

16 Nov 2020,

Programming Fundamentals (Universal)

Note: common across all the programming languages.

- ✓ → Functions.
- Variables, Data types. (today)
- Comparison Operators (today)
- ✓ → Control Structures.
- Arithmetic Operators

Variables:

(Think about linear eqns)

$$a = 5 \quad (\alpha)$$

$$\boxed{E=mc^2}$$

$$6b + 3a = 10 \quad (\beta)$$

Find value of b .

$$\left. \begin{array}{l} 6b = 6 \times b \\ 3a = 3 \times a \\ \quad \quad \quad = 3 \times 5 \\ \quad \quad \quad = 15 \end{array} \right\}$$

$$b = \frac{-5}{b}$$

$$\boxed{b = -0.83}$$

$$6b + 15 = 10$$

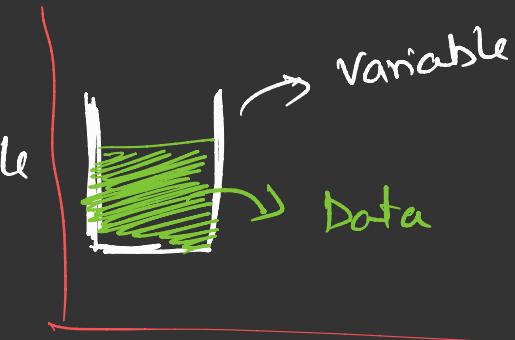
$$6b = 10 - 15$$

$$6b = -5$$

Variable declaration in C (Rules)

- It should begin with a letter (or) underscore " _ " (eg: _name, name)
- Variables are case sensitive (eg: nAme & name are diff)
- It can contain digits & numbers.
(eg: _name1, -72a, 12_a (invalid))
- No other symbols other than underscore is allowed.

- Variable holds data.
- The data stored in a variable can be changed.
- What type of data?
 - Numbers → Integers (int)
01... 11 → Float (float)
 - Characters → Character (char)



Basic Linux commands:

ls - List → List all the files in current working directory.

pwd - Print Working Directory .

cd - Change Directory .

rm - Remove aka Delete a file or folder .

cat - Print the file contents .

How to get help:

\$ man command

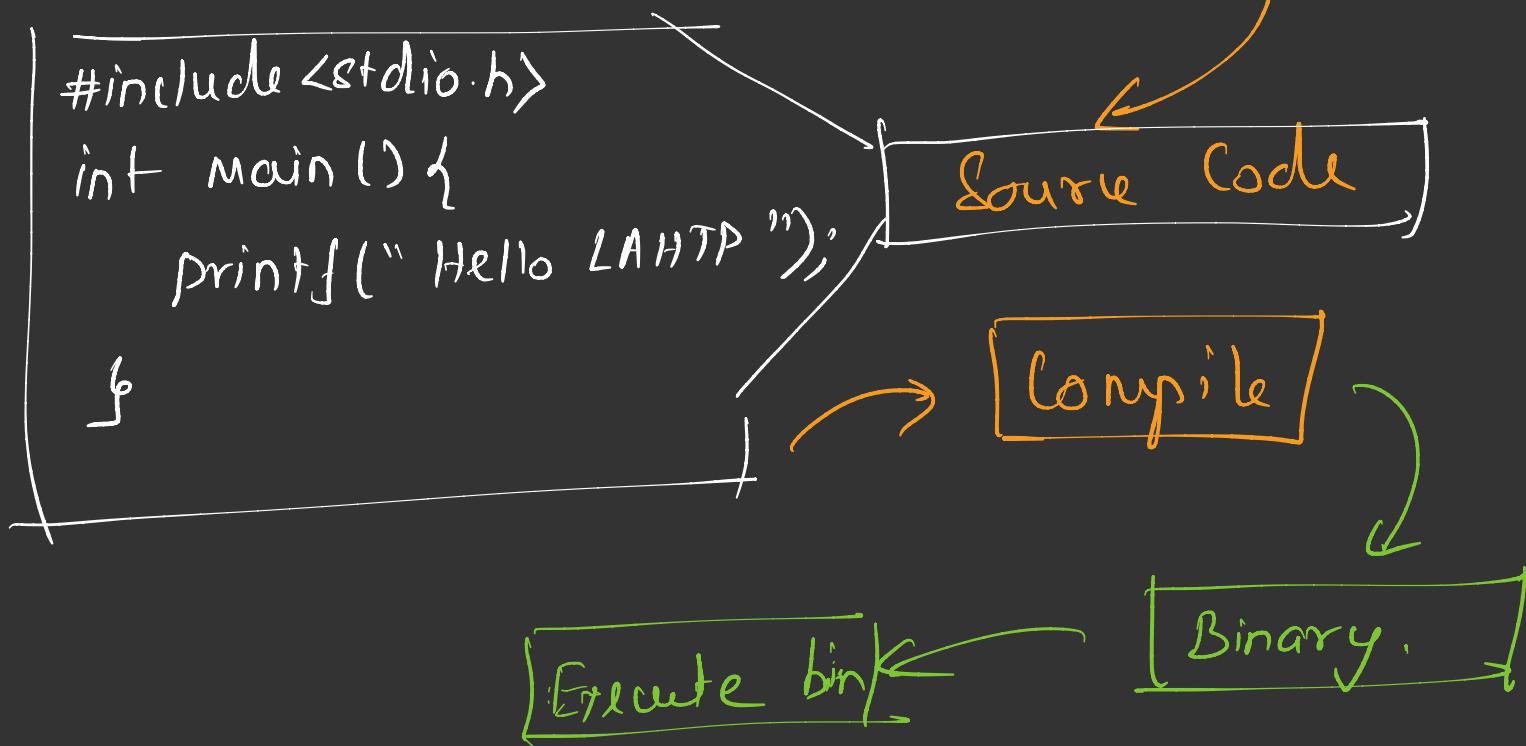
\$ command --help

Text editor → nano

New file: \$ nano filename

How to write your first C program:

→ Filename must end with .c



How to compile:

\$ gcc -o <output-file> <source-file.c>

\$ gcc <source-file.c> → a.out

How to execute:

\$./output-file

Anatomy of a C code:

- Must have a function called main()
- Entry point of execution is main()
- It should include a header file
- All instructions should end with a semi colon (;)

printf

printf (" _____ ", vars)

printf ("Hello ... %f is value of %d"
 f, d));

format chars:

%d → Integer

%f → float

%c → Character

%s → String,

Order of Execution:

BODMAS

B - Brackets

O - Order of (Power of, Exp)

D - Division

M - Multiplication

A - Addition

S - Subtraction

Play with Arithmetic Ops
for Today.

~~We will learn to use loops by~~
functions tomorrow.