

```

int __fastcall main(int argc, const char **argv, const char **envp)
{
    FILE *stream; // [rsp+8h] [rbp-E8h]
    char v5[64]; // [rsp+10h] [rbp-E0h] BYREF
    char s[152]; // [rsp+50h] [rbp-A0h] BYREF
    unsigned __int64 v7; // [rsp+E8h] [rbp-8h]

    v7 = __readfsqword(0x28u);
    setbuf(stdout, 0LL);
    printf("How much should I not trust you? >:)\n: ");
    __isoc99_scanf("%d", &detrust);
    fgets(s, 150, stdin);
    if ( detrust >= 0 )
    {
        trust_level -= detrust;
        if ( trust_level == threshold ) // threshold = 2147483646
        {
            puts("What kind of cheating are you doing?");
            puts("You haven't even signed your statement yet!");
            puts("You are BANNED from all future AP exams!!!");
        }
        else
        {
            while ( trust_level < threshold )
            {
                puts("\nI don't trust you enough >:");
                printf("Prove your trustworthiness by reciting the statement on the front cover of the Section I booklet >:)\n: ");
                fgets(s, 150, stdin);
                if ( !strcmp(
                    s,
                    "I confirm that I am taking this exam between the dates 5/24/2024 and 5/27/2024. I will not disclose any "
                    "information about any section of this exam.\n" ) )
                {
                    --trust_level;
                }
                stream = fopen("flag.txt", "r");
                fgets(v5, 64, stream);
                puts("\nYou will now take the multiple-choice portion of the exam.");
                puts("You should have in front of you the multiple-choice booklet and your answer sheet. ");
                printf("You will have %s minutes for this section. Open your Section I booklet and begin.\n", v5);
            }
        }
        else
        {
            puts("Don't try to trick me into trusting you >:(");
        }
    }
    return 0;
}

```

detrust 변수로 정수값을 입력받는다.

그리고 trust\_level에서 detrust 값을 뺀다. 여기서 integer overflow가 발생한다.

```

{
    while ( trust_level < threshold )
    {
        puts("\nI don't trust you enough >:");
        printf("Prove your trustworthiness by reciting the statement on the front cover of the Section I booklet >:)\n: ");
        fgets(s, 150, stdin);
        if ( !strcmp(
            s,
            "I confirm that I am taking this exam between the dates 5/24/2024 and 5/27/2024. I will not disclose any "
            "information about any section of this exam.\n" ) )
        {
            --trust_level;
        }
        stream = fopen("flag.txt", "r");
        fgets(v5, 64, stream);
        puts("\nYou will now take the multiple-choice portion of the exam.");
        puts("You should have in front of you the multiple-choice booklet and your answer sheet. ");
        printf("You will have %s minutes for this section. Open your Section I booklet and begin.\n", v5);
    }
}

```

최종적으로 trust\_level이 threshold보다 크면 flag를 출력해준다.

Detrust 변수를 2147483647로 설정하면 trust\_level이 -2147483647이 되고 strcmp을 두 번 실행시키면 trust\_level은 2147483647이 되고 threshold보다 크게 되어 반복문을 탈출해 flag를 출력해준다.

```
-----
gef> p &threshold
$17 = (<data variable, no debug info> *) 0x55a6d94f0010 <threshold>
gef> x/gx 0x55a6d94f0010
0x55a6d94f0010 <threshold>: 0x000000007ffffffe
gef> p/d 0x000000007ffffffe
$18 = 2147483646
gef> |
```

```
gef> c
Continuing.

You will now take the multiple-choice portion of the exam.
You should have in front of you the multiple-choice booklet and your answer sheet.
You will have flag{**fake flag**}
minutes for this section. Open your Section I booklet and begin.
[Inferior 1 (process 172417) exited normally]
gef> |
```