

Practice 04. Flow of Control

Biointelligence Laboratory
School of Computer Science and Engineering
Seoul National University

cat

- **cat <file-name>** : 해당 파일의 내용을 출력함.

```
root@pp:~# cat file.txt
1.5
6.3
7.2
root@pp:~#
```

Pipeline

- 어떤 명령어의 표준 출력을 다른 명령어의 표준 입력으로 넘기는 기능

cat in.txt | ./a.out



Pipeline

```
root@pp:~# gcc main.c
root@pp:~#
root@pp:~# cat in.txt | ./a.out
15 and 21 and 6
root@pp:~#
```

```
[in.txt]
```

```
15 21 6
```

```
[main.c]
```

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

```
int main()
```

```
{
```

```
    int a,b,c;
```

```
    scanf("%d%d%d", &a, &b, &c);
```

```
    printf("%d and %d and %d\n", a, b, c);
```

```
    return 0;
```

```
}
```

Draw Box 1

```
#include <stdio.h>

int main()
{
    int i,j;
    for (i = 0; i < 10; i++)
    {
        for (j = 0; j < 10; j++)
            printf("*");
        printf("\n");
    }
    return 0;
}
```

```
root@pp: ~# ./a.out
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
```

Draw Box 2

```
#include <stdio.h>

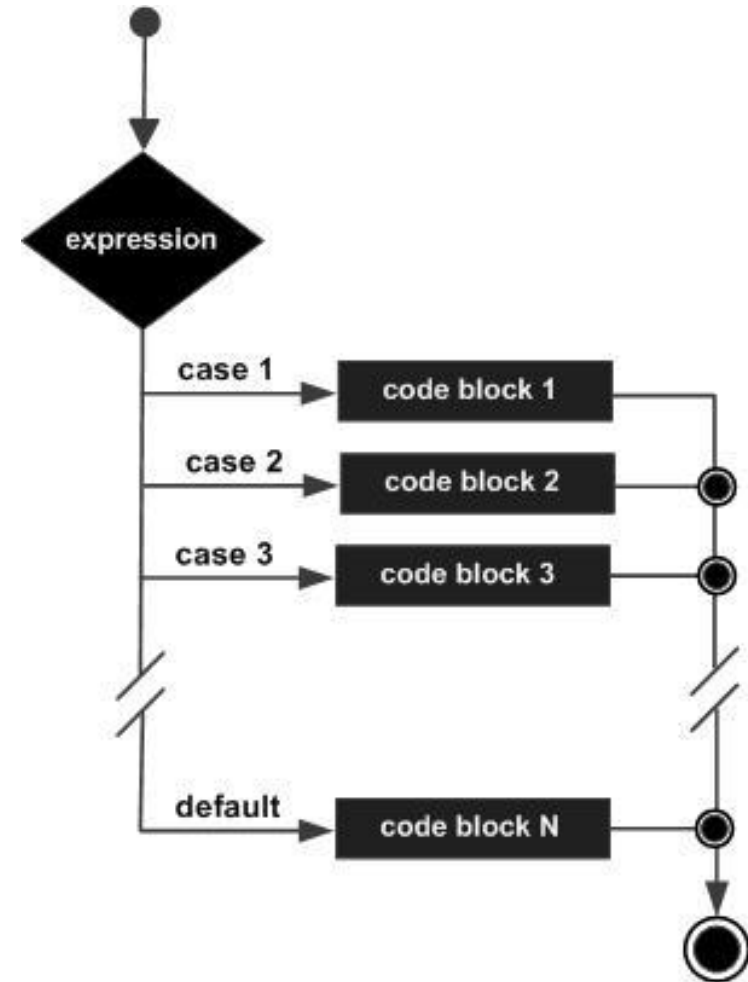
int main()
{
    int i,j;
    for (i = 0; i < 10; i++)
    {
        for (j = 0; j < 10; j++)
        {
            if (i == 0 || i == 9 || j == 0 || j == 9)
                printf("*");
            else
                printf(" ");
        }
        printf("\n");
    }
    return 0;
}
```

```
root@pp:~# ./a.out
*****
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*****
```


switch

```
switch(expression){  
  case constant-expression1 :  
    <code block1>  
  case constant-expression2 :  
    <code block2>  
  case constant-expression3 :  
    <code block3>  
  
  ...  
  
  default : /* Optional */  
    statements3;  
}
```

When the variable being switched on is equal to a case, the statements following that case will execute until a **break** statement is reached.



switch

```
#include <stdio.h>

int main ()
{
    /* local variable definition */
    char grade = 'B';

    switch(grade)
    {
        case 'A' :
            printf("Excellent!\n" );
            break;
        case 'B' :
        case 'C' :
            printf("Well done\n" );
            break;
        case 'D' :
            printf("You passed\n" );
            break;
```

```
        case 'F' :
            printf("Better try again\n" );
            break;
        default :
            printf("Invalid grade\n" );
    }
    printf("Your grade is  %c\n", grade );

    return 0;
}
```

Practice Submission

- **Submit the practice problems if they are not checked in the class time.**
- Submit the solution codes of **practice problem 01, 02, 03** by email.
- hnikwak@bi.snu.ac.kr
- Mail title: **prg_[student number]_practice04**
 - prg_2014-12345_practice04
- Submit source files named **p01.c, p02.c, ...** for each problem.
- Due to : **4/1(Wed) 23:59 pm**

Assignment Submission

- Create a directory named **assignment** in your home directory.
- Create a directory named **04** in your **assignment** directory.
- Put your C files named **p[# of problem].c** for each problem.
 - p01.c
 - p02.c
 - ...
- Due to : **4/1 (Wed) 23:59 pm**

practice 01 – check characters

- The first line of the input contains a single integer ($0 < N < 20$).
- The second line of the input contains N non-whitespace characters.
- Output a category for each character. The categories are one of (a)lphabet, (n)umber, or (o)ther.

[Input]

5

a3&W!

[Output]

anoao

practice 02 – switch

- The first line of the input contains a single integer ($0 < N < 20$).
- The second line of the input contains N lower case characters.
- Output a category for each character. The categories are one of (v)owel, (c)onsonants.
- **Use switch statement!**

[Input]

5

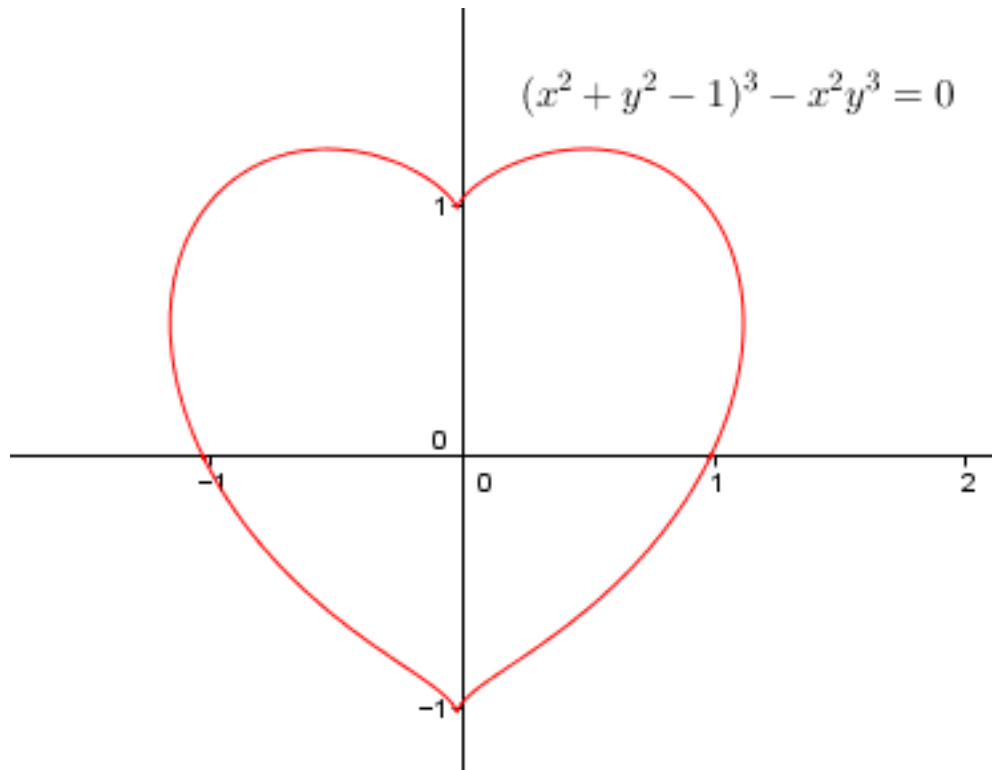
aodze

[Output]

VVCCV

practice 03 – draw heart

- Draw a heart using the following equation.



assignment 01 – draw stairs

- Draw stairs whose height is given by an input.

[Input]

7

[Output]

*

**

assignment 02 – ternary number

- Convert a positive integer ($0 < N < 10000$) given by an input to a ternary number(base 3 number).
- Hint : $N/(3^n)\%3$

[Input]

8633

[Output]

102211202

assignment 03 – count words

- The input contains some words separated by one or more spaces or line feeds ('\n') and finishes with a character 'Q'. The words only contain lower case characters and there's no invalid words.
- Output the number of words in the input.

[Input]

```
apple  banana
  candy duck      entropy
fancy  Q
```

[Output]

6