문제해결기법(13967005)

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제출일: 2021. 10. 2

Q1. Exact Match p.35

```c
#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 NUM_TEST_SET 5

int search_string(char *string,char *search);

int main() {

        char test_str[NUM_TEST_SET][1024] = {"Every day for the past month, Emal
Ahmadi's 7-year-old daughter Hada has asked him the same thing: ""Where is my
sister ?"""
                ,"She misses playing with her younger sister Malika, he says. She cries
a lot, wondering when she is coming home."
                ,"Malika died in a US drone strike in the courtyard of their family
home in Afghanistan's capital on August 29, along with ten other relatives, six of
them children."
                ,"Speaking outside of the courtroom on Thursday, Sarkozy's lawyer
Thierry Herzog told French media that he would be launching an appeal."
                ,"Lambert said he told Sarkozy about the memo and indicated to him the
necessity to cut campaign spending, while Sarkozy maintained that he had no knowledge
of the overspending."};
        char test_search_str[NUM_TEST_SET][128] = {"the","She","in","the courtroom on
Thursday","and indicated to him"};//2, 2, 3, 1, 1

        for (int i = 0; i < NUM_TEST_SET; i++) {

                char* str = test_str[i];
                char* search_str = test_search_str[i];

                int num_matches = search_string(str,search_str);
                printf("\n// --- EXPERIMENT(%d) --- //\n",i+1);
                printf("String : %s\n",str);
                printf("Search : %s\n",search_str);
                printf("Num Matches : %d\n",num_matches);


        }

        return 0;
}
int search_string(char* string, char* search){
        int match_num = 0;

        for (int i = 0; i < strlen(string); i++) {
                if (string[i]==search[0]) {
                        int match = 0;
                        for (int k = 0;k<strlen(search);k++) {
                                if (string[i + k] == search[k]) {
                                        match++;
                                }

                        }
                        if (match == strlen(search)) {
```
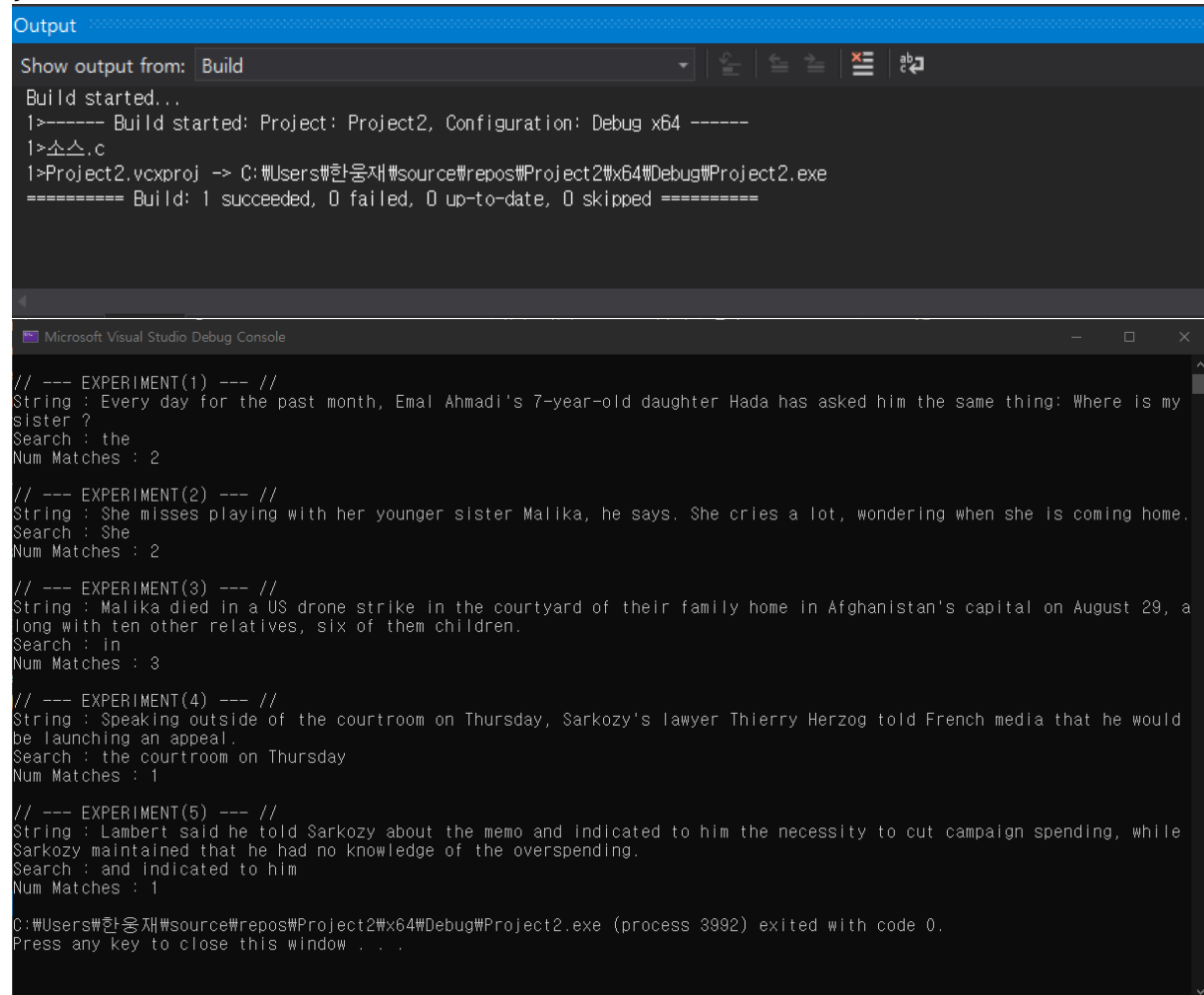
```
                            match_num++;
                        }

                }
        }

        return match_num;
}
```

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 ==========

Microsoft Visual Studio Debug Console

```
// --- EXPERIMENT(1) --- //
String : Every day for the past month, Emal Ahmadi's 7-year-old daughter Hada has asked him the same thing: Where is my sister ?
Search : the
Num Matches : 2

// --- EXPERIMENT(2) --- //
String : She misses playing with her younger sister Malika, he says. She cries a lot, wondering when she is coming home.
Search : She
Num Matches : 2

// --- EXPERIMENT(3) --- //
String : Malika died in a US drone strike in the courtyard of their family home in Afghanistan's capital on August 29, along with ten other relatives, six of them children.
Search : in
Num Matches : 3

// --- EXPERIMENT(4) --- //
String : Speaking outside of the courtroom on Thursday, Sarkozy's lawyer Thierry Herzog told French media that he would be launching an appeal.
Search : the courtroom on Thursday
Num Matches : 1

// --- EXPERIMENT(5) --- //
String : Lambert said he told Sarkozy about the memo and indicated to him the necessity to cut campaign spending, while Sarkozy maintained that he had no knowledge of the overspending.
Search : and indicated to him
Num Matches : 1

C:\Users\한웅재\source\repos\Project2\x64\Debug\Project2.exe (process 3992) exited with code 0.
Press any key to close this window . . .
```

Q2. Partial Match p.35

```c
#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 NUM_TEST_SET 5

void Divide_search_string(char *search_str,char *first,char *second);
int search_string(char *string,char *search);
int partial_match_count(char* search_str, char* first, char* second);


int main() {

    char test_str[NUM_TEST_SET][1024] = {"Every Ever Ever sdgdsfg y"
            ,"My name is hong gil dong. My brother is hong je dong. My sister is
hong gilja, and her friend is hongdong."
            ,"i sdfsd n i n  i in"
            ,"Speaking outside of the courtroom on Thursday, Sarkozy's lawyer
Thierry Herzog told French media that he would be launching an appeal."
            ,"Lambert said he told Sarkozy about the memo and indicated to him the
necessity to cut campaign spending, while Sarkozy maintained that he had no knowledge
of the overspending."};
    char test_search_str[NUM_TEST_SET][128] = {"Every","hong*dong","i*n","the
courtroom* on Thursday","and indicat*ed to him"};//2, 2, 3, 1, 1

    char first[NUM_TEST_SET][128] = { {"  "}, {"  "},  {"  "},  {"  "},  {"  "}};
    char second[NUM_TEST_SET][128] = { {"  "}, {"  "},  {"  "},  {"  "},  {"  "}};



    for (int i = 0; i < NUM_TEST_SET; i++) {

        char* str = test_str[i];
        char* search_str = test_search_str[i];

        char* first_s = first[i];
        char* second_s = second[i];

        printf("\n// --- EXPERIMENT(%d) --- //\n",i+1);
        printf("String : %s\n",str);

        Divide_search_string(search_str, first_s, second_s);

        printf("Search-First : %s\n", first_s);
        printf("Search-Second : %s\n", second_s);
        int num_matches = partial_match_count(str, first_s, second_s);
        printf("Num Matches : %d\n",num_matches);


    }

    return 0;
}
```

```c
void Divide_search_string(char* search_str, char* first, char* second) {

        int i = 0;
        char *ptr = strtok(search_str, "*");
        while (ptr!=NULL) {
                if (i == 0) {
                        strcpy(first,ptr);

                }
                if (i == 1) {
                        strcpy(second, ptr);

                }
                i++;
                ptr = strtok(NULL,"*");

        }
        printf("");
}
int partial_match_count(char* search_str, char* first, char* second) {

        int match_count = 0;
        int each_match = 0;
        for (int i = 0; i < strlen(search_str);i++) {
                //first str
                if (search_str[i] == first[0]&& second[0]!= ' ') {

                        int match = 0;
                        for (int k = i; k < i + strlen(first); k++) {
                                if (search_str[k] == first[match]) {
                                        match++;
                                }

                        }

                        if (match == strlen(first)) {//first is right


                                for (int j = i + strlen(first); j < strlen(search_str);
j++) {//find second and the same first
                                        each_match = 0;
                                        //예외처리
                                        if (search_str[j] == first[0]) {
                                                int match_1 = 0;
                                                for (int r = 0; r < strlen(first); r++)
{

                                                        if (search_str[j+r] ==
first[match_1]) {

                                                                match_1++;
                                                        }
                                                        else {
                                                                match_1 = 0;
                                                                break;
                                                        }
                                                }
                                                if (match_1 == strlen(first)) {
                                                        break;//first 중복
                                                }

                                        }

                                }
```

```c
                                //예외처리

                                //second str
                                if (search_str[j] == second[0]) {

                                        int match_2 = 0;
                                        for (int n = j; n < j + strlen(second);
n++) {

                                                if (search_str[n] ==
second[match_2]) {

                                                        match_2++;
                                                }
                                                else {
                                                        match_2 = 0;
                                                        break;
                                                }

                                        }
                                        if (match_2 == strlen(second)) {
                                                each_match++;
                                                if (each_match == 1) {
                                                        match_count++;
                                                }
                                        }
                                }

                        }

                }

        }
        else if (search_str[i] == first[0] && second[0] == ' ') {
                int match = 0;
                for (int k = i; k < i + strlen(first); k++) {
                        if (search_str[k] == first[match]) {
                                match++;
                        }
                }

                if (match == strlen(first)) {
                        match_count++;
                }
        }

    }

    return match_count;
}
```

Microsoft Visual Studio Debug Console

```
// --- EXPERIMENT(1) --- //
String : Every Ever Ever sdgdsfg y
Search-First : Every
Search-Second :
Num Matches : 1

// --- EXPERIMENT(2) --- //
String : My name is hong gil dong. My brother is hong je dong. My sister is hong gilja, and her friend is hongdong.
Search-First : hong
Search-Second : dong
Num Matches : 3

// --- EXPERIMENT(3) --- //
String : i sdfsd n i n  i in
Search-First : i
Search-Second : n
Num Matches : 3

// --- EXPERIMENT(4) --- //
String : Speaking outside of the courtroom on Thursday, Sarkozy's lawyer Thierry Herzog told French media that he would
be launching an appeal.
Search-First : the courtroom
Search-Second :  on Thursday
Num Matches : 1

// --- EXPERIMENT(5) --- //
String : Lambert said he told Sarkozy about the memo and indicated to him the necessity to cut campaign spending, while
Sarkozy maintained that he had no knowledge of the overspending.
Search-First : and indicat
Search-Second : ed to him
Num Matches : 1

C:\Users\한웅재\source\repos\Project2\x64\Debug\Project2.exe (process 18184) exited with code 0.
Press any key to close this window . . .
```

Q3. Index Search p.43

```c
#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 NUM_TEST_SET 3

struct DATASET {

        char name[10];
        int age;
        char hobby[10];

}dataset[5] = { {"Kim",39,"Tennis"},
        {"Ko",15,"Soccer"},
        {"Lee",17,"Soccer"},
        {"Choi",21,"Tennis"},
        {"Park",10,"Tennis"}};

struct INDEX {
```

```c
        char key[10];
        int index;

}index[5] = { {"Kim",0},
        {"Ko",1},
        {"Lee",2},
        {"Choi",3},
        {"Park",4}};

int Search_Index(char* search);

int main() {

        char test_search_keys[NUM_TEST_SET][10] = {"Cha","Lee","Park"};

        for (int i = 0; i < NUM_TEST_SET; i++) {

                char* search_key = test_search_keys[i];
                int index = Search_Index(search_key);

                printf("\n _-_-_Experiment [%d]_-_-_ \n", i + 1);
                printf("Key: %s\n", search_key);
                if (index < 0) {

                        printf("THE KEY DOES NOT EXIST \n");
                }
                else {

                        printf("RESULT: INDEX[%d], NAME[%s], AGE[%d], HOBBY[%s] \n",
index, dataset[index].name, dataset[index].age, dataset[index].hobby);
                }




        }



        return 0;
}
int Search_Index(char* search) {

        for (int i = 0; i < 5; i++) {

                for (int k = 0; k < strlen(index[i].key); k++) {
                        if (index[i].key[0] == search[0]) {
                                int match_count = 0;
                                for (int r = 0; r < strlen(search); r++) {
                                        if (index[i].key[r] == search[r]) {
                                                match_count++;
                                        }
                                        if (match_count == strlen(index[i].key)) {
                                                return i;
                                        }

                                }
                        }

                }

        }
```
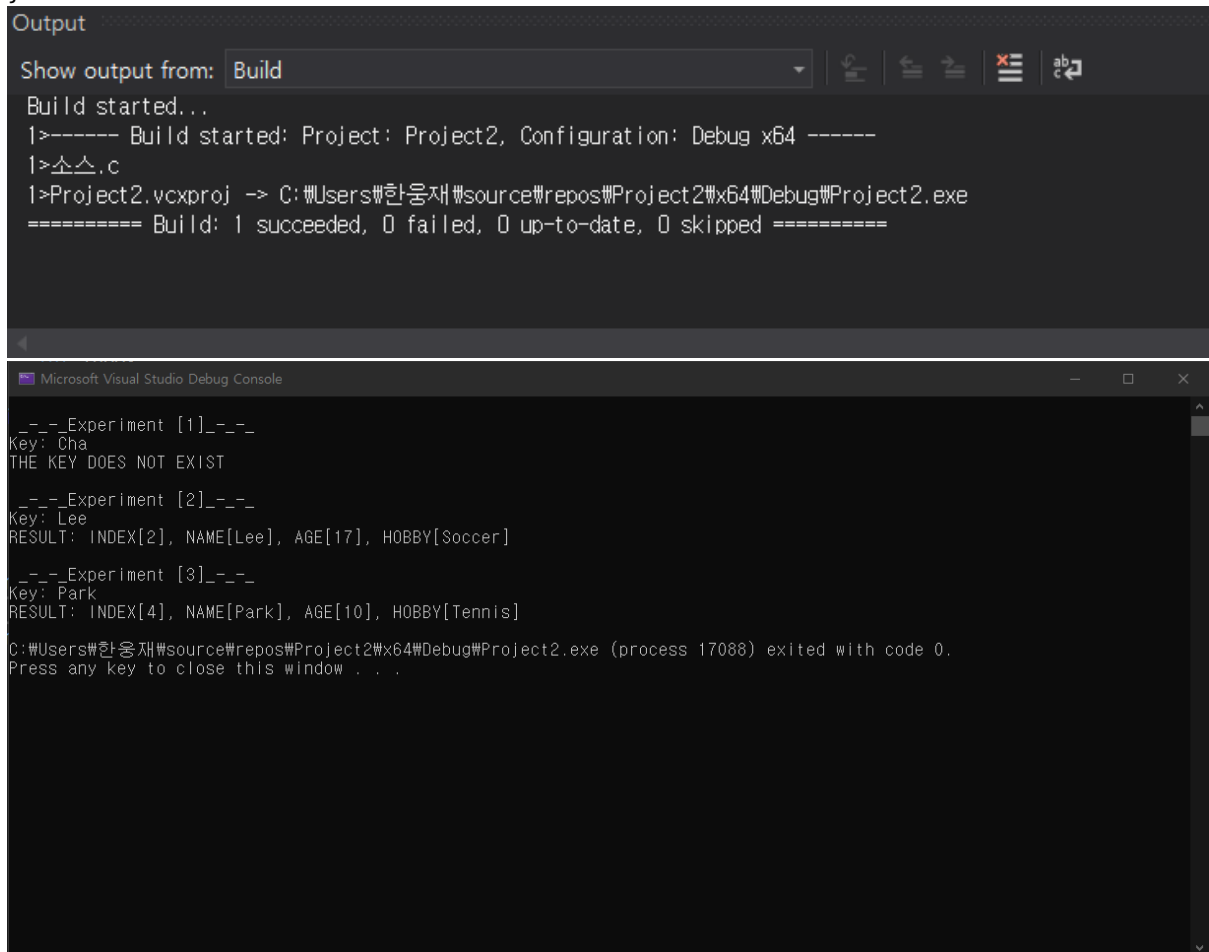
```
        }

        return -1;
}
```

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 ==========
```

Microsoft Visual Studio Debug Console

```
_-_-_Experiment [1]_-_-_
Key: Cha
THE KEY DOES NOT EXIST

_-_-_Experiment [2]_-_-_
Key: Lee
RESULT: INDEX[2], NAME[Lee], AGE[17], HOBBY[Soccer]

_-_-_Experiment [3]_-_-_
Key: Park
RESULT: INDEX[4], NAME[Park], AGE[10], HOBBY[Tennis]

C:\Users\한웅재\source\repos\Project2\x64\Debug\Project2.exe (process 17088) exited with code 0.
Press any key to close this window . . .
```