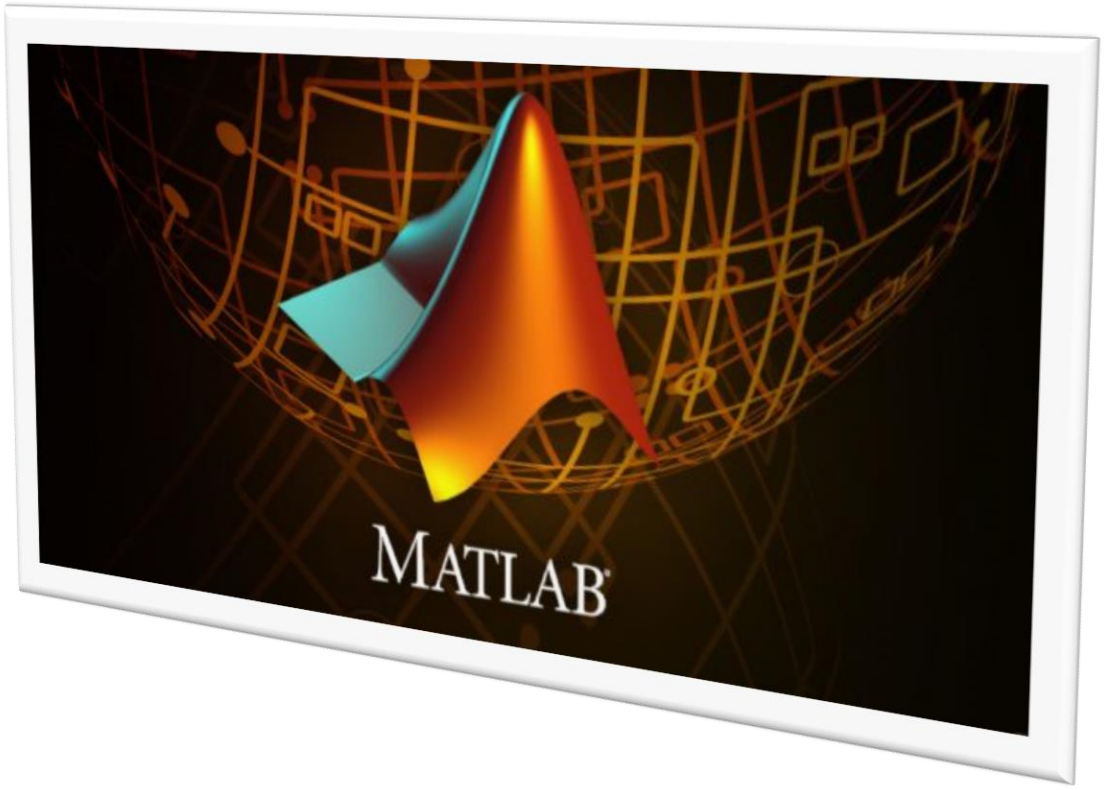
Course N°08

The if-else-elseif-end Condition in MATLAB



Dr. Salah Djerouni

1.Introduction

In this chapter, we cover the next building block in basic programming, one that exists in most programming languages and that is the conditional operators. The first conditional operator discussed is the *if-end* command. Next, we cover the *if-else-end*. Finally, we cover *if-elseif-end*.

2.Conditional operators and alternate paths

2.1.The *if* command (conditional execution)

The if statement is the simplest and most widely used of the flow control structures. It allows program execution to be directed according to the logical value of a condition. Use an if statement if you need to ask a question in order to determine what to do next.

Note.

- Conditional statements enable MATLAB to make decisions.
- The process is similar to the way we humans makes decisions.
- A condition stated. If the condition is met, one set of actions is taken. If the condition is not met either nothing is done, or a second set of actions is taken.
- For every if command a computer program must have an end command.
- A program can have many *if….end* statements following each other.
- A computer program can perform the same task using different combinations of *if-end*, *if-else-end*, and *if-elseif-else-end* statements.
- MATLAB starts at the beginning of the *if* sequence.
- It proceeds one condition to the next.
- When it finds a true statement, the appropriate section of the code is executed.
- The sequence is then terminated!!!
- The last section of code is closed using the keyword end.
- If two mutually exclusive actions can occur as a result of a decision, use the else statement.

The form of a conditional statement

Relational operator	Meaning
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
==	Equal to
~=	Not equal to
&&	And
||	Or
~	not

3. The three forms of the if statement

There are three forms for an if statement :

- If-end by itself

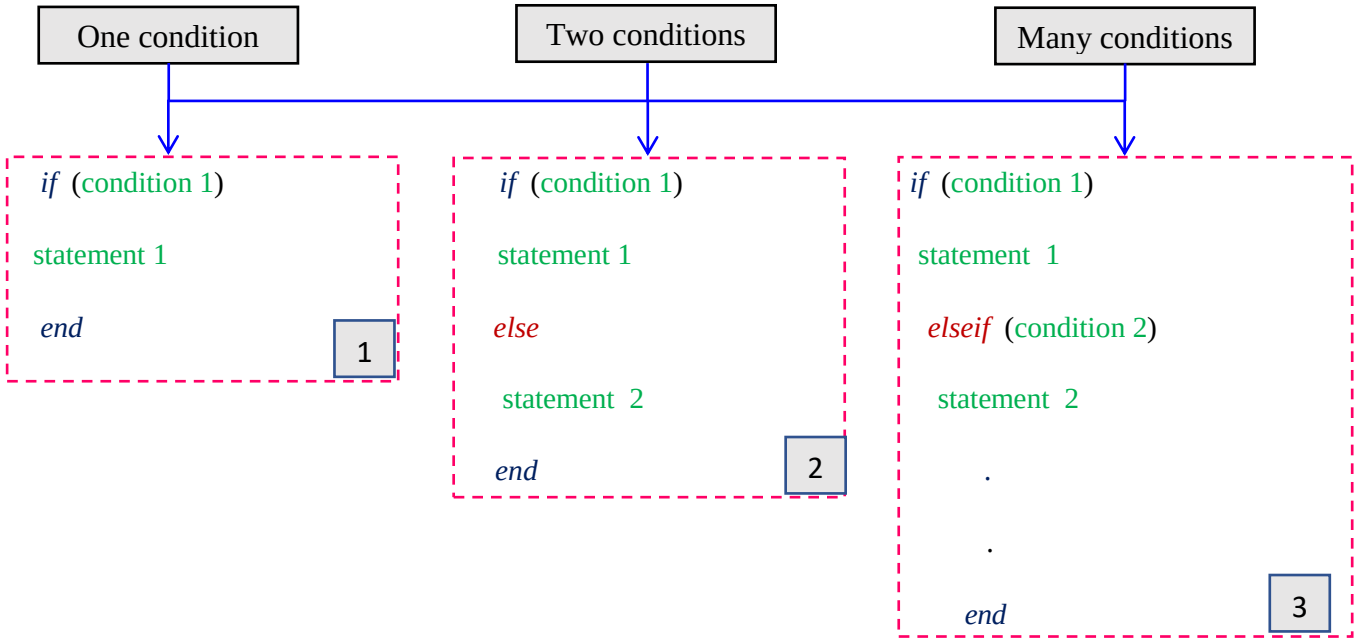
Use for problems where you want to do something or nothing (see fig.1).

- If-else-end

Use for problems where you want to do one thing or another thing (see fig.2).

- If-elseif-end

Use for problems where do you want to do one thing out of three or more choices (see fig.3).



Example

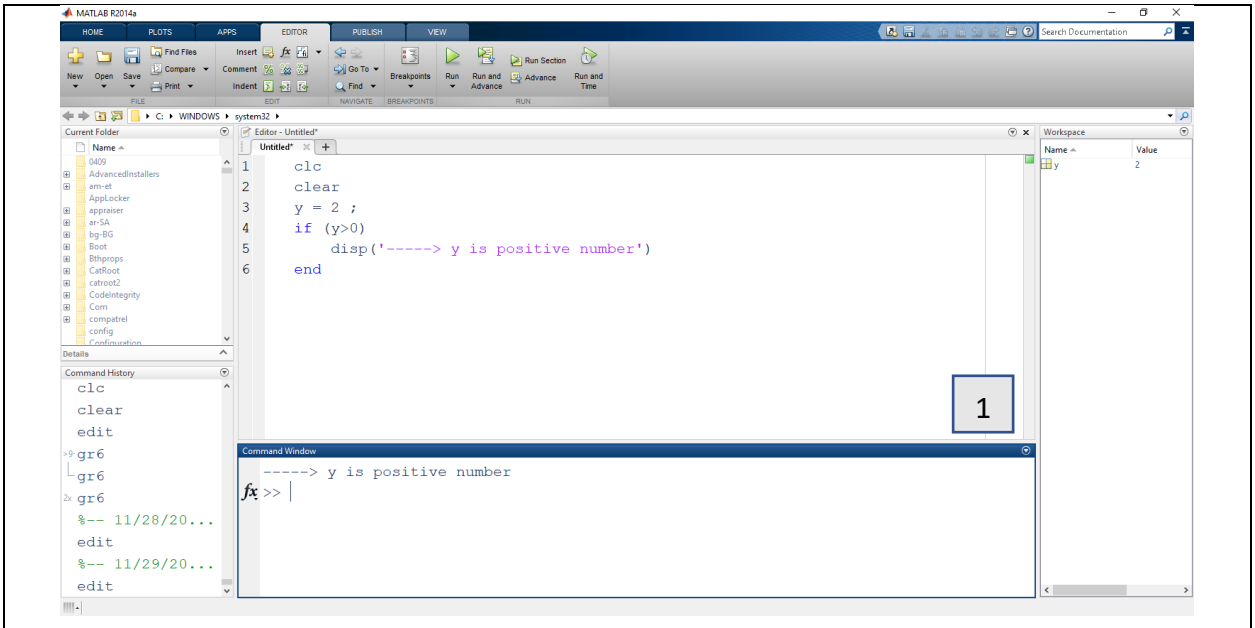


Fig 1. An example of the *if* statement *end (one condition)*

Example

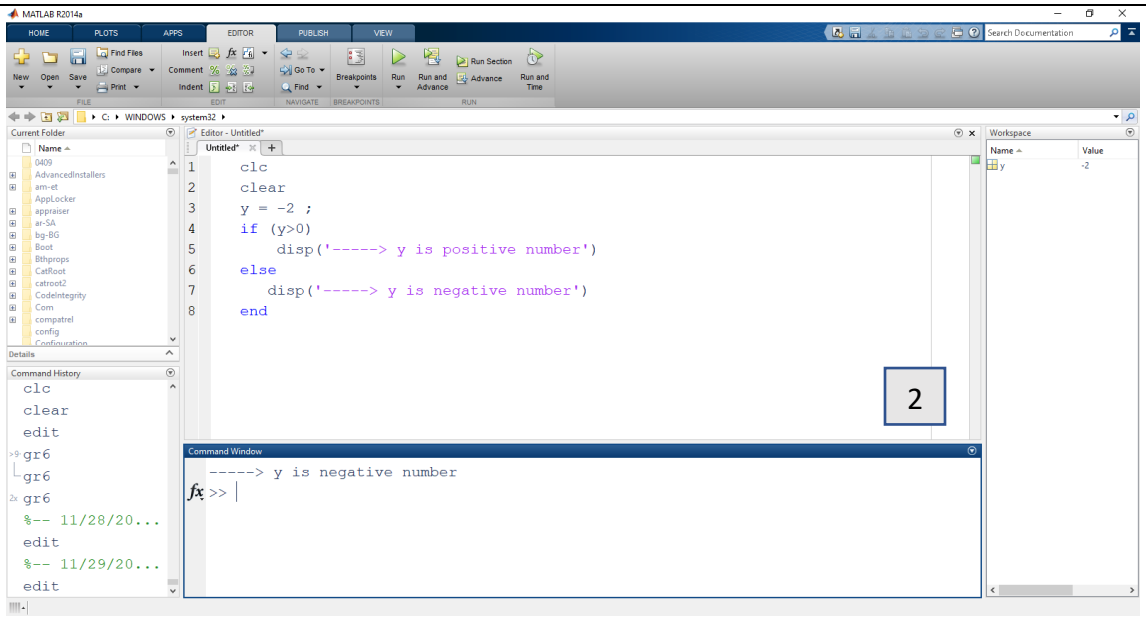


Fig 2. An example of the if-else statement *(two conditions)*

Example

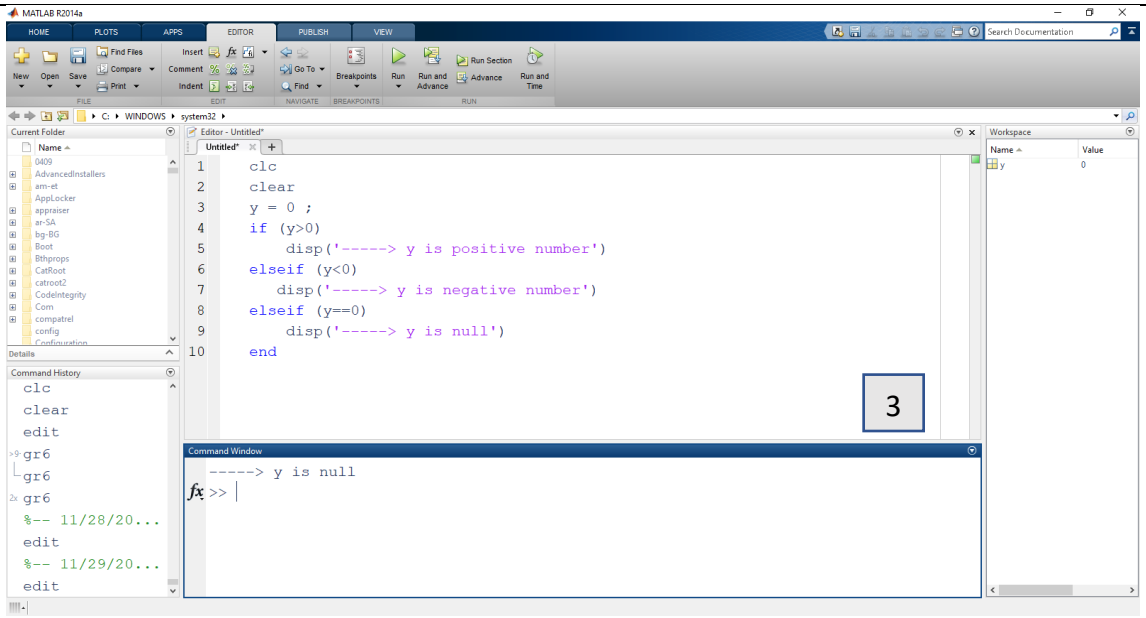


Fig 3. An example of the if-elseif statement *(many conditions)*

Important remarks

1-Always there is a « space » between *if* and the condition so don't forget't please.

2-In case two conditions after *else* there is no word in the same line.

3-In case we want to display a text in command window, this can be done using the command *disp('')*

4.List of References

Kattan, Peter Issa. Matlab for Beginners: A gentle approach. Petra books, 2008.

Etter, Delores M., David C. Kuncicky, and Douglas W. Hull. Introduction to MATLAB. Vol.4. Hoboken, NJ, USA: Prentice Hall, 2002.

Attaway, Stormy. Matlab: a practical introduction to programming and problem solving. Butterworth-Heinemann, 2013.

Driscoll, Tobin A. Learning Matlab. Society for Industrial and Applied Mathematics, 2009.

Butt, Rizwan. Introduction to numerical analysis using MATLAB. Laxmi Publications, Ltd.,2008.

Sigmon, Kermit. Matlab: aide-mémoire. Springer Science & Business Media, 1999.

Chapman, Stephen J. Essentials of MATLAB programming. Cengage Learning, 2016.