2019313550_박병현

실습 1.

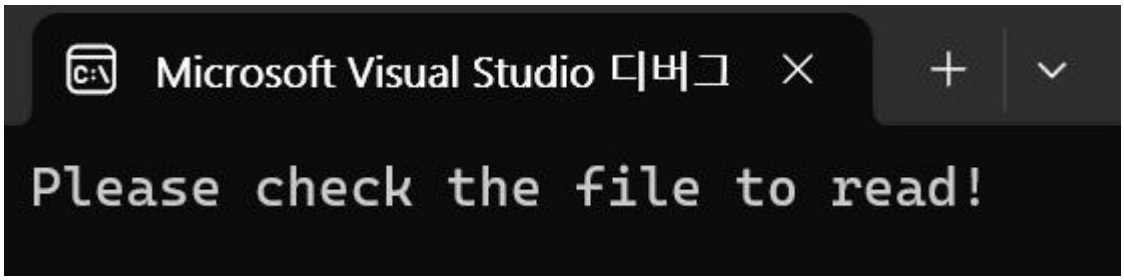
```c
#include <errno.h>
#include <stdio.h>
#include <stdlib.h>

int main() {
    FILE* fp;
    errno_t err;

    err = fopen_s(&fp, "text.txt", "r+");
    if (err != 0) {
        printf("Please check the file to read!\n");
        exit(0);
    }
    else {
        printf("file reading test using fopen() in C\n");
        fclose(fp);
    }

    return 0;
```

실습 1 실행 화면.



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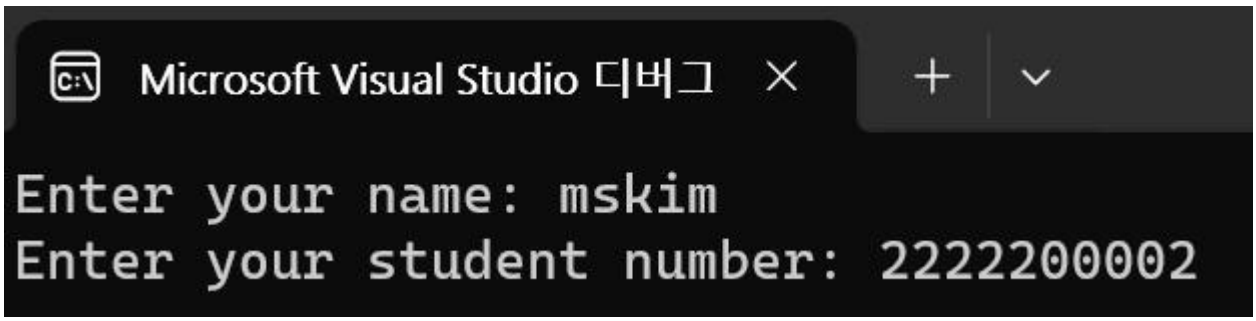
실습 2.

```c
#include <errno.h>
#include <stdio.h>
#include <stdlib.h>

int main()
{
    char name[50];
    int num;
    FILE* fptr;
    errno_t err;

    // use appropriate location if you are using MacOS or Linux
    err = fopen_s(&fptr, "test_20221215.txt", "w");

    if (err != 0) {
        printf("Error! ");
        exit(0);
    }

    printf("Enter your name: ");
    fgets(name, 50, stdin);
    fprintf(fptr, "%s", name);

    printf("Enter your student number: ");
    scanf_s("%d", &num);
    fprintf(fptr, "%d", num);

    fclose(fptr);

    return 0;
}
```

실습 2 실행 화면.



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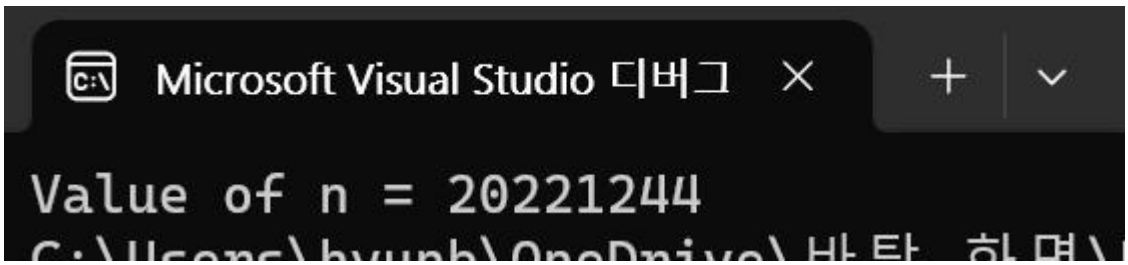
실습 3.

```
#include <errno.h>
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int num;
    FILE* fptr;
    errno_t err;

    if ((err = fopen_s(&fptr, "program.txt", "r")) != 0) {
        printf("Error! opening file");
        // Program exits if fails to open a file
        exit(0);
    }

    fscanf_s(fptr, "%d", &num);

    printf("Value of n = %d", num);
    fclose(fptr);

    return 0;
}
```

실습 3 실행 화면.



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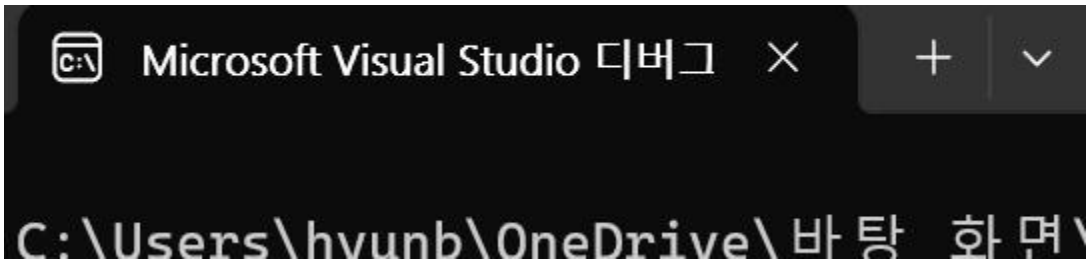
실습 6.

```
#include <errno.h>
#include <stdio.h>
#include <stdlib.h>

struct threeNum {
    int n1, n2, n3;
};

int main() {
    int n;
    struct threeNum num;
    FILE* fptr;
    errno_t err;

    if ((err = fopen_s(&fptr, "program.bin", "wb")) != 0) {
        printf("Error! opening file");
        // Program exits if the file pointer returns NULL.
        exit(0);
    }
    for (n = 1; n < 5; ++n) {
        num.n1 = n;
        num.n2 = 5 * n;
        num.n3 = 5 * n + 1;
        fwrite(&num, sizeof(struct threeNum), 1, fptr);
    }
    fclose(fptr);

    return 0;
}
```

실습 6 실행 화면.



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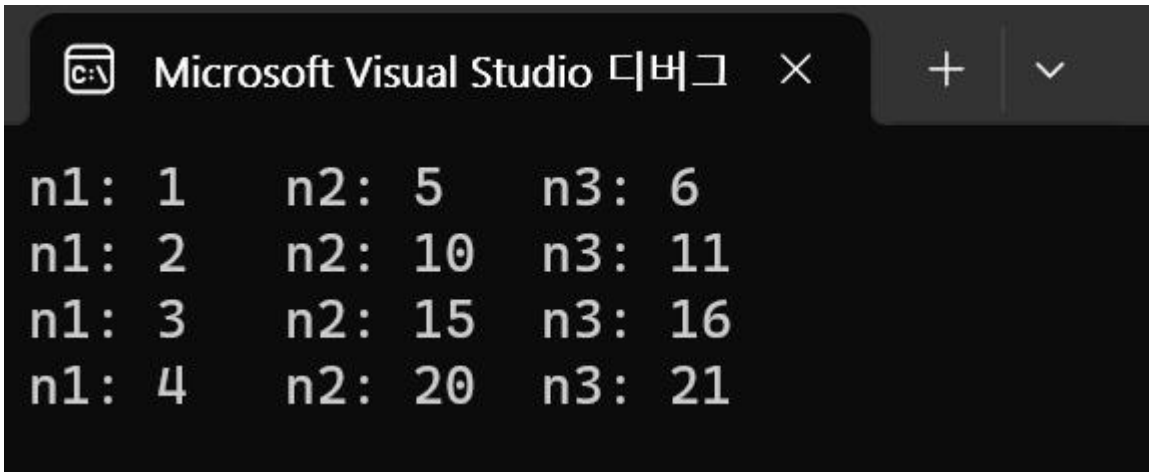
실습 7.

```
#include <errno.h>
#include <stdio.h>
#include <stdlib.h>

struct threeNum {
    int n1, n2, n3;
};

int main() {
    int n;
    struct threeNum num;
    FILE* fptr;
    errno_t err;

    if ((err = fopen_s(&fptr, "program.bin", "rb")) != 0) {
        printf("Error! opening file");
        // Program exits if fails to open a file.
        exit(0);
    }
    for (n = 1; n < 5; ++n) {
        fread(&num, sizeof(struct threeNum), 1, fptr);
        printf("n1: %d\tn2: %d\tn3: %d\n", num.n1, num.n2, num.n3);
    }
    fclose(fptr);

    return 0;
}
```

실습 7 실행 화면.



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실습 8.

```c
#include <errno.h>
#include <stdio.h>
#include <stdlib.h>

struct threeNum {
    int n1, n2, n3;
};

int main() {
    int n;
    struct threeNum num;
    FILE* fptr;
    errno_t err;

    if ((err = fopen_s(&fptr, "program.bin", "rb")) != 0) {
        printf("Error! opening file");
        // Program exits if fails to open a file.
        exit(0);
    }
    // Moves the cursor to the end of the file
    fseek(fptr, -(int)sizeof(struct threeNum), SEEK_END);
    for (n = 1; n < 5; ++n) {
        fread(&num, sizeof(struct threeNum), 1, fptr);
        printf("n1: %d\tn2: %d\tn3: %d\n", num.n1, num.n2, num.n3);
        fseek(fptr, -2 * (int)sizeof(struct threeNum), SEEK_CUR);
    }
    fclose(fptr);

    return 0;
}
```

실습 8 실행 화면.

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실습 9.

```c
#include <stdio.h>
#include <stdlib.h>
#include <errno.h>

int main()
{
    FILE* write_ptr;
    errno_t err;
    unsigned char buffer[10] = { 1,5,3,4,5,3,7,8,2,11 };

    err = fopen_s(&write_ptr, "lab13_ex09.bin", "wb");
    if (err != 0) {
        printf("Please check the file to write!\n");
        exit(0);
    }
    fwrite(buffer, sizeof(buffer), 1, write_ptr); // write 10 bytes from our buffer
    fclose(write_ptr);

    return 0;
}
```

실습 9 실행 화면.