Introduction to Software Security

The 5th Quiz

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Answer the following questions

1. Assume that you run the following function of C program on 32-bit architecture.

   That is, sizeof(int) = 4. Answer the following three sub-questions.

| **(1) How many bugs can occur in this function?**<br>(우측 함수에서 몇 개의 버그가 발생할 수 있는가?)<br><br>**(2) Where? Point out the sentence corresponding to each bug.**<br>(어느 문장에서 버그가 발생하는지 보이시오)<br><br>**(3) Why? Explain the reason.**<br>(왜 해당 버그가 발생할 수 있는지 설명하시오) | ```
int catvars(char *buf1, char *buf2, unsigned int len1,
                                    unsigned int len2) {
    char mybuf[256];

    if ( (len1 + len2) > 256 ) {
        return -1;
    }
    memcpy (mybuf, buf1, len1);
    memcpy (mybuf + len1, buf2, len2);
    do_some_stuff(mybuf);
    return 0;
}
``` |

Answer the following questions

2. Write and execute the C program on you computer or Linux server computer.

    Explain the results of the program in detail. That is, answer the following two sub-questions.

(1) Show the output of the program.
    (우측의 C 프로그램의 출력을 보이시오.)

(2) Why? Explain the reason why the three
    printf statements shows the results.
    (3개의 printf 문장이 해당 결과를 출력하는 이유를 설명하시오. 즉, 왜 그렇게 출력되는지를 설명하면 됩니다.)

```c
#include <stdio.h>   /* ex2.c – loss of precision */
int main(void) {
  int m;
  short s;
  char c;

  m = 0xcafe76ef;
  s = m;
  c = m;

  printf("l = 0x%x (%d bits)\n", m, sizeof(m) * 8);
  printf("s = 0x%x (%d bits)\n", s, sizeof(s) * 8);
  printf("c = 0x%x (%d bits)\n", c, sizeof(c) * 8);
  return 0;
}
```

Solving & Writing

- Solve the question individually (by yourself).
  - You must write a report including the answers to the quizzes by yourself.
  - No cheating

- The **cover page** of the report must include
  - Title (제목): "**The 5th Quiz of Intro. to SW Security**"
  - 분반 (2분반 또는 3분반)
  - Student name, Student number
  - Date of submission

- Deadline
  - Submit your report by **20th April**.

Submission

- **File** naming of the answer report for the **5th** Quiz

  - **ISS(분반)_Qz5_이름_학번_mmdd**

  - If you are in the 2nd class, name = "전우치", student number = 32171234,

    submission date = 18th April, then the filename for this Quiz is

    ISS(2)_Qz5_전우치_32171234_0418

- **Submit your report to TA by email.**

  - **Email** title: " SW보안개론(분반) **5번 Quiz 답안 제출**"

    - The title for the 2nd class: "**SW보안개론(2) 5번 Quiz 답안 제출**"
    - The title for the 3rd class: "**SW보안개론(3) 5번 Quiz 답안 제출**"

  - TA: 한승재 (Seungjae Han) googgkstmdwo@naver.com