

Exercise 2.1: scanf

Exercise 2-1: sample of scanf: key_input.c

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- Compile key_input.c , and check the results
- Change to a program key_input2.c that supports decimal numbers

```
$ gcc -Wall -o key_input key_input.c
$ ./key_input
```

```
#include <stdio.h>

int main()
{
    /*** variable declaration ****/
    int x, y;          /* integer type */

    /*** processing contents ****/
    printf("Input two numbers: ");

    /* keyboard input */
    scanf("%d,%d", &x, &y);

    /* display the input values */
    printf("x=%d\n", x);
    printf("y=%d\n", y);

    return 0;
}
```

- Enter two integers and check the results
 - 10 20
- Check what happens if you enter two decimals



Change to a program that supports decimal numbers
Let's save it as key_input2.c

key_input.c receives 2 integers and prints them out. In order to support decimal numbers, we cannot use the type `int` because it will truncate the decimals off of the numbers we input. In order to retain the decimals, we need to change the type to `float` or `double`. We also need to change the format specifiers from `%d` to `%f` when printing the numbers so that it fits the type of our variable, which is `float`.

Putting all this together, we rewrite the program as such:

```
#include <stdio.h>

int main(){

    /*** variable declaration ****/
    float x, y;          /* integer type */

    /*** processing contents ****/
    printf("Input two numbers: ");

    /* Get keyboard input */
    scanf("%f %f", &x, &y);

    /* display getting value */
    printf("x=%f\n", x);
    printf("y=%f\n", y);

    return 0;
}
```

Running the compiled program in the terminal produces this output:

```
~/GitHub/pip/lec02 — iain portal
Last login: Thu Oct 12 13:22:52 on ttys003
      'c.      max@Maximilians-MacBook-Air.local
      ,xNM.
      .OMMMO
      OMMMO,
      .;loddo:' loolloddol;.
      cKMMMMMMMMMMMMMMMMMMMMMMO:
      .KMMMMMMMMMMMMMMMMMMMMMMWd.
      XMMMMMMMMMMMMMMMMMMMMMMX.
      ;MMMMMMMMMMMMMMMMMMMMMM:
      :MMMMMMMMMMMMMMMMMMMMMM:
      .MMMMMMMMMMMMMMMMMMMMMMX.
      kMMMMMMMMMMMMMMMMMMMMMMWd.
      .XMMMMMMMMMMMMMMMMMMMMMMk
      .XMMMMMMMMMMMMMMMMMMMMMMk.
      kMMMMMMMMMMMMMMMMMMMMMMd
      ;KMMMMMMMMMMXXMMMMMMMMk.
      .c00c,.      .,c00:.

max lec02 % ./key_input
Input two numbers: 8.6 9.8
x=8.600000
y=9.800000
max lec02 %
```