

Working Introduction to C

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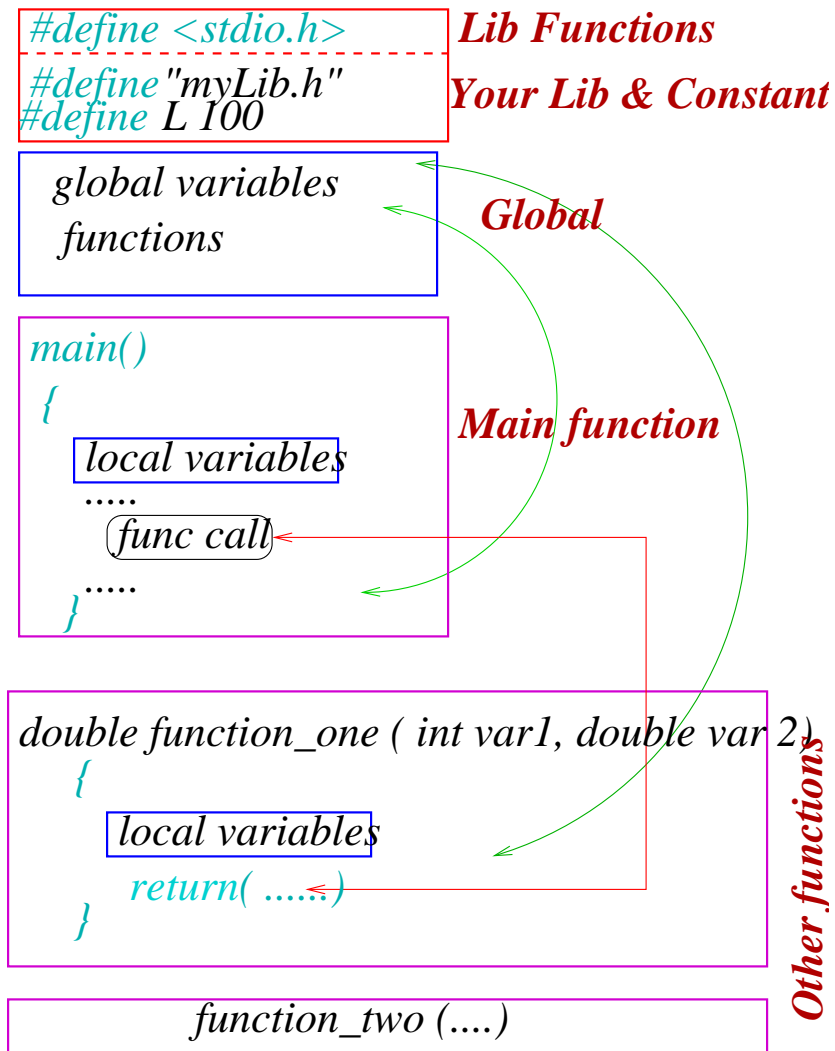
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This is not a complete tutorial. It is rather a quick-start.
Some basic facts :

- C is structure free and case-sensitive. A program in C is a collection of functions. A special function *main()* regulates all other functions.
- To learn (numerical) programming in C, we need to know Variables (types, declarations), their manipulation through operators, and then how to input or output them.
- Like every other programming, in C, by default, programs run sequentially (line after line). We must learn how to transfer control (if, while, switch), if we have to, to any arbitrary line/statement.
- Several variables can be named as *a, b, c...*, instead a convenient way is to define an array *a[i]*. Arrays can be two dimensional (a matrix) like *a[10][10]*.
- C has many (more) other features, like you can define "your own type", there are pointer and addresses and bit operators.
 - **Variable Type** : int, double, char, short, long, float
 - **Operations** : +, -, *, /, %, ++, --, +=, -=, *=, /=, ? :
 - **Input Output** : Through printf() and scanf() functions
 - **Control** :
 - if*(*i = 0; i < 100; i ++*){*statements*}
 - while*(*condition*){*statements*}
 - switch*(*var*) case1 : xxx ; case2 : xxx ; default :xxx
 - **Condition** : Logical operators ==, >=, <=, &&, || etc.
 - **Formatted output** : %d, %.9f, %lf, %c, %s
 - **Special Characters** : \n, \t, \b, \'
 - **Files** : With other declarations declare file pointer as, FILE *pt;
pt= fopen("myfile", "w");— DO-WHATEVER— ; fclose(pt);

- **Unlike FORTRAN**
 - C statements ends with ;
 - C array index starts from 0
 - "a**b" is replaced by a function "pow(a,b)"
 - C is case sensitive
- **Errors :**

- STRUCTURE of C



- Tutorials (short/quick courses:)

- Look at <http://www.lysator.liu.se/c/bwk-tutor.html> written by B. W. Kernighan, the creator of C. pdf/ps file is there in my home page.
- Short course : http://www.learn-programming.za.net/programming_c_learn01.html
- Another one : <http://phys.unsw.edu.au/mcba/c001.html>
- Learn C in 5 hrs : <http://members.tripod.com/johnt/c.html>
- **Book** : I love the book by Kernighan and Ritchie (*a bible*)