Métodos Computacionales

FISI 2028

========== RegExp, gnuplot y C==========

Python

Universidad de los Andes
Departamento de Física

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Expresiones Regulares

"In theoretical computer science and formal language theory, a regular expression (abbreviated regex or regexp and sometimes called a rational expression) is a sequence of characters that define a search pattern, mainly for use in pattern matching with strings, or string matching, i.e. **"find and replace"-like operations**. The concept arose in the 1950s, when the American mathematician Stephen Kleene formalized the description of a regular language, and came into common use with the Unix text processing utilities ed, an editor, and grep (global regular expression print), a filter."

Wikipedia

Posiciones
^ inicio de línea
$ fin de línea
Tipos de caracteres
\d dígito
\D no dígito
. cualquier caracter

Grupos y rangos
(a|b) a o b
(…) grupo
[a-d] *from* a to d
[0-4] *from* 0 to 4
[a-d] *from* a to d
\x grupo x
[abc] a o b o c

Cuantificadores
* 0 o más
+ 1 o más
? 0 o 1 vez
Especiales
^ { } + [ ] * $ \ | ? < >

más

gnuplot

“Gnuplot is a portable command-line driven graphing utility for Linux, OS/2, MS Windows, OSX, VMS, and many other platforms. The source code is copyrighted but freely distributed (i.e., you don't have to pay for it). It was originally created to allow scientists and students to visualize mathematical functions and data interactively, but has grown to support many non-interactive uses such as web scripting. It is also used as a plotting engine by third-party applications like Octave. Gnuplot has been supported and under active development since 1986.”

www.gnuplot.info

funciones: plot, splot, replot

opciones: set, unset, term, title, xlabel, ylabel, key, parametric, size, ...

Plantilla para scripts de bash

```
#!/bin/bash
gnuplot << EOF
   commands...
EOF
```

C

“C is a general-purpose, imperative computer programming language. It supports structured programming, lexical variable scope and recursion, while a static type system prevents many unintended operations. By design, C provides constructs that map efficiently to typical machine instructions, and therefore it has found lasting use in applications that had formerly been coded in assembly language, including operating systems, as well as various application software for computers ranging from supercomputers to embedded systems.”

C, Wikipedia

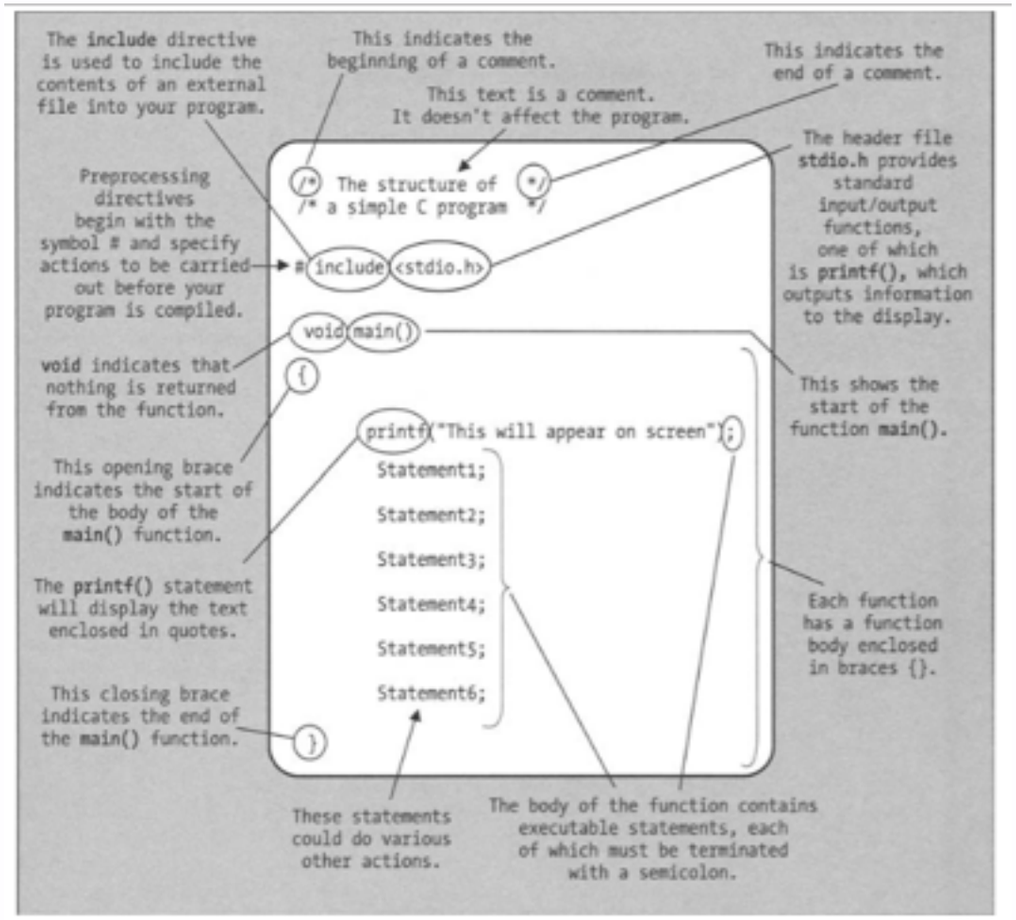

Figure 1-4. *Elements of a simple program*

***from* Beginning C by Horton**