My notes from K.N. King's "C Programming A Modern Approach" 2nd version

Piotr Marendowski

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Chapter 1

Note

In this material I will go over everything from book, trying to summarize every note-worthy subject. I will do it, while learning Latex, so good luck to me.

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Chapter 2

C Fundamentals

2.1 Steps of Executing a C Program

Automated process:

- 1. **Preprocessing** Preprocessor is executing directives (they begin with #).
- 2. **Compiling** Compiler translates program into machine instructions (object code).
- 3. **Linking** Linker combines object code and code needed for execution of the program.

2.2 The Generaral Form of a Simple Program

Simple C programs have this form:

```
directives
int main(void)
{
    statements
}
```

Directives - Begin with '#' symbol, they state what headers include to program. **Functions** - They are segments of code that take arguments, and returns (or not) a value. Only main function is required.

Statements - Commands to execute, mostly end with semicolon.

String literal - Series of characters enclosed in double quotation marks, e.g. "Hello world!".

New-line character - \n is an escape sequence, which advances to the next line of output.

Comments - Are ommitted in program execution, can be used to comment single line e.g. /* Comment */, or block of lines. From C99 we can use one line comments e.g. // Comment.

2.3 Variables and Assigments

Variable - Place to store calculation's output, for using in future. Variable's characteristics:

- **Types** For now, there are two types of variables:
 - int Integer types, can store quite big whole number, but that depends on your computer's architecture.
 - float Can store bigger numbers, as well as digits after decimal point.
- Declarations To use a variable, we first need to declare it. It means that we need to specify variable's type, and name. We can chain declarations with the same type e.g. int i, sum, x;. In C99 they can now be declared after statements, not like in C89.
- Assignment We assign value to a variable. Variable is on the left side, while value, expression, formula etc. is on the right side. To assign something to a variable, we first need to declare it. Examples:

```
int i;
float f;
i = 1;
f = 1.5;
```