

Chapter 1

C Program

1.1 How to download

Just like other programming languages, in order to write a C program you need to have a text editor and a compiler. For me, I use neovim as my main editor. Installing a compiler is straight forward. On Arch Linux,

```
$ sudo pacman -S gcc neovim
```

to install the compiler gcc, and neovim for text editor.

1.2 Data types

There are many data types in C programming.

data type	data format
int	%d
float	%f
char	%c
char []	%s

1.3 Operators

Suppose that $a = 10$ and $b = 3$. In the “Return value” column, 0 means *false* and 1 means *true*.

logic operator	return value
$a==b$	0
$a>b$	1
$a<b$	0
$a>=b$	1
$a<=b$	0

1.4 Control Structure (Loop)

Example 1.4.1. Write a C program to receive two numbers and an operator from the user, then print out the result correspond to that operator.

```
1  #include <stdio.h>
2
3  int main(){
4      float a,b, result;
5      char operator;
6
7      printf("enter the value of A: "); scanf("%f", &a);
8      printf("enter the value of B: "); scanf("%f", &b);
9      printf("enter the operator : "); scanf("\n%c", &operator);
10
11
12     if (operator == '+'){result=a+b;}
13     else if (operator == '-'){result=a-b;}
14     else if (operator == '*'){result=a*b;}
15     else if (operator == '/'){
16         if (b) {result=a/b;}
17         else {
18             printf("\n*** Error. Cannot divide by zero.");
19             return 0;
20         }
21     }
22     else {
23         printf("\n*** Aborted. Operator '%c' is not defined.",
24             operator);
25         return 0;
26     }
27     printf("\n---\n A%cB = %f\n---", operator, result);
28
29     return 0;
30 }
```