How to Program in C

Objective:

This lab is dedicated to giving the students a crash course on programming in C. The student will learn the Syntax and semantics of the language and practice writing some exercise programs.

This lab shall cover, the C reserved words, variables and constants, their scope, their types, casting, expressions and the various statements. Similarities and differences between C and Java are noted where appropriate. Also it shall cover Local vs. global variables, pointers, basic-type variables vs. pointer-type variables, pointer operators (*, &, ->), creating and freeing pointer variables, and the conversion between basic to pointer types.

Other important topics to be covered, such as C composite data types: *array*, *string*, *struct* and *enum* types and their element access operators; functions, passing function arguments by value vs. passing them by reference, i/o statements, formatted i/o; the standard C libraries and the *#include* directive; header files and separate compilations. These may be covered as much as possible in this lab session, and while doing the next lab.

This lab shall end with a comprehensive example and an exercise.

Note:

For those students who have not used C before, but have learned and used Java, we have collected some documents that will help them learn C fast. You can find these in item #1 of the references page linked from the main page of this course.