

프로그래밍 실습 1

```
#include<stdio.h>
#include<conio.h>
#include<time.h>
#include<string.h>
#include<Windows.h>

#define max11 3
#define max12 101
#define max21 3
#define max22 101

void main()
{
    int i,j,k,l;
    char t1[max11][max12+1];
    char t2[max21][max22+1];
    char t1t2[max11*max21][max12+max22+1];
    char t2t1[max11*max21][max12+max22+1];
    double start, end;

    printf("\n 문자열 T1에 대해서 3개의 문자열을 입력하세요.\n");
    for(i=0;i<3;i++)
    {
        fflush(stdin);
        scanf("%s",t1[i]);
    }

    printf("\n 문자열 T2에 대해서 3개의 문자열을 입력하세요.\n");
    for(i=0;i<3;i++)
    {
        fflush(stdin);
        scanf("%s",t2[i]);
    }

    printf("\n concatenation of T1 & T2\n");
    k=0;

    for(j=0;j<max21;j++)
    {
        for(i=0;i<max11;i++)
        {
            strcpy(t1t2[k],t1[i]);
            strcat(t1t2[k],t2[j]);
            k++;
        }
    }

    for(i=0;i<max11*max21;i++)
    {
        printf("%s\n", t1t2[i]);
    }

    printf("\n concatenation of T2 & T1\n");
    k=0;
```

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for(j=0;j<max11;j++)
{
    for(i=0;i<max21;i++)
    {
        strcpy(t2t1[k],t2[i]);
        strcat(t2t1[k],t1[j]);
        k++;
    }
}

for(i=0;i<max11*max21;i++)
{
    printf("%s\\n", t2t1[i]);
}

system("PAUSE");
}

```

프로그래밍 실습 2

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<time.h>
#include<string.h>
#include<Windows.h>

void main()
{
    int i,j,k,l,g;
    char t1[5][20001]={NULL};
    char t2[3][101]={NULL};

    char t1t2[15][20102];

    char t2t1[15][20102];
    char temp='W0';
    double start, end;
    FILE *fp1, *fp2, *fp3;
    fp1=fopen("T1data.txt", "w+");
    fp2=fopen("pointer_result.txt", "w+");
    fp3=fopen("notpoint_result.txt", "w+");

    printf("\ncreated a T1 : SAVE T1data.txt\n");
    for(i=0; i<5; i++)
    {
        for(j=0;j<20000;j++)
        {
            temp=rand()%26+65;
            fprintf(fp1, "%c", temp);
            t1[i][j]=temp;
        }
        t1[i][j]='W0';
        fprintf(fp1, "\n");
    }

    printf("\nImage of T2\n");
    for(i=0;i<3;i++)
    {
        fflush(stdin);
        scanf("%s",t2[i]);
    }

    printf("\nImage of T2\n");
    for(i=0;i<3;i++)
    {
        printf("<%s>\n",t2[i]);
    }

    printf("\n POINTER T1 & T2");
    printf("\n    SAVE pointer_result.txt\n");
    start = clock();
    for(g=0;g<100;g++)
    {
        k=0;
        for(j=0;j<3;j++)
```

```

        {
            for(i=0;i<5;i++)
            {
                strcpy(t1t2[k],t1[i]);
                strcat(t1t2[k],t2[j]);
                k++;
            }
        }
    }
    end = clock();

    for(i=0;i<15;i++)
    {
        fprintf(fp2, "%s\n",t1t2[i]);
    }
    printf("Execution time : %.3lf(ms)\n", (end-start)/100.0);

    printf("\n NOT POINTER T1 & T2");
    printf("\n    SAVE notpointer_result.txt\n");
    temp='\0';
    start = clock();

    for(g=0;g<100;g++)
    {
        k=0;
        for(j=0;j<3;j++)
        {
            for(i=0;i<5;i++)
            {
                for(l=0;l<20001;l++)
                {
                    if(t1[i][l]=='\0')
                    {
                        strcpy(t1t2[k],t1[i]);
                    }
                }
                strcat(t1t2[k],t2[j]);
                k++;
            }
        }
    }
    end = clock();

    for(i=0;i<15;i++)
    {
        fprintf(fp3, "%s\n",t1t2[i]);
    }

    printf("Execution time : %.3lf(ms)\n", (end-start)/100.0);
    fclose(fp1);
    fclose(fp2);
    fclose(fp3);
    system("PAUSE");
}

```

프로그래밍 실습 3

```
#include<stdio.h>
#include<Windows.h>

typedef struct
{
    int m;
    int c;
    char p;
}state;

void state_init(state *s)
{
    s->c = 2;
    s->m = 2;
    s->p = 'r';
}

int state_moving(state *s,int m,int c)
{
    if(s->p == 'r')
    {
        if(s->m == 2 && s->c == 2)
        {
            if(m == 0 && c == 1)
            {
                s->m = 2;
                s->c = 1;
                s->p = 'l';
            }else if(m == 0 && c == 2)
            {
                s->m = 2;
                s->c = 0;
                s->p = 'l';
            }else if(m == 1 && c == 0)
            {
                printf("Never across the river!!");
                return -1;
            }else if(m == 1 && c == 1)
            {
                s->m = 1;
                s->c = 1;
                s->p = 'l';
            }else if(m == 2 && c == 0)
            {
                s->m = 0;
                s->c = 2;
                s->p = 'l';
            }
        }else if(s->m == 2 && s->c == 1)
        {
            if(m == 0 && c == 1)
            {
                s->m = 2;
                s->c = 0;
                s->p = 'l';
            }else if(m == 0 && c == 2)
            {
                s->m = 2;
                s->c = 1;
                s->p = 'l';
            }else if(m == 1 && c == 0)
            {
                printf("Never across the river!!");
                return -1;
            }else if(m == 1 && c == 1)
            {
                s->m = 1;
                s->c = 1;
                s->p = 'l';
            }else if(m == 2 && c == 0)
            {
                s->m = 0;
                s->c = 2;
                s->p = 'l';
            }
        }
    }
}
```

```

{
    printf("Never across the river!!");
    return -1;
}else if(m == 1 && c == 0)
{
    s->m = 1;
    s->c = 1;
    s->p = 'l';
}else if(m == 1 && c == 1)
{
    s->m = 1;
    s->c = 0;
    s->p = 'l';
}else if(m == 2 && c == 0)
{
    s->m = 0;
    s->c = 1;
    s->p = 'l';
}
}else if(s->m == 2 && s->c == 0)

{
    if(m == 0 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 0 && c == 2)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 0)
    {
        s->m = 1;
        s->c = 0;
        s->p = 'l';
    }else if(m == 1 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 2 && c == 0)
    {
        s->m = 0;
        s->c = 0;
        s->p = 'l';
        printf("!!!!ACCEPT!!!!\n");
        return 1;
    }
}
}else if(s->m == 1 && s->c == 1)
{
    if(m == 0 && c == 1)
    {
        s->m = 1;
        s->c = 0;
        s->p = 'l';
    }else if(m == 0 && c == 2)
    {
        printf("Never across the river!!");
        return -1;
    }
}

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```

}else if(m == 1 && c == 0)
{
    s->m = 0;
    s->c = 1;
    s->p = 'l';
}else if(m == 1 && c == 1)
{
    s->m = 0;
    s->c = 0;
    s->p = 'l';
    printf("!!!!ACCEPT!!!!\n");
    return 1;
}else if(m == 2 && c == 0)
{
    printf("Never across the river!!");
    return -1;
}
}else if(s->m == 0 && s->c == 2)
{
    if(m == 0 && c == 1)
    {
        s->m = 0;
        s->c = 1;
        s->p = 'l';
    }else if(m == 0 && c == 2)
    {
        s->m = 0;
        s->c = 0;
        s->p = 'l';
        printf("!!!!ACCEPT!!!!\n");
        return 1;
    }else if(m == 1 && c == 0)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 2 && c == 0)
    {
        printf("Never across the river!!");
        return -1;
    }
}
}else if(s->m == 0 && s->c == 1)
{
    if(m == 0 && c == 1)
    {
        s->m = 0;
        s->c = 0;
        s->p = 'l';
        printf("!!!!ACCEPT!!!!\n");
        return 1;
    }else if(m == 0 && c == 2)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 0)

```

```

        {
            printf("Never across the river!!");
            return -1;
        }else if(m == 1 && c == 1)
        {
            printf("Never across the river!!");
            return -1;
        }else if(m == 2 && c == 0)
        {
            printf("Never across the river!!");
            return -1;
        }
    }
}

}

else if(s->p == 'l')

{
    if(s->m == 2 && s->c == 1)
    {
        if(m == 0 && c == 1)
        {
            s->m = 2;
            s->c = 2;
            s->p = 'r';
        }else if(m == 0 && c == 2)
        {
            printf("Never across the river!!");
            return -1;
        }else if(m == 1 && c == 0)
        {
            printf("Never across the river!!");
            return -1;
        }else if(m == 1 && c == 1)
        {
            printf("Never across the river!!");
            return -1;
        }else if(m == 2 && c == 0)
        {
            printf("Never across the river!!");
            return -1;
        }
    }
}

else if(s->m == 2 && s->c == 0)
{
    if(m == 0 && c == 1)
    {
        s->m = 2;
        s->c = 1;
        s->p = 'r';
    }else if(m == 0 && c == 2)
    {
        s->m = 2;
        s->c = 2;
        s->p = 'r';
    }else if(m == 1 && c == 0)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 1)
    {

```



```

        printf("Never across the river!!");
        return -1;
    }else if(m == 2 && c == 0)
    {
        printf("Never across the river!!");
        return -1;
    }
}
}else if(s->m == 1 && s->c == 1)
{
    if(m == 0 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 0 && c == 2)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 0)
    {
        s->m = 2;
        s->c = 1;
        s->p = 'r';
    }else if(m == 1 && c == 1)
    {
        s->m = 2;
        s->c = 2;
        s->p = 'r';
    }else if(m == 2 && c == 0)
    {
        printf("Never across the river!!");
        return -1;
    }
}
}else if(s->m == 0 && s->c == 2)
{
    if(m == 0 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 0 && c == 2)
    {
        s->m = 2;
        s->c = 2;
        s->p = 'r';
    }else if(m == 1 && c == 0)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 2 && c == 0)
    {
        s->m = 2;
        s->c = 2;
        s->p = 'r';
    }
}
}
}else if(s->m == 0 && s->c == 1)

```

```

{
    if(m == 0 && c == 1)
    {
        s->m = 0;
        s->c = 2;
        s->p = 'r';
    }else if(m == 0 && c == 2)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 1 && c == 0)
    {
        s->m = 1;
        s->c = 1;
        s->p = 'r';
    }else if(m == 1 && c == 1)
    {
        printf("Never across the river!!");
        return -1;
    }else if(m == 2 && c == 0)
    {
        s->m = 1;
        s->c = 1;
        s->p = 'r';
    }
}else if(s->m == 0 && s->c == 0)
{
    if(m == 0 && c == 1)
    {
        s->m = 0;
        s->c = 1;
        s->p = 'r';
    }else if(m == 0 && c == 2)
    {
        s->m = 0;
        s->c = 2;
        s->p = 'r';
    }else if(m == 1 && c == 0)
    {
        s->m = 1;
        s->c = 0;
        s->p = 'r';
    }else if(m == 1 && c == 1)
    {
        s->m = 1;
        s->c = 1;
        s->p = 'r';
    }else if(m == 2 && c == 0)
    {
        s->m = 2;
        s->c = 0;
        s->p = 'r';
    }
}
}
return 0;
}

```

```

int main()
{
    int res = 0;
    int input_m,input_c;
    state s;

    state_init(&s);

    while(res == 0)
    {
        printf("state : (%d,%d,%c)\n",s.m,s.c,s.p);
        scanf("%d %d",&input_m,&input_c);
        printf("Input : (%d,%d)\n",input_m,input_c);
        res = state_moving(&s,input_m,input_c);
    }
    printf("\n\nstate : (%d,%d,%c)\n",s.m,s.c,s.p);

    system("PAUSE");
}

```