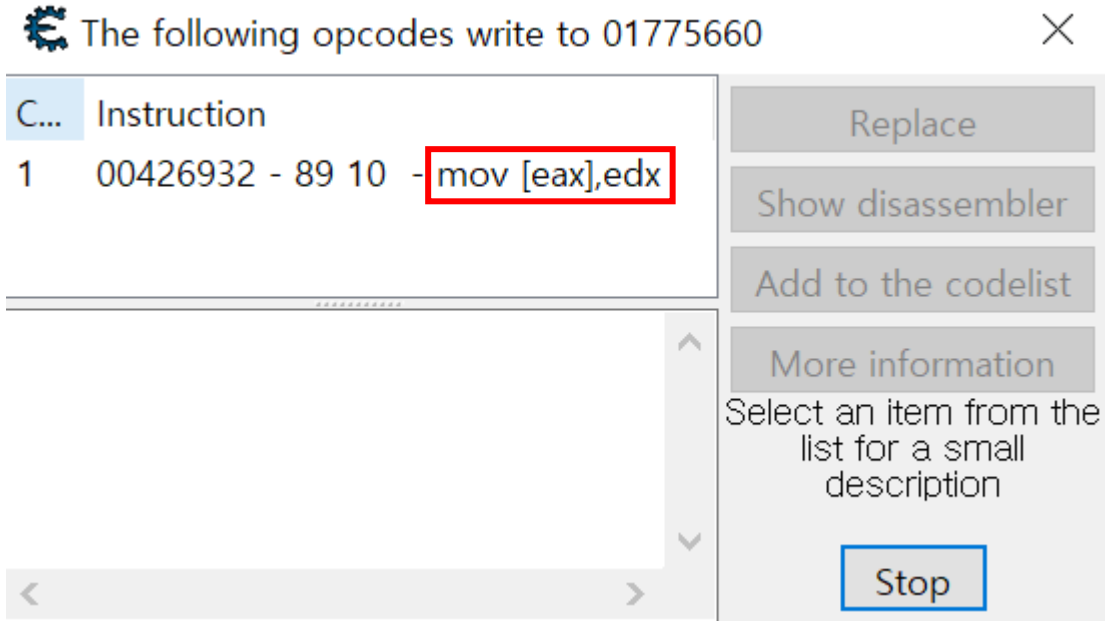
→ 소지금의 주소만 알아낸다면 메모리를 변조하여 소지금을 쉽게 변경할 수 있음

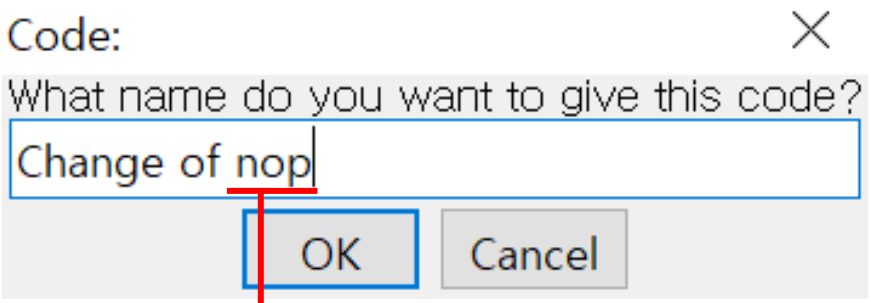

100
Change value
Next
비활성화 !

Find out what wirtes to this address

: 해당 변수에 접근하여 값을 변경하는 기능을 수행하는 어셈블리어를 찾는다

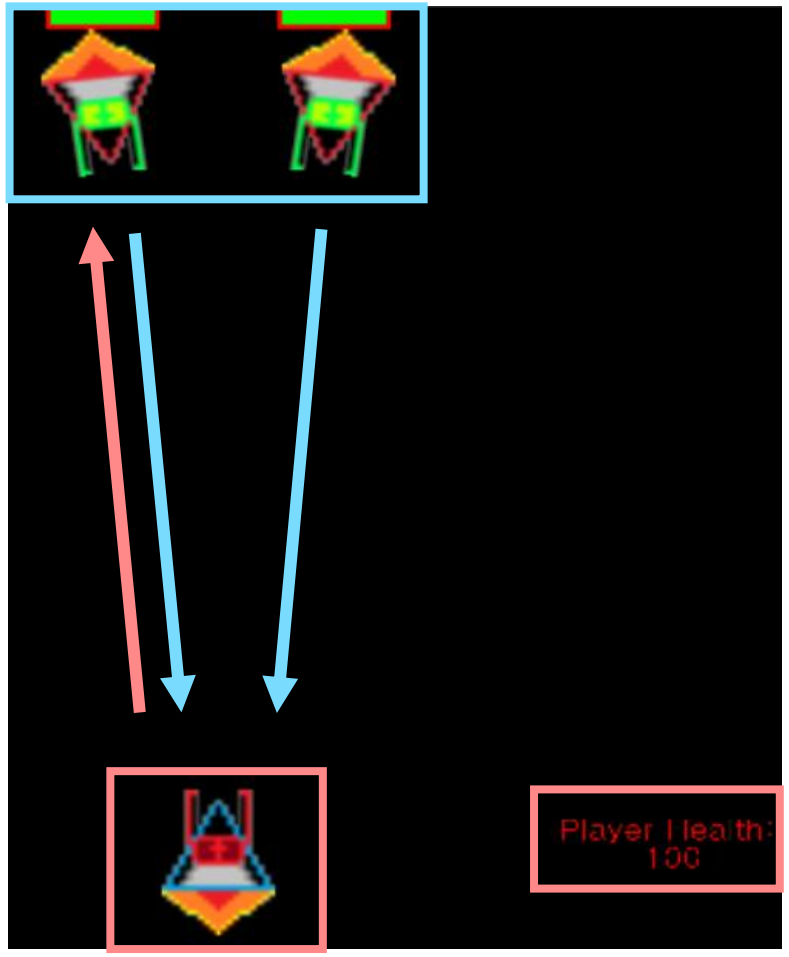
Change value

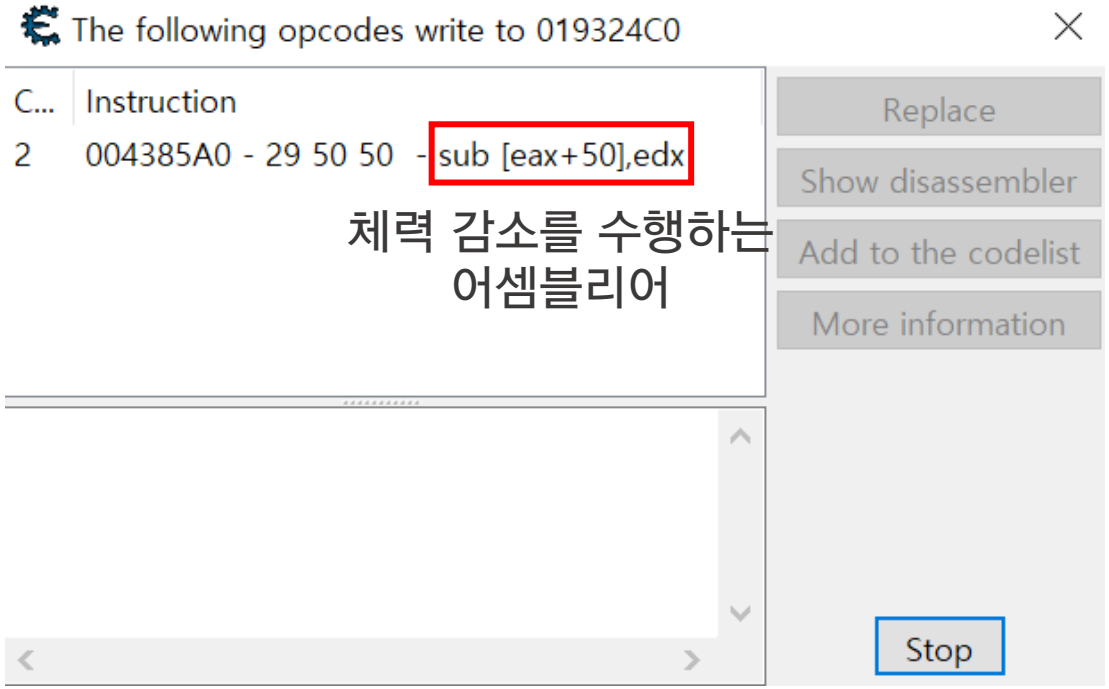




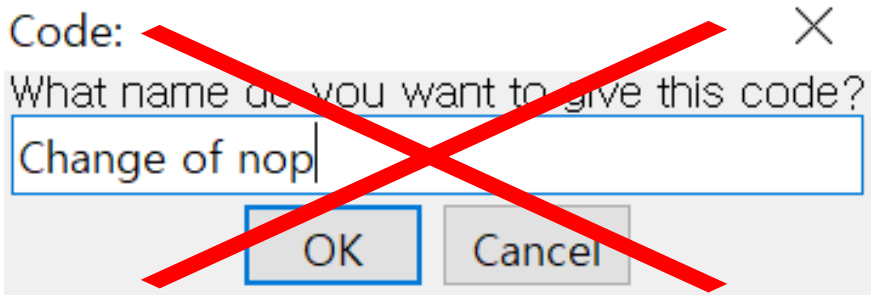
아무 것도 수행하지 않는 명령어

[Level 3]



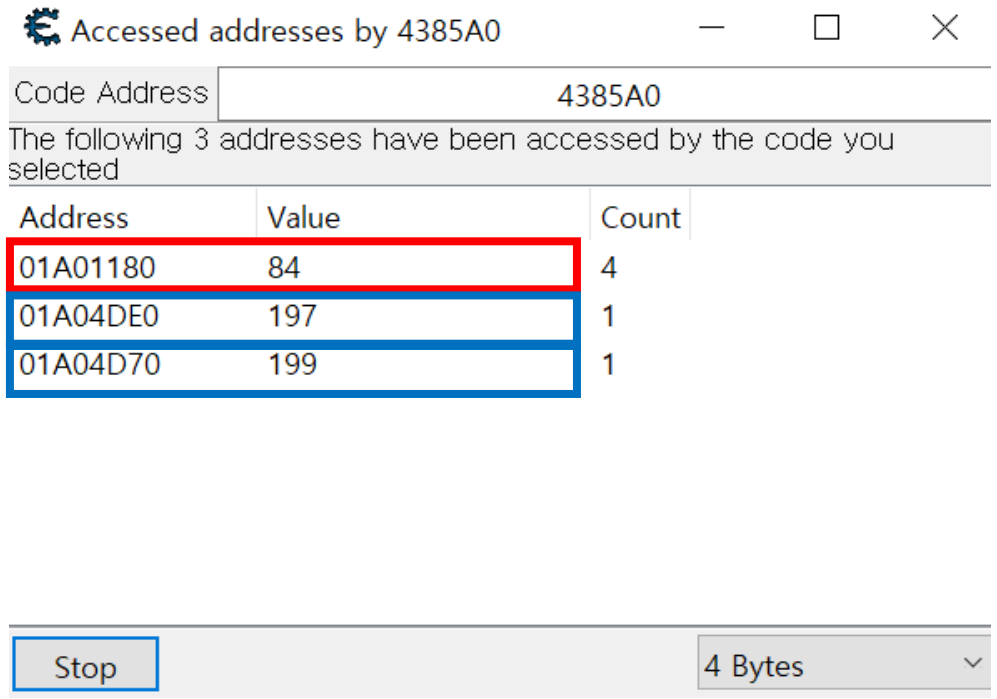


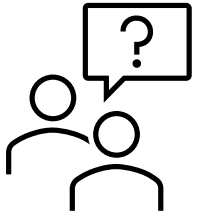
체력 감소를 수행하는
어셈블리어



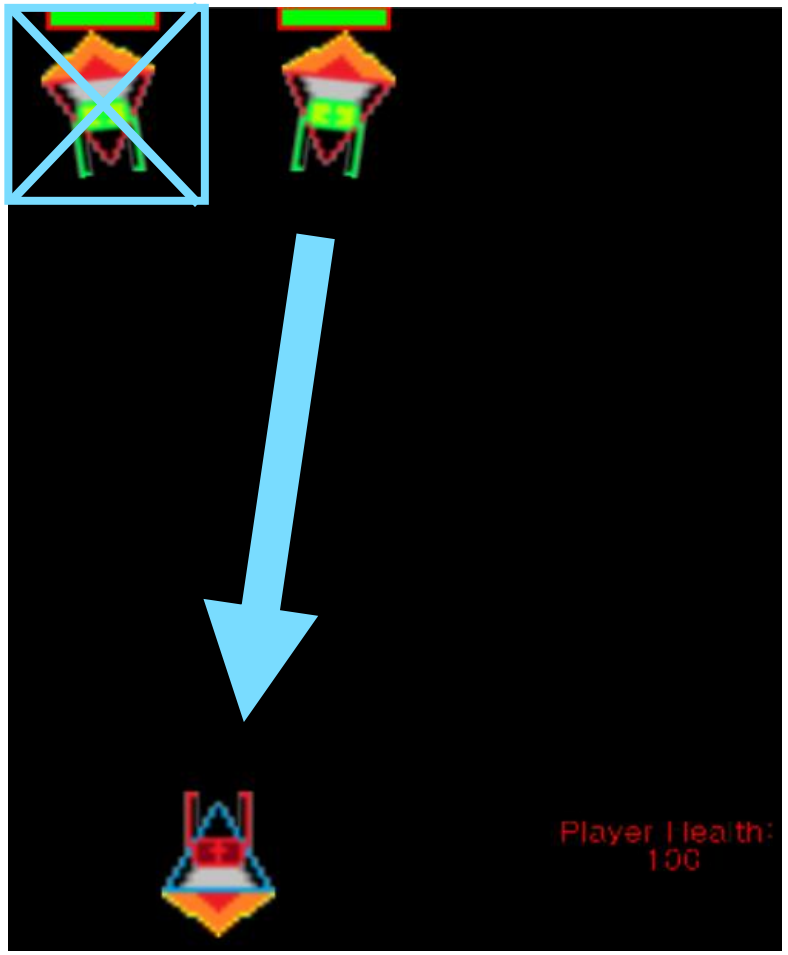
Find out what addresses this instruction accesses

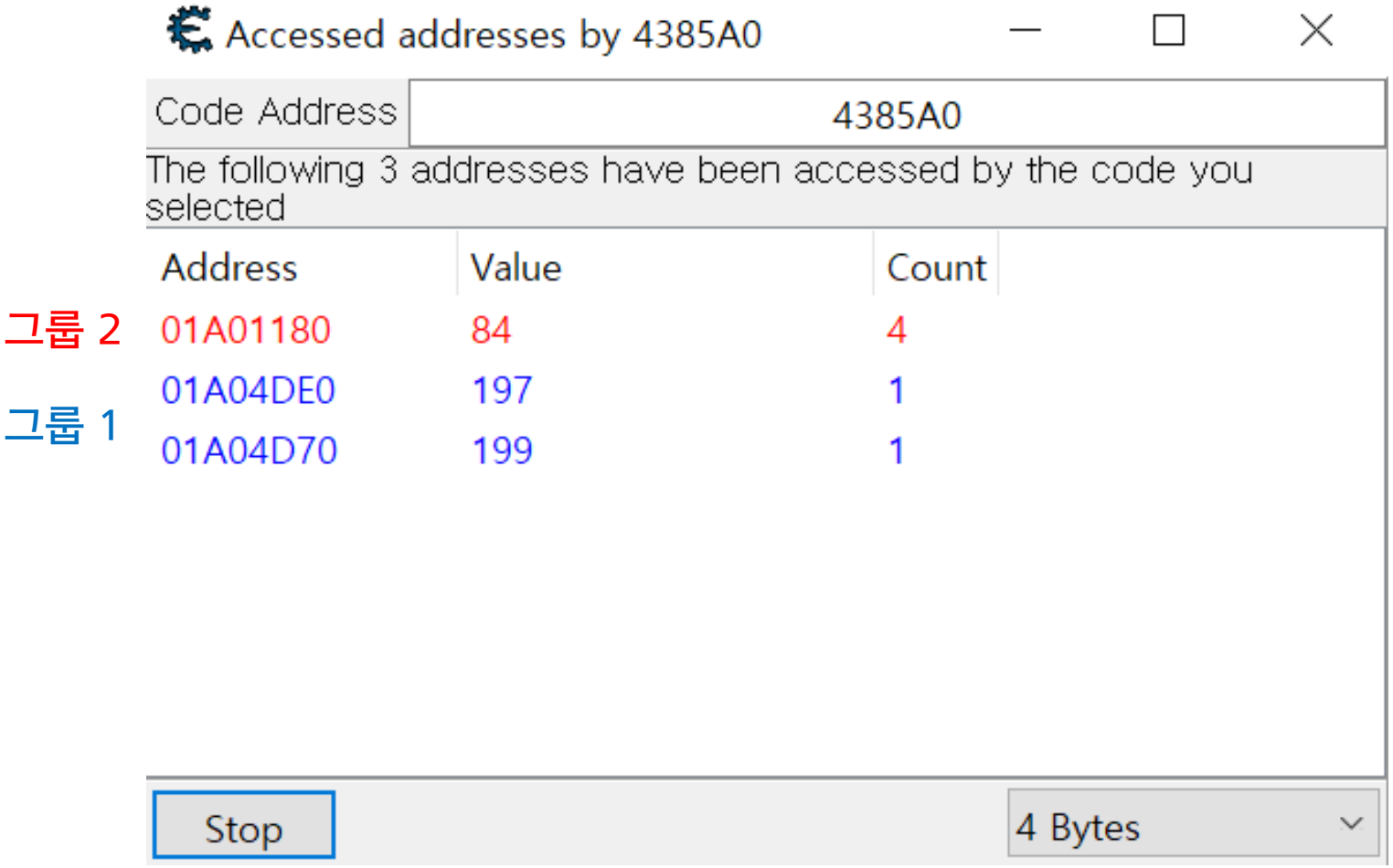
: 어셈블리어가 접근하는 데이터를 찾는다





“ 적들의 체력을 1로 바꾸자! ”




Accessed addresses by 4385A0
Code Address
4385A0
The following 3 addresses have been accessed by the code you selected
Address
Value
Count
그룹 2
01A01180
84
4
그룹 1
01A04DE0
197
1
01A04D70
199
1
Stop
4 Bytes

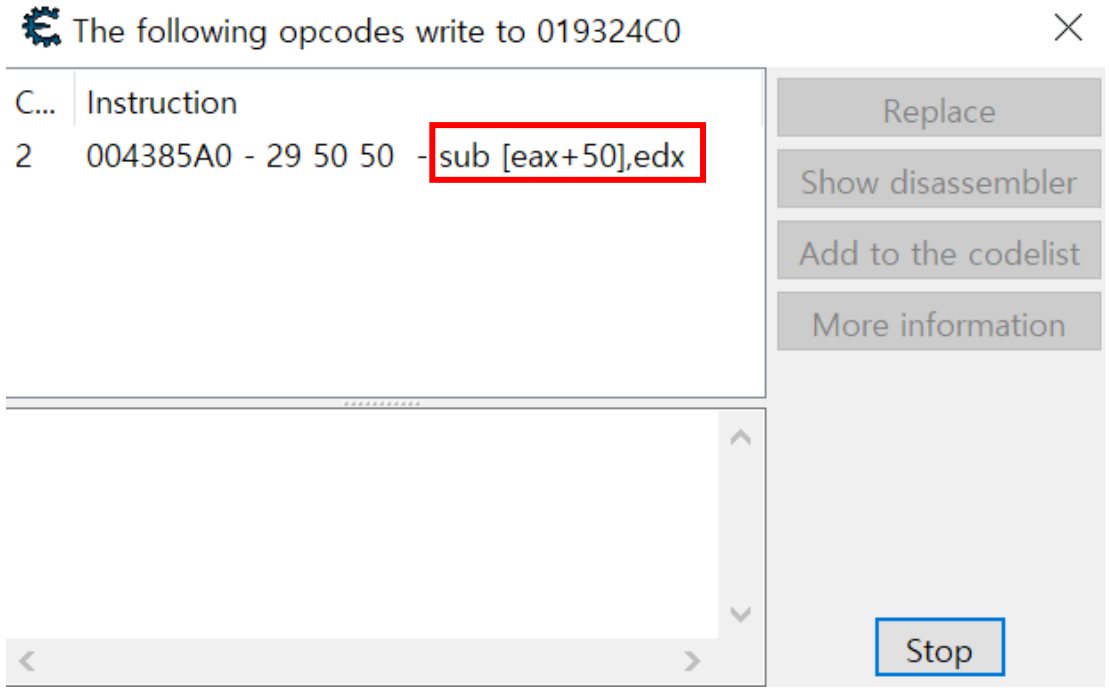
Memory Hacking

Offse...	Offse...	Offse...	G1:01A04D90	G1:01A04D20	G2:01A01130
1C			01A04DAC : 3193039749	01A04D3C : 1045556101	01A0114C : 0
20			01A04DB0 : 3209481421	01A04D40 : 3209481421	01A01150 : 1061997773
2C			01A04DBC : 1127002850	01A04D4C : 1127959838	01A0115C : 1083388722
50			01A04DE0 : 197	01A04D70 : 199	01A01180 : 84
54			01A04DE4 : 200	01A04D74 : 200	01A01184 : 100
58			01A04DE8 : 26939448	01A04D78 : 26939528	01A01188 : 0
5C			01A04DEC : 1	01A04D7C : 1	01A0118C : 0

체력

체력 최대치

적군/아군 구분


The following opcodes write to 019324C0
C...
Instruction
2
004385A0 - 29 50 50 - sub [eax+50],edx
Replace
Show disassembler
Add to the codelist
More information
Stop

Code Injection(코드 인젝션) : 원하는 코드 삽입

Auto assemble

File View Template

```
1  alloc(newmem,2048)
2  label(returnhere)
3  label(originalcode)
4  label(exit)
5
6  newmem: //this is allocated memory, you have read,write,execute access
7  //place your code here
8
9  originalcode:
10 sub [eax+50],edx
11 ret
12 add [eax],al
13
14 exit:
15 jmp returnhere
16
17 "gtutorial-i386.exe"+385A0:
18 jmp newmem
19 nop
20 returnhere:
```

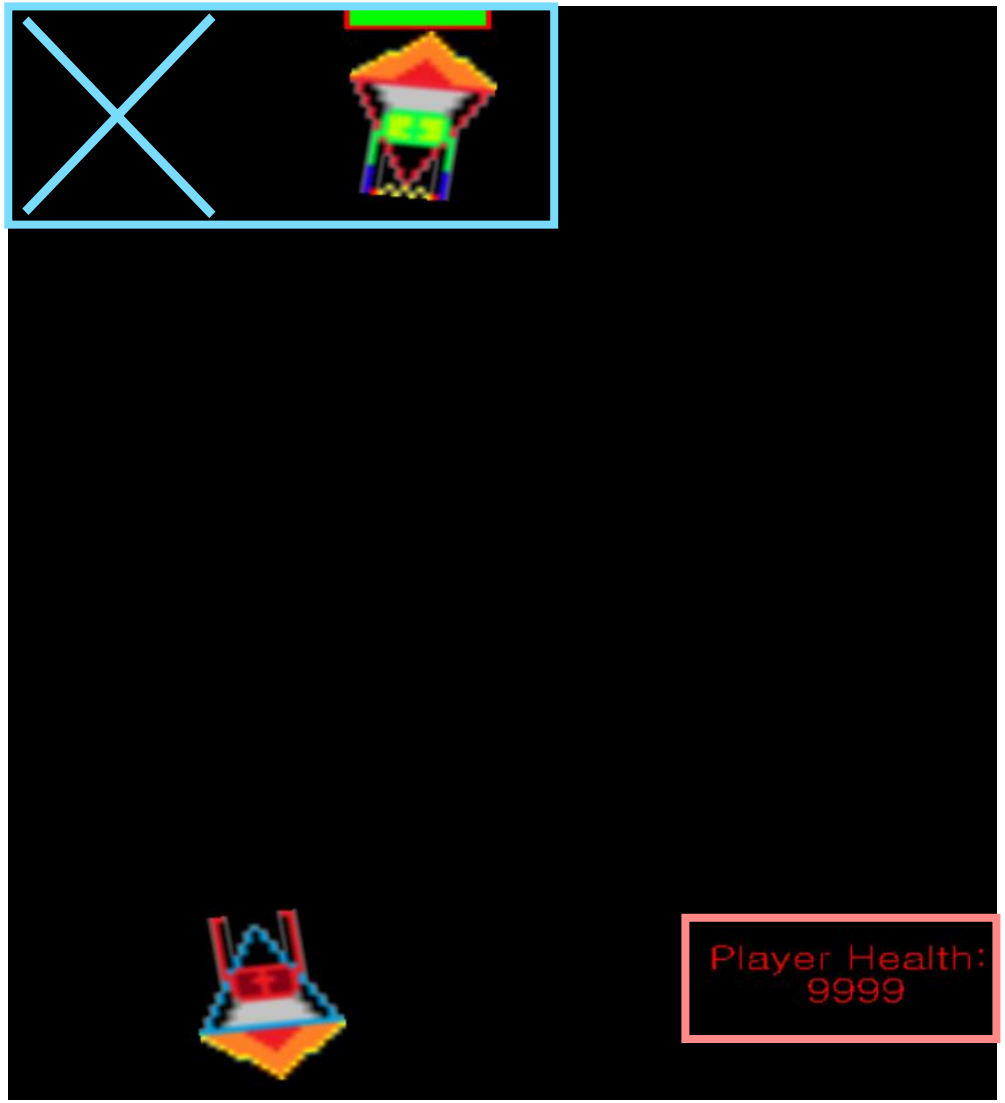
Auto assemble

File View Template

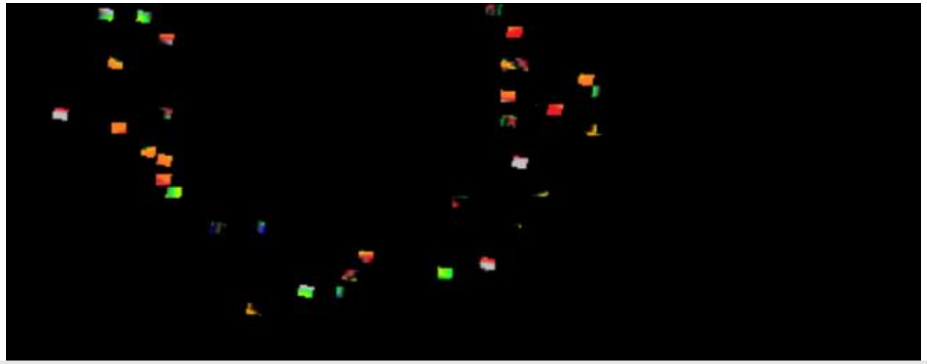
```
1  alloc(newmem,2048)
2
3  newmem:
4  cmp [EAX+5C], 0
5  je friend
6
7  cmp [EAX+5C], 1
8  je enemy
9
10 friend:
11 mov [EAX+50], #9999
12 ret
13
14 enemy:
15 mov [EAX+50], 0
16 ret
17
18 "gtutorial-i386.exe"+385A0:
19 jmp newmem
20 nop
21 returnhere:
```

두 값이 같으면 점프

Memory Hacking



Memory Hacking



[Cheat Engine tutorial]

THANK YOU

[감사합니다.]