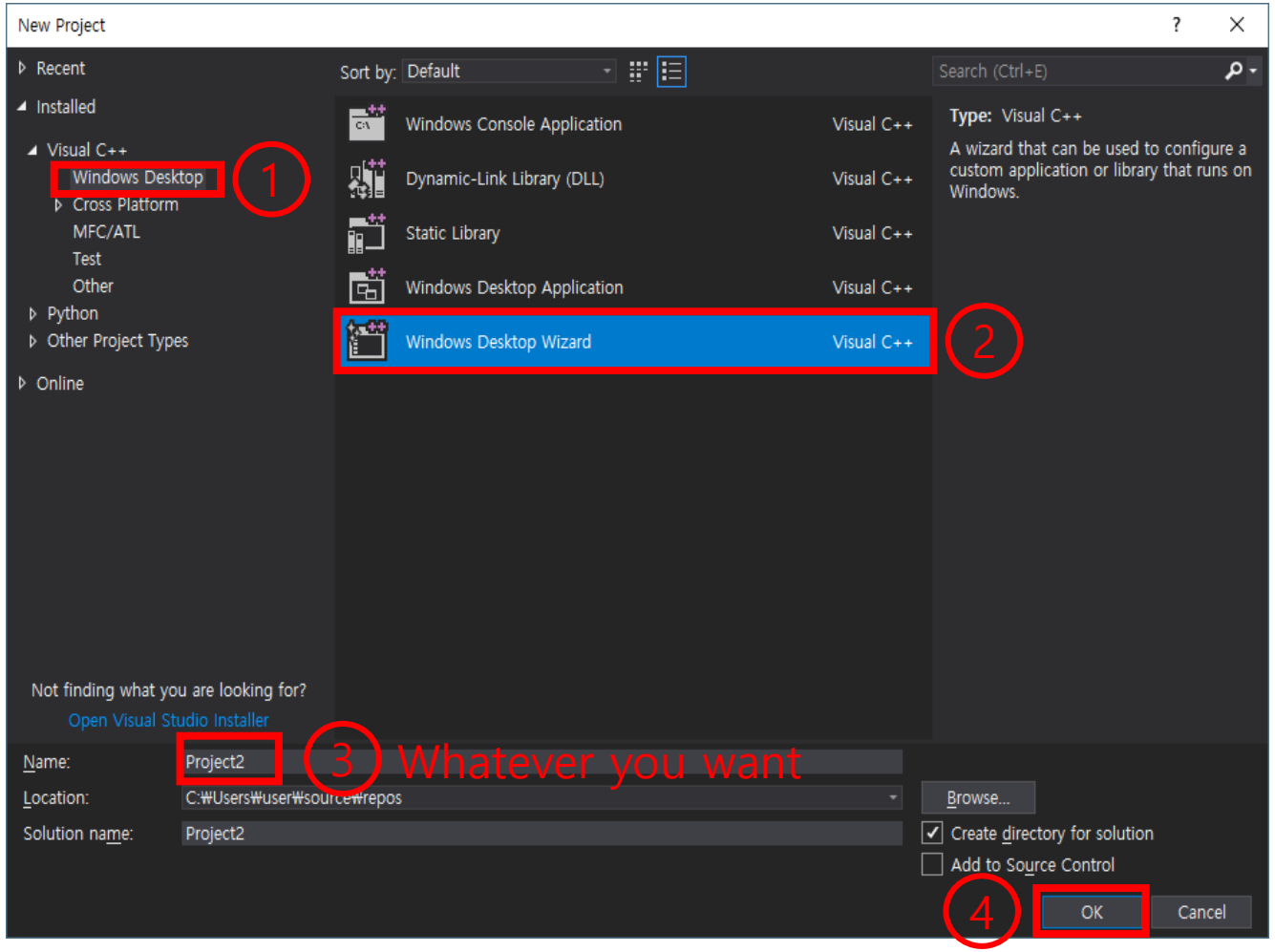
Programming-C

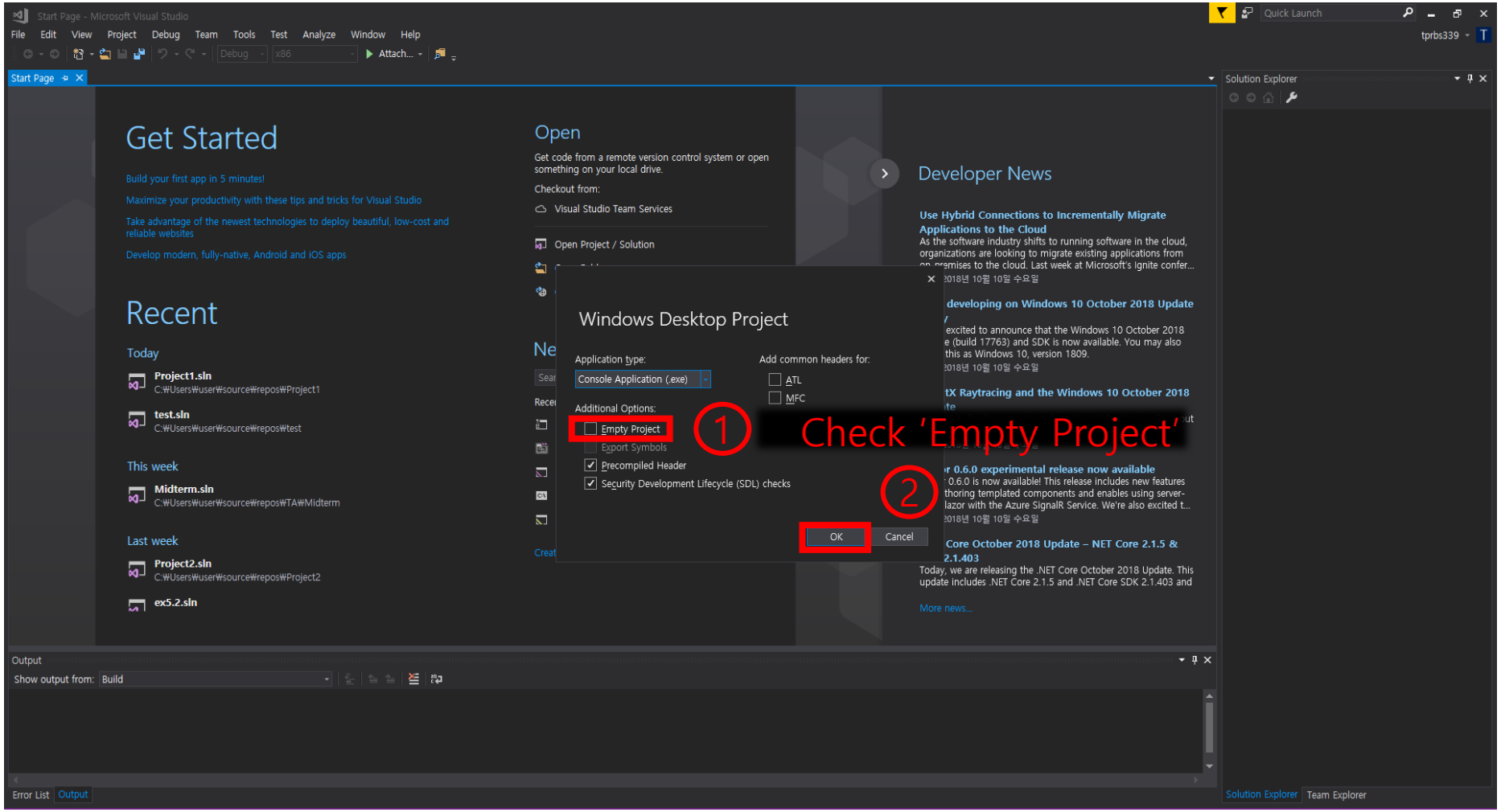
| Practice class course introduction |

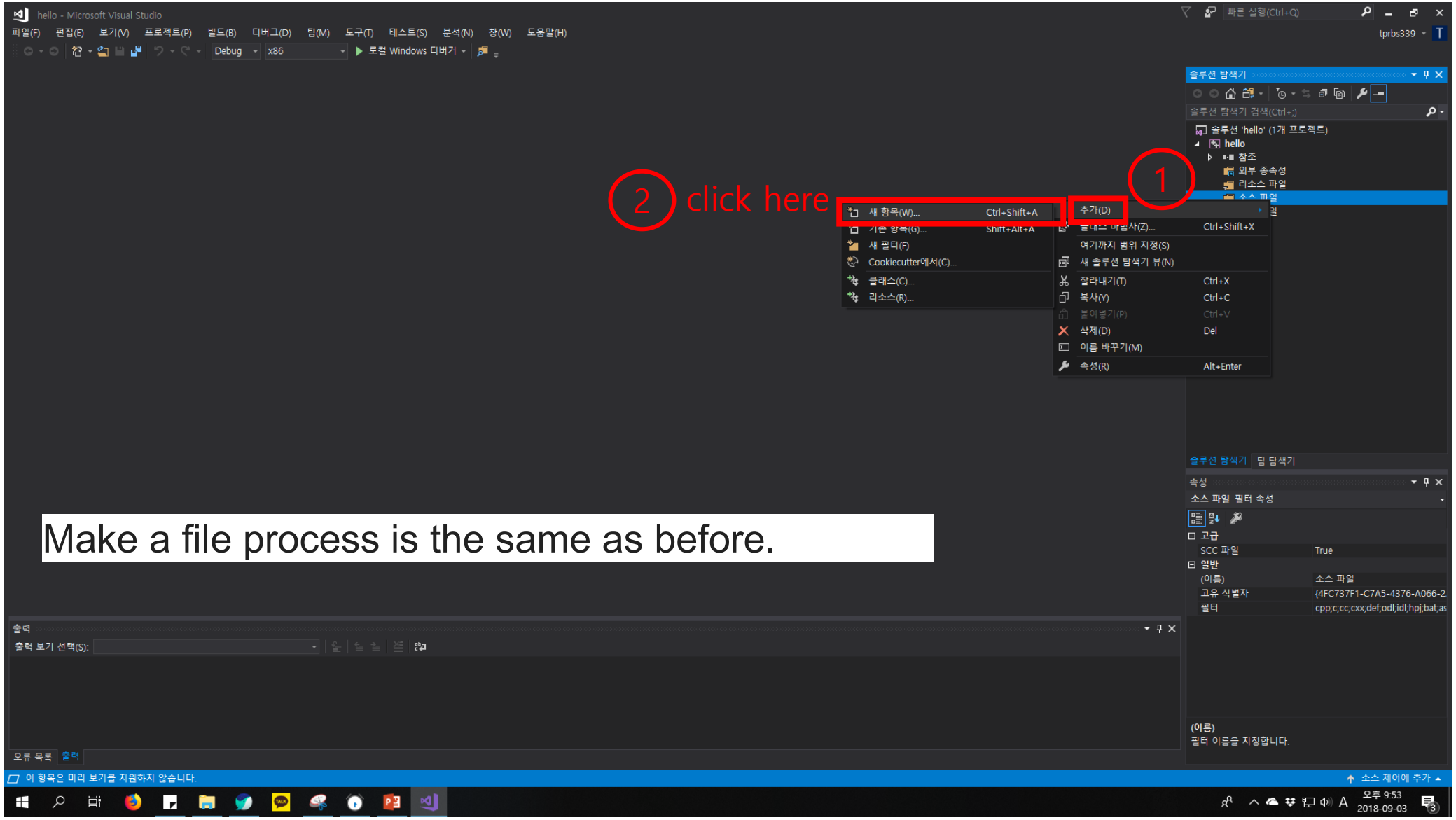
4. Make a project



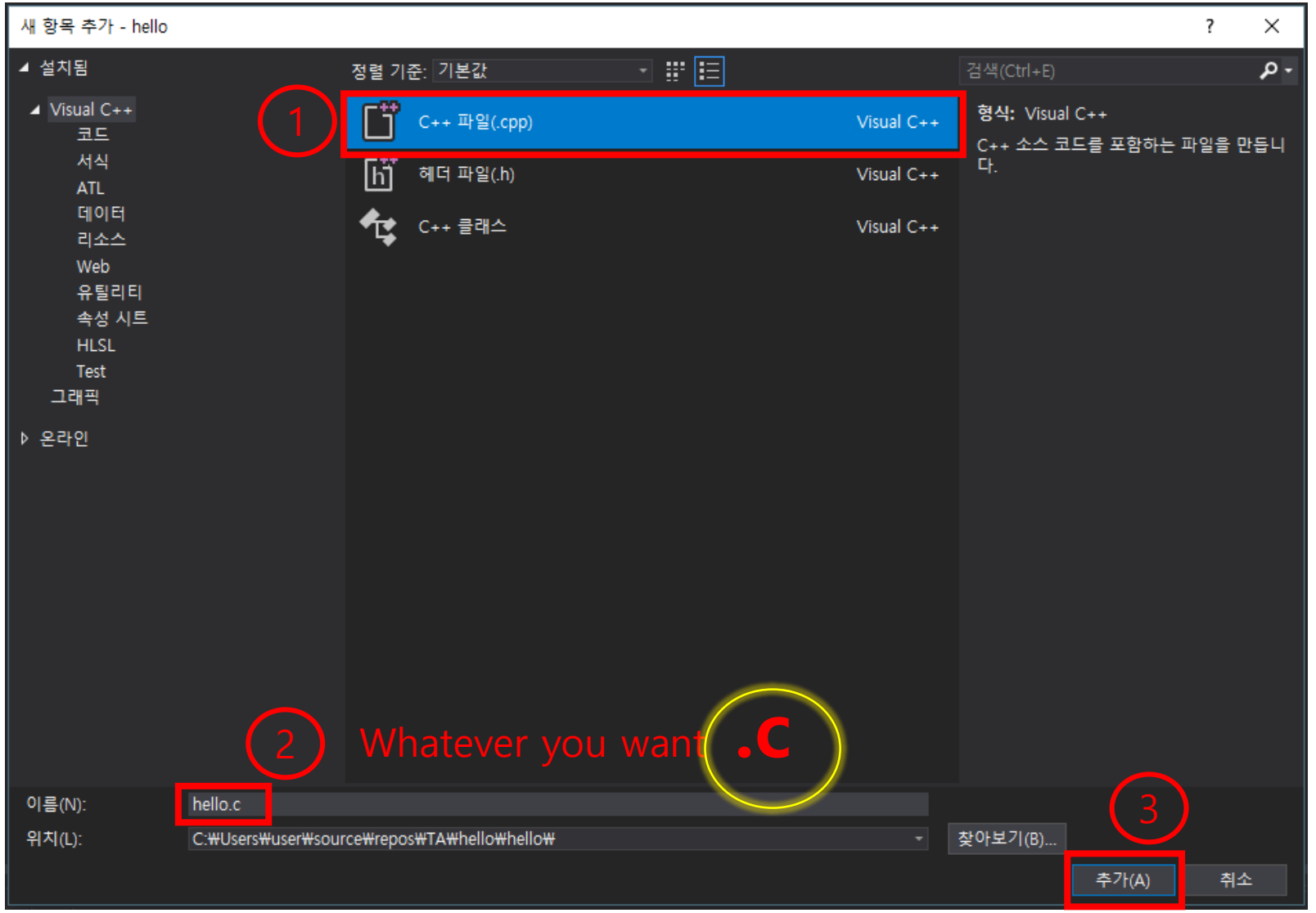
- To compensate for the immediate termination of the execution window, change from ‘Empty project’ to ‘Window Desktop Wizard’ when you create the project.

4. Make a project



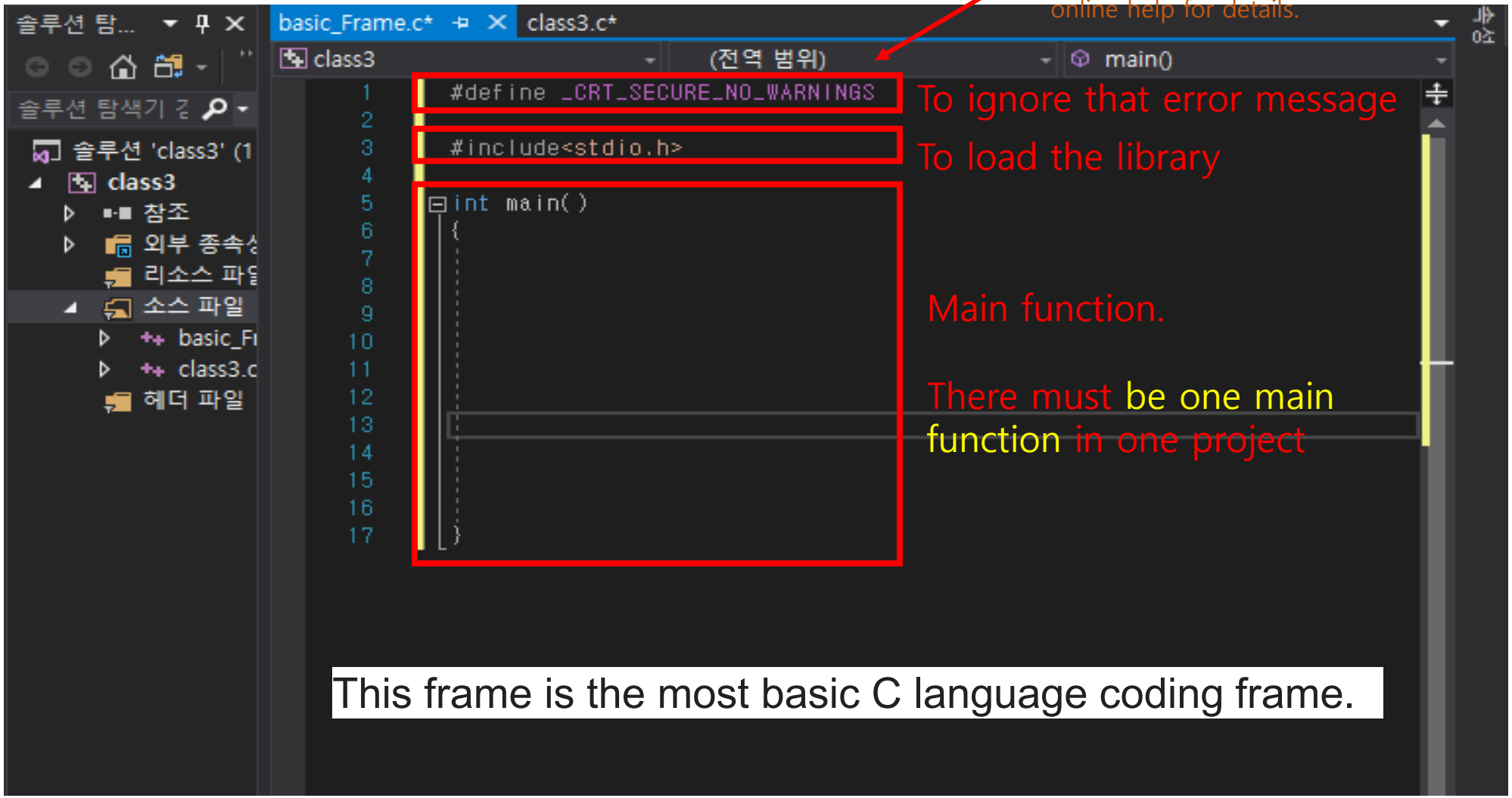

hello - Microsoft Visual Studio
2 click here
1
새 항목(W)... Ctrl+Shift+A
추가(D)
새 필터(F)
Cookiecutter에서(C)...
클래스(C)...
리소스(R)...
여기까지 범위 지정(S)
새 솔루션 탐색기 뷰(N)
잘라내기(T) Ctrl+X
복사(Y) Ctrl+C
삭제(D) Del
이름 바꾸기(M)
속성(R) Alt+Enter
Make a file process is the same as before.

4. Make a file


새 항목 추가 - hello
설치됨
Visual C++
코드
서식
ATL
데이터
리소스
Web
유틸리티
속성 시트
HLSL
Test
그래픽
온라인
정렬 기준: 기본값
검색(Ctrl+E)
1
C++ 파일(.cpp)
Visual C++
헤더 파일(.h)
Visual C++
C++ 클래스
Visual C++
형식: Visual C++
C++ 소스 코드를 포함하는 파일을 만듭니다.
2
Whatever you want
.C
이름(N):
hello.c
위치(L):
C:₩Users₩user₩source₩repos₩TA₩hello₩hello₩
찾아보기(B)...
3
추가(A)
취소

4. Basic frame

error C4996: 'scanf': This function or variable may be unsafe. Consider using scanf_s instead. To disable deprecation, use _CRT_SECURE_NO_WARNINGS. See online help for details.



❖ Enter the natural number and obtain the sum from 0 to the natural number

<Source code>

class3.c*

class3 (전역 범위)

```
1  // example1
2  #define _CRT_SECURE_NO_WARNINGS
3  #include<stdio.h>
4
5
6  int main( )
7  {
8      int total = 0;
9      int i, N;
10     printf("Please enter the natural number N : ");
11     scanf("%d", &N);
12
13     for (i = 0; i < N + 1; i++)
14         total += i;
15
16     printf("Total summation of 0 to %d : %d \n", N, total);
17     return 0;
18 }
```

<Output>

C:₩WINDOWS₩system32₩cmd.exe

```
Please enter the natural number N : 10
Total summation of 0 to 10 : 55
계속하려면 아무 키나 누르십시오 . . .
```

C:₩WINDOWS₩system32₩cmd.exe

```
Please enter the natural number N : 100
Total summation of 0 to 100 : 5050
계속하려면 아무 키나 누르십시오 . . .
```

❖ Print out the entire times table (2~9) (use a nested 'for loop')

<Source code>

class3_2.c | class3.c

class3 | (전역 범위)

```
1  // example2
2  #define _CRT_SECURE_NO_WARNINGS
3  #include<stdio.h>
4
5
6  int main()
7  {
8      int n1, n2;
9
10     for (n1 = 2; n1 < 10; n1++)
11     {
12         printf("<%d times table>₩n", n1);
13
14         for (n2 = 1; n2 < 10; n2++)
15             printf("%d × %d = %d ₩n", n1, n2, n1*n2);
16
17         printf("₩n");
18     }
19     return 0;
20 }
```

<Output>

C:₩WINDOWS₩system32₩cmd.exe

```
<2 times table>
2 × 1 = 2
2 × 2 = 4
2 × 3 = 6
2 × 4 = 8
2 × 5 = 10
2 × 6 = 12
2 × 7 = 14
2 × 8 = 16
2 × 9 = 18

<3 times table>
3 × 1 = 3
3 × 2 = 6
3 × 3 = 9
3 × 4 = 12
3 × 5 = 15
3 × 6 = 18
3 × 7 = 21
3 × 8 = 24
3 × 9 = 27

<4 times table>
4 × 1 = 4
4 × 2 = 8
4 × 3 = 12
4 × 4 = 16
4 × 5 = 20
4 × 6 = 24
4 × 7 = 28
4 × 8 = 32
4 × 9 = 36

<5 times table>
5 × 1 = 5
5 × 2 = 10
5 × 3 = 15
5 × 4 = 20
5 × 5 = 25
5 × 6 = 30
5 × 7 = 35
5 × 8 = 40
5 × 9 = 45
```

선택 C:₩WINDOWS₩system32₩cmd.exe

```
6 × 1 = 6
6 × 2 = 12
6 × 3 = 18
6 × 4 = 24
6 × 5 = 30
6 × 6 = 36
6 × 7 = 42
6 × 8 = 48
6 × 9 = 54

<7 times table>
7 × 1 = 7
7 × 2 = 14
7 × 3 = 21
7 × 4 = 28
7 × 5 = 35
7 × 6 = 42
7 × 7 = 49
7 × 8 = 56
7 × 9 = 63

<8 times table>
8 × 1 = 8
8 × 2 = 16
8 × 3 = 24
8 × 4 = 32
8 × 5 = 40
8 × 6 = 48
8 × 7 = 56
8 × 8 = 64
8 × 9 = 72

<9 times table>
9 × 1 = 9
9 × 2 = 18
9 × 3 = 27
9 × 4 = 36
9 × 5 = 45
9 × 6 = 54
9 × 7 = 63
9 × 8 = 72
9 × 9 = 81

계속하려면 아무 키나 누르십시오 . . .
```

❖ Enter a multiple of 6 and then print out Using if, if **vs** Using if, else if

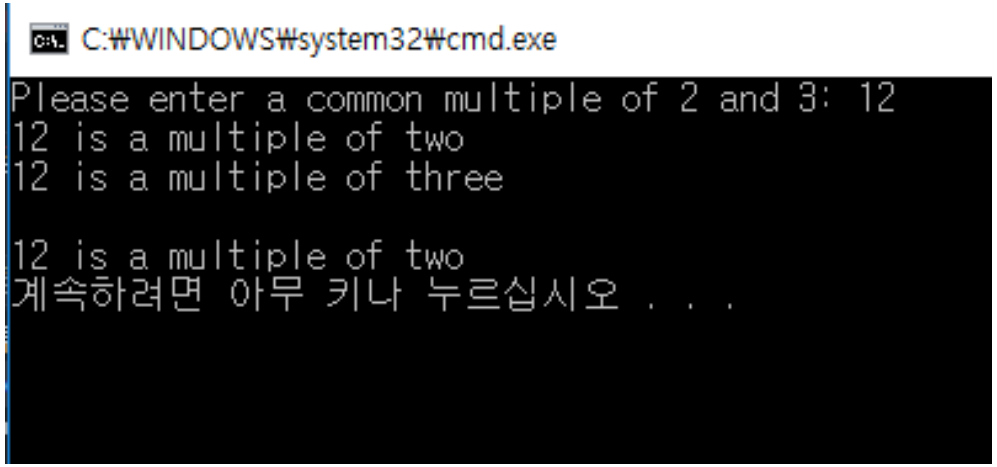
<Source code>

class3_3.c | class_5.c | class4_4.c | class3_2.c | class3_1.c

class3 | (전역 범위) | main()

```c
// example3
#define _CRT_SECURE_NO_WARNINGS
#include<stdio.h>


int main()
{
    int num1;
    printf("Please enter a common multiple of 2 and 3: ");    //multiples of 6
    scanf("%d", &num1);


    if (num1 % 2 == 0)
        printf("%d is a multiple of two \n", num1);
    if (num1 % 3 == 0)
        printf("%d is a multiple of three \n", num1);


    printf("\n");
    if (num1 % 2 == 0)
    {
        printf("%d is a multiple of two \n", num1);
    }
    else if (num1 % 3 == 0)
    {
        printf("%d is a multiple of two \n", num1);
    }
    else
    {
        printf("%d is not a multiple of two or three", num1);
    }

    return 0;

}
```

<Output>



❖ Two ways to output a string after it has been input.

<Source code>

class4_4.c* | class3_2.c | class3_1.c

class3 | (전역 범위)

```c
// example4
#define _CRT_SECURE_NO_WARNINGS
#include<stdio.h>


int main()
{
    char str[50];
    int idx = 0;

    printf("please enter a string : ");
    scanf("%s", str); // string = %s

    printf("Output in string : %s ₩n", str);

    printf("Output in character units : ");

    while (str[idx] != '₩0') // The end of the string is always null('₩0')
    {
        printf("%c", str[idx]);
        idx++;
    }

    printf("₩n");
    return 0;
}
```

<Output>

C:₩WINDOWS₩system32₩cmd.exe

```
please enter a string : HelloWorld
Output in string : HelloWorld
Output in character units : HelloWorld
계속하려면 아무 키나 누르십시오 . . .
```

- Initializes the size of the array.
- String = %s, character = %c, Integer type = %d, real number type = %f
- The end of the string is always null('₩0')
- When you type a sentence, only the first word is printed
  -> "% s" only accepts strings before whitespace (blank).
  -> You will learn how to print sentences later. (using fgets)

❖ Enter 5 real numbers in an array and find an average, and the number greater than the mean and the number of the smaller number

<Source code>

class_5.c* | class4_4.c | class3_2.c | class3_1.c

class3 | (전역 범위)

```c
// example5
#define _CRT_SECURE_NO_WARNINGS
#include<stdio.h>


int main()
{
    float arr[5];
    float sum = 0, avg;
    int i, j = 0, k = 0;


    for (i = 0 ; i < 5; i++)
    {
        printf("enter the %d-th digit : \n", i+1);
        scanf("%f", &arr[i]);
        sum += arr[i];
    }

    avg = sum / 5;
    printf("sum : %f,   avg : %f\n", sum, avg);


    for (i = 0; i < 5; i++)
    {
        if (arr[i] >= avg)

            j++;

        else
            k++;

    }

    printf("number of above average : %d\n",j);
    printf("number of below average : %d\n",k);


    return 0;

}
```

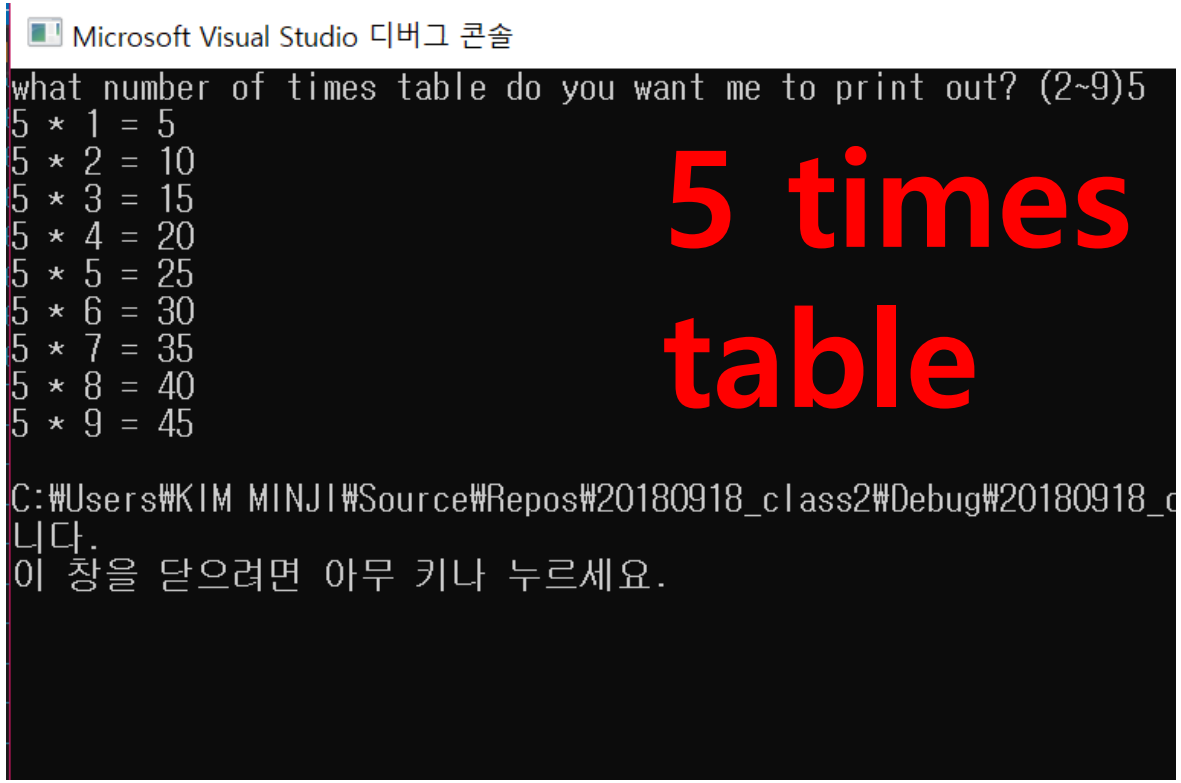
<Output>

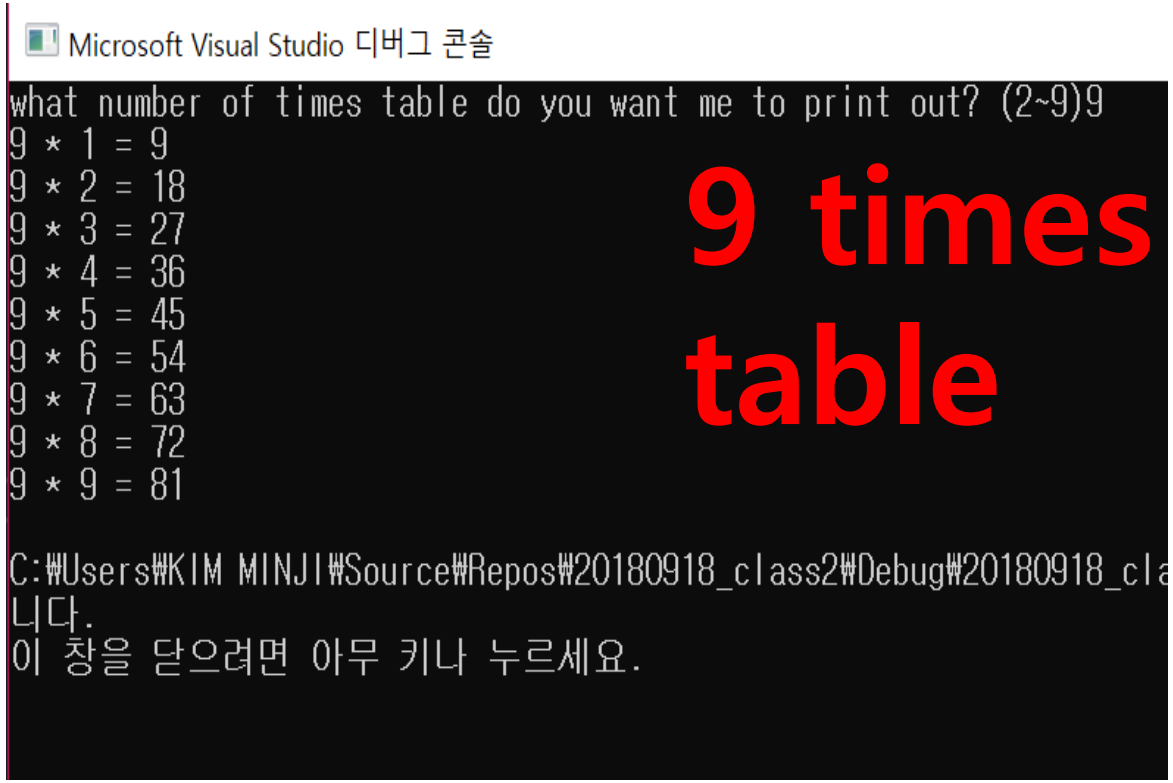
C:\WINDOWS\system32\cmd.exe

```
enter the 1-th digit :
22
enter the 2-th digit :
46
enter the 3-th digit :
57
enter the 4-th digit :
44
enter the 5-th digit :
98
sum : 267.000000,   avg : 53.400002
number of above average : 2
number of below average : 3
계속하려면 아무 키나 누르십시오 . . .
```

- Include “avobe average” in the case of a value equal to the average.

4. Homework 1 : Print out times table by **using the loop**

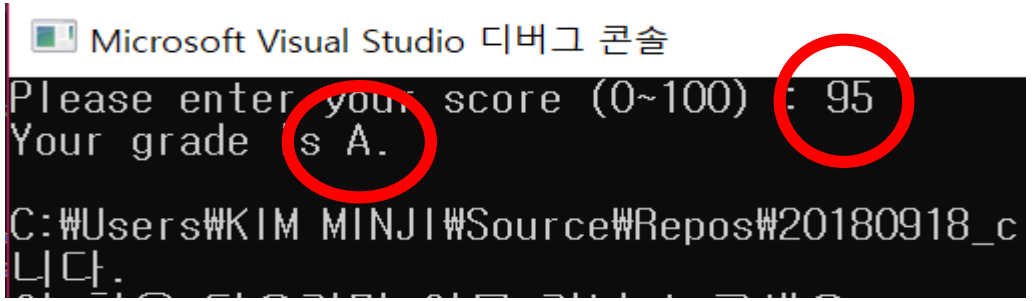


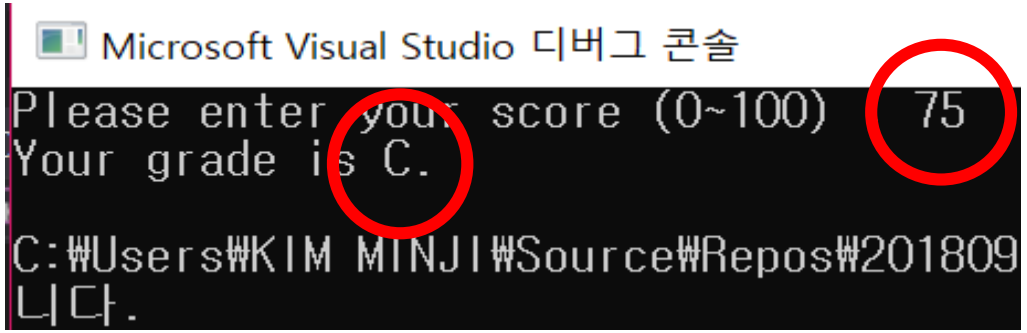


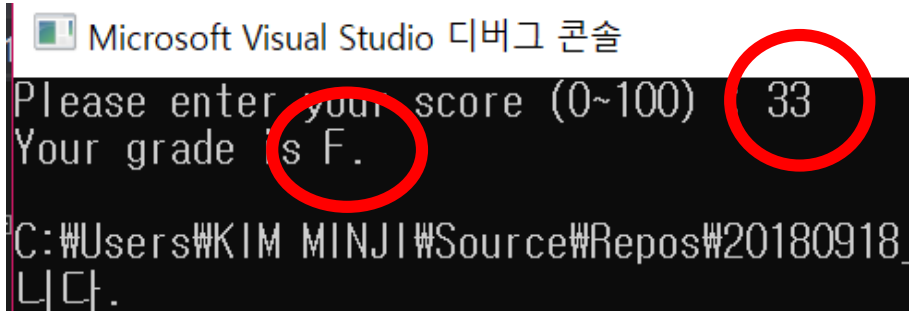
- The output pictures show just an example.
- You must upload the file(source code) due to 2018.10.22 11:59PM on Black board.

4. Homework 2 : Print out your grade using switch and case

A : 90~100
B : 80~89
C : 70~79
D : 60~69
F : 0~59







- The output pictures show just an example.
- You must upload the file(source code) due to 2018.10.22 11:59PM on Black board.