

# C Tutorial

## Introduction

A tutorial on The C Programming Language for fresher.

## Goals

1. Learn about the Syntax of C.
2. Learn to write small programs with C.
3. Know about Concepts of Computer System.

## Guides

### Development Environment

Based on Linux Shell, a command line, use GCC and Vim. GCC is a C Compiler and Vim is an easy-to-use Text Editor in Linux.

Several ways to get a shell:

1. Install a Linux variant, Ubuntu with a desktop recommended.
2. Install a Virtual Machine with a Linux variant.
3. On Windows, use DOS and gvim. DOS, also a command line somewhat like shell of Linux. Gvim, vim with GUI for Windows.
4. Buy one Cloud Server, Tencent Cloud recommended.
5. Use the server provided by teacher.

Note: The first two ways may be a little troublesome, but much meaningful to try. The last three are relatively easier, especially the 3<sup>rd</sup> one.

To Edit:

Several commands of Vim: [i], [w], [wq], [:], [/], [?], almost enough for beginners.

To Build:

As for single source file: gcc -o a.out main.c -Wall, almost enough.

As for multiple source files: write Makefile to build automatically.

## Tools

PuTTY: To log in remote server.

WinSCP: To transmit files between remote server and local host.

Makefile: To automatically build C Project, especially with multiple sources files.

Git: To manage projects.

## Books

The C Programming Language Second Edition, greatly recommended:

<https://book.douban.com/subject/1236999/>

C Primer Plus Fifth Edition, a little long, but in much detail: <https://book.douban.com/subject/1457333/>

## Resources

ZJU – PTA and PAT: <https://www.patest.cn/>