

문제해결기법(13967005)

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Q1. Constrained Insertion with at least 5 different testset (p.26)

```
#define _CRT_SECURE_NO_WARNINGS // or scanf_s
#include <stdio.h>
#include <math.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <ctype.h>
#define TEST_NUM 5
    struct EMPLOYEE {

        char RRN[14]; //constraint , unique
        char name[20];
        float salary; // constraint , salary > bonus
        float bonus;

    } employee[1000];

int main() {
    char TEST_RRN[TEST_NUM][14] =
    { {"0203693508127"}, {"0203693508127"}, {"0203693508128"}, {"0223493508127"}, {"1203693588
127"} };
    char TEST_NAME[TEST_NUM][20] =
    { {"Hanungjae"}, {"choikim"}, {"umjunsick"}, {"KiM"}, {"KIee"} };
    float TEST_SALARY[TEST_NUM] = {2000, 2200, 2250, 2030, 2600};
    float TEST_BONUS[TEST_NUM] = {1000, 1500, 2500, 1800, 1900};
    int struct_array_num = 0;
    for (int i = 0; i < TEST_NUM; i++) {

        printf("_____TEST_NUM[%d]_____\n", i + 1);
        printf("RRN : %s\n", TEST_RRN[i]);
        printf("NAME : %s\n", TEST_NAME[i]);
        printf("SALARY : %f\n", TEST_SALARY[i]);
        printf("BONUS : %f\n", TEST_BONUS[i]);

        int error = 0;
        for (int k = 0; k < struct_array_num; k++) //unique_test
        {

            if (TEST_RRN[i][0] == employee[k].RRN[0]) {
                int same = 0;
                for (int r = 0; r < strlen(employee[k].RRN); r++) {
                    if (TEST_RRN[i][r] == employee[k].RRN[r]) {
                        same++;
                    }
                    if (same == strlen(employee[k].RRN)) {
                        error++;
                        printf("ERROR : RRN[%s] IS SAME WITH
RRN[%s]\n", TEST_RRN[i], employee[k].RRN);
                    }
                }
            }

        }

    }

    if (TEST_SALARY[i] < TEST_BONUS[i]) //bonus_test
    {
        error++;
    }
}
```

```

        printf("ERROR : SALARY[%f] IS SMALL THAN BONUS[%f]\n",
TEST_SALARY[i], TEST_BONUS[i]);
    }
    if (error==0) {
        strcpy(employee[struct_array_num].RRN, TEST_RRN[i]);
        strcpy(employee[struct_array_num].name, TEST_NAME[i]);
        employee[struct_array_num].salary = TEST_SALARY[i];
        employee[struct_array_num].bonus = TEST_BONUS[i];
        struct_array_num++;
        printf("INSERTION SUCCESS\n");
    }
    else {
        printf("INSERTION FAILED\n");
    }
}

return 0;
}

```

The screenshot displays the Microsoft Visual Studio Debug Console and Output windows. The Debug Console shows the execution of a program that inserts employee records. It displays test data for five records, including RRN, name, salary, and bonus. The output indicates successful insertions for records 1, 4, and 5, while records 2 and 3 failed due to duplicate RRN and salary/bonus constraints, respectively. The Output window shows the build process for Project2, which completed successfully.

```

Microsoft Visual Studio Debug Console
-----TEST_NUM[1]-----
RRN : 0203693508127
NAME : Hanungjae
SALARY : 2000.000000
BONUS : 1000.000000
INSERTION SUCCESS
-----TEST_NUM[2]-----
RRN : 0203693508127
NAME : choikim
SALARY : 2200.000000
BONUS : 1500.000000
ERROR : RRN[0203693508127] IS SAME WITH RRN[0203693508127]
INSERTION FAILED
-----TEST_NUM[3]-----
RRN : 0203693508128
NAME : umjunsick
SALARY : 2250.000000
BONUS : 2500.000000
ERROR : SALARY[2250.000000] IS SMALL THAN BONUS[2500.000000]
INSERTION FAILED
-----TEST_NUM[4]-----
RRN : 0223493508127
NAME : KIM
SALARY : 2030.000000
BONUS : 1800.000000
INSERTION SUCCESS
-----TEST_NUM[5]-----
RRN : 1203693588127
NAME : Klee
SALARY : 2600.000000
BONUS : 1900.000000
INSERTION SUCCESS
C:\Users\한웅재\source\repos\Project2\x64\Debug\Project2.exe (process 956) exited with code 0.
Press any key to close this window . . .

Output
Show output from: Build
Build started...
1>----- Build started: Project: Project2, Configuration: Debug x64 -----
1>소스.c
1>Project2.vcxproj -> C:\Users\한웅재\source\repos\Project2\x64\Debug\Project2.exe
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====

```