

Homework 2 (due:April 17th)

- Deadline : April 17th 11:59pm
- Where to submit? eClass “과제방” (<http://eclass.cau.ac.kr>)
- How to submit?
 - Create a folder. The name of the folder should be “studentID#.hw2”. (ex) 20111499.hw2
 - We have four problems in hw2. Make three C source files. The name of the source files should be the format “studentID#.hw2.#.c”
 - (ex) 20111499.hw2.1.c, 20111499.hw2.2.c, 20111499.hw2.3.c, 20111499.hw2.4.c
 - In each source file .c, your code must have comments that include your name and student_id#
 - Put the four source files into the folder we created.
 - Compress the folder into a zip file. The name of the zip file should be “student#.hw2.zip”. (ex) 20111499.hw2.zip
 - Upload the zip file into eClass website.
 - If you don't follow above instructions, you may get penalty in your score.
 - You must do programming yourself.**

- Write a program that reads an integer N ($0 \leq N \leq 1000000000$) from keyboard and prints the sum of its digits as an output.

```
#include <stdio.h>

int main()
{
    int N;
    // you may declare variables here

    scanf("%d",&N);
    // put your code here

    return 0;
}
```

Input example

output example ← 4+2+7+1+8+1+3+9+2

- Input an integer B containing only 0 and 1 (i.e., a binary integer) and print its decimal equivalent. Assume the total number of the binary digits is less than 10.

```
#include <stdio.h>

int main()
{
    int B;
    // you may declare variables here

    scanf("%d",&B);
    // put your code here

    return 0;
}
```

Input example

output example ← 64+16+8+2+1

- Write a C program that inputs an integer N and prints the following diamond shape where middle line has N asterisks(*). (Assume N is an odd number that is less than 30.)

```
#include <stdio.h>

int main()
{
    int N;
    // you may declare variables here

    scanf("%d",&N);
    // put your code here

    return 0;
}
```

Input example

output example

```
  *
 ***
*****
*****
*****
*****
  ***
   *
```

4. One interesting application of computers is histogram. Write a program that reads three numbers (each between 1 and 30). For each number read H, your program should print a line containing that number H and H adjacent asterisks. For example, if your program reads the number seven, it should print 7:*****. Be careful about the alignment.

```
#include <stdio.h>

int main()
{
    int h1,h2,h3;
    // you may declare variables here

    scanf("%d %d %d",&h1,&h2,&h3);
    // put your code here

    return 0;
}
```

Input example

3 15 8

output example

3:***
15:*****
8:*****