Practice 04. Flow of Control

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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
```

`stdout` `stdin`
Pipeline

```
#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;
}

root@pp:~# gcc main.c
root@pp:~# cat in.txt | ./a.out
15 and 21 and 6
root@pp:~#
```
#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;
}
```
#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;
}
```
```c
#include <stdio.h>

int main()
{
    int i, j;
    for (i = 0; i < 10; i++)
    {
        for (j = 0; j < 10; j++)
        {
            if (((i+j) % 2 == 1)
                printf("*"));
            else
                printf(" ");
        }
        printf("\n");
    }
    return 0;
}
```

```
root@pp:~# ./a.out
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```
When the variable being switched on is equal to a case, the statements following that case will execute until a break statement is reached.
```c
#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;
}
```
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.

hnkwak@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
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]
onoao
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.

\[(x^2 + y^2 - 1)^3 - x^2y^3 = 0\]
assignment 01 – draw stairs

- Draw stairs whose height is given by an input.

**Input**

7

**Output**

*
**
***
****
*****
******
*******
********
Convert a positive integer $0 < N < 10000$ given by an input to a ternary number (base 3 number).

Hint: $N/(3^n) \% 3$
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