

Tutorial 1 : Fundamental Concepts in C

December 21, 2020

Objective :

- This lab is intended to introduce fundamental concepts of programming in C.

Recommended Systems :

- Any Flavour of Linux - We will be using Ubuntu Systems in the lab 5042

References :

- Unix concepts and applications, Fourth Edition, Sumitabha Das, TMH.
- Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India.
- Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill.

Getting Started

- Switch on your monitor.
- Switch on your PC.
- Allow the machine to boot.
- Wait until the log in prompt comes.
- Log-in using your login id and password
- This opens your window manager (usually *GNOME*) with icons, the side panel, and so on. You are now ready to start your work
- Click on the terminal icon to open a *shell* (command prompt).

Tutorials : Compiling simple C Programs

- Five programs named *read_input_keyboard.c*, *centigrade_to_fahrenheit.c*, *prog3.c*, *prog4.c* and *prog5.c* have been provided in the *Reference Codes Section* of this lab exercise. Run each of them to know how they work.
- To run each of the *c* files follow the steps mentioned in **Tut-0**.

- *read_input_keyboard.c* accepts the number of students as input from the user and prints the same as a string No. of students is the user input
- *centigrade_to_fahrenheit.c* accepts the temperature in centigrade as input from the user, computes the equivalent fahrenheit value and prints the same
- *prog3.c* takes an integer *n* as input and outputs its square.
- *prog4.c* takes an integer *n* as input and is intended to compute its reciprocal $1/n$.
 1. Did you get the output as expected for all values of *n* ?
 2. List some of the values for which the output was correct.
 3. Try to reason why the output was different in some cases. If you have found the reason try to code the corrected version of *prog4.c*
- *prog5.c* prints the size of **float**, **double** and **char** data types