Laboratorio 1 de Calculo Numérico
Informe

PRE LABORATORIO

Usando la ayuda de Matlab (comando help) consulte sobre los siguientes temas:

• *Librerías:*

ops

Blocks that perform mathematical operations, such as Gain and Sum

lang

Programming language constructs.

elmat

Elementary matrices and matrix manipulation.

Elfun

Elementary math functions.

graph2d

Two dimensional graphs.

• *Funciones del programador:*

function

Declare function name, inputs, and outputs

function [y1,...,yN] = myfun(x1,...,xM) declares a function named myfun that accepts inputs x1,...,xM and returns outputs y1,...,yN. This declaration statement must be the first executable line of the function.

Save the function code in a text file with a .m extension. The name of the file should match the name of the first function in the file. Valid function names begin with an alphabetic character, and can contain letters, numbers, or

underscores.

Return

return causes a normal return to the invoking function or to the keyboard. It also terminates keyboard mode.

- **Ciclos:**

while

Repeatedly execute statements while condition is true.

For

Execute statements specified number of times

for *index=values*, *program statements*, end repeatedly executes one or more MATLAB® statements in a loop. *values* has one of the following forms:

- *initval*:*endval : increments the index variable from initval to endval by 1, and repeats execution of program statements until index is greater than endval.*
- *initval:step:endval: increments index by the value step on each iteration, or decrements when step is negative.*
- *ValArray: creates a column vector index from subsequent columns of array valArray on each iteration. For example, on the first iteration, index = valArray(:,1). The loop executes for a maximum of n times, where n is the number of columns of valArray, given by numel(valArray, 1, :). The input valArray can be of any MATLAB data type, including a string, cell array, or struct.*

Break

break terminates the execution of a for or while loop. Statements in the loop that appear after the break statement are not executed.In nested loops, break exits only from the loop in which it occurs. Control passes to the statement

that follows the end of that loop.

Continue

continue temporarily interrupts the execution of a program loop, skipping any remaining statements in the body of the loop for the current pass. The continue statement does not cause an immediate exit from the loop as a break or return statement would do, but instead continues within the loop for as long as the stated for or while condition holds true.

- **Condicionales:**

if, else y elseif

Execute statements if condition is true

if *expression*, *statements*, end evaluates an expression, and executes a group of statements when the expression is true.

elseif and else are optional, and execute statements only when previous expressions in the if block are false.

- **Graficos:**

plot

plot(X,Y) creates a 2-D line plot of the data in Y versus the corresponding values in X.

Title

Add title to current axes.

Legend

Graph legend for lines and patches

Xlabel

xlabel(str) labels the *x*-axis of the current axes.

Ylabel

ylabel labels the *y*-axis of the current axes.

axes

axes creates an axes graphics object in the current figure using default property values. axes is the low-level function for creating axes graphics objects. MATLAB® automatically creates an axes, if one does not already exist, when you issue a command that creates a graph.

axis

axis manipulates commonly used axes properties. (See Algorithm section.)

grid

Grid lines for 2-D and 3-D plots

hold

The hold function controls whether MATLAB® clears the current graph when you make subsequent calls to plotting functions (the default), or adds a new graph to the current graph.