



Module 03

Maths?! I hate Maths!

Summary: Discover how generative AI can assist you with your favorite spreadsheet.

Version: 1.01

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Chapter I

Preamble

Charles Darwin, well known for his theory of evolution, was said to have a marked aversion to mathematics, preferring to observe nature directly rather than abstract its laws into equations. His theory, based on principles of natural selection and adaptation, raises fascinating questions today in the era of artificial intelligence. AI could indeed be seen as a kind of mutation, an extension of human evolution where our own creativity turns back on itself, extending our intellectual capacities beyond biological limits. Thus, could AI constitute a new milestone in evolution, a continuation or perhaps a parallel branch shaped by humans themselves?

This speculative paragraph was, of course, generated by an AI.

Chapter II

Introduction

During this training, you will have the opportunity to use widely available artificial intelligence tools that you can easily reuse at home.

To access some of these tools, you will need an account. If you prefer not to use your personal email address to this purpose, we recommend creating a dedicated Gmail account for the training.

Where possible, we will provide alternatives that do not require an account. However, please be aware that this option will limit access to certain features and result in a degraded experience.

Please note that the number of requests to these AI tools can be limited, whether or not you are using an account. Depending on the tool and the intensity of your usage, restrictions could occur. In such cases, exploring alternative tools will help you continue the exercises without interruptions.

During this training, you may encounter terms or concepts that are unfamiliar to you. We encourage you to seek clarification by discussing them with your peers, researching them online, or asking the AI tools directly to enhance your understanding.

Chapter III

General objectives

The goal of this training is to familiarize you with the use of artificial intelligence tools that you can integrate into your daily life, whether in a professional or personal setting.

You will learn to leverage these technologies to optimize your work and other personal uses.

A key point of this learning is peer knowledge sharing. We strongly encourage you to engage, ask questions, and share your discoveries with other participants throughout the training and during the peer evaluations.

Chapter IV

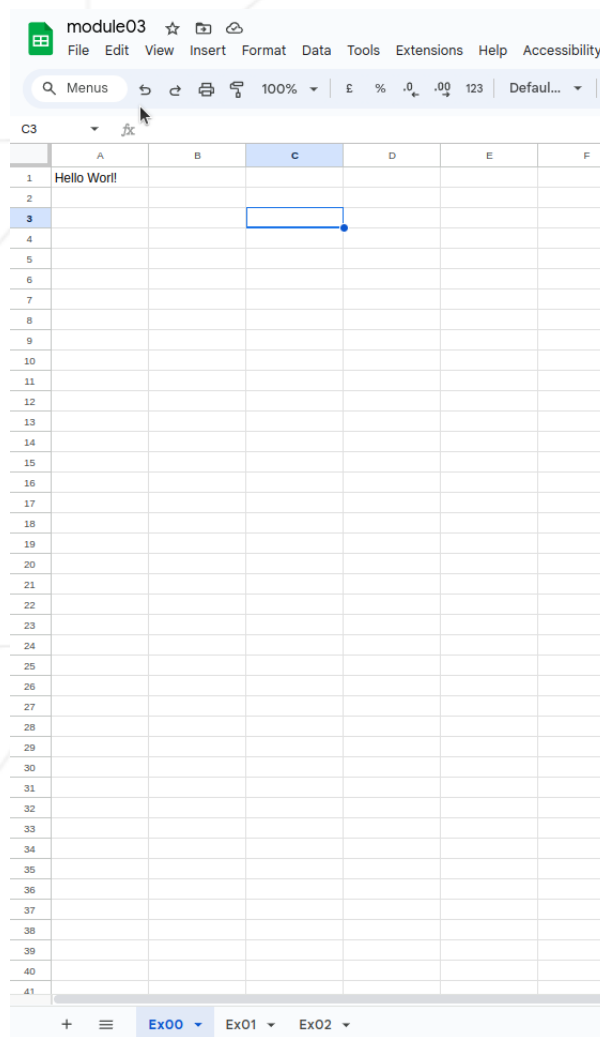
Exercise 00 - Submission file

For this module, you will use your preferred spreadsheet application. If you're unfamiliar with any, here are some suggestions:

- Microsoft Excel
- Google Sheets
- LibreOffice Calc
- Apple Numbers

Create a submission file named `module03` using your spreadsheet. Each exercise submission will be placed in a separate tab of this file.

For example, with Google Sheets:



Create a tab “Ex00” in your **module03** submission file and place the phrase “Hello World!” in cell A1, as shown in the example above.

Chapter V

Exercise 01 - Basic formula

Create a tab “Ex01” in your **module03** submission file.

In your spreadsheet, reproduce the following table:

	First Name	Last Name
1	Jean	Dupont
2	Jacques	Durant

Add a third column **Full Name** to your table.

Ask the AI for a formula that merges the two columns **First Name** and **Last Name** into the **Full Name** column, separating the two values with a comma.

The first row of your spreadsheet should look like this:

	First Name	Last Name	Full Name
1	Jean	Dupont	Jean, Dupont

At the end of your table, copy-paste the prompt(s) you used to request this formula from the AI.

Chapter VI

Exercise 02 - Unique code

Create a tab “Ex02” in your **module03** submission file.

In your spreadsheet, reproduce the following table:

	First Name	Last Name	Year of Birth
1	Jean	Dupont	1985
2	Jacques	Durant	1990

Add a fourth column **Identifier** to your table.

Ask the AI for a formula that generates a unique identifier in the **Identifier** column for each row by merging the first name and last name, while appending the year of birth, all in lowercase and separated by an underscore (_).

The first row of your spreadsheet should look like this:

	First Name	Last Name	Year of Birth	Identifier
1	Jean	Dupont	1985	jean_dupont_1985

At the end of your table, copy-paste the prompt(s) you used to request this formula from the AI.

Chapter VII

Exercise 03 - Conditional identifier

Create a tab “Ex03” in your **module03** submission file.

In your spreadsheet, reproduce the following table:

	First Name	Last Name	Year of Birth
1	Jean	Dupont	1985
2	Jacques	Durant	1990
3	Marie	Dupuis	1980

Add a fourth column **Identifier** to your table.

Ask the AI for a formula to generate a unique identifier in the **Identifier** column, which follows these rules:

- If the person was born before 1990, the identifier should start with “OLD_” followed by **First Name** and **Last Name**, all in **uppercase** and separated by a vertical bar (|).
- If the person was born in 1990 or after, the identifier should start with “NEW_” followed by **Last Name** and **First Name**, all in **lowercase** and separated by a hyphen (-).

Your table should look like this:

	First Name	Last Name	Year of Birth	Identifier
1	Jean	Dupont	1985	OLD_JEAN DUPONT
2	Jacques	Durant	1990	NEW_durant-jacques
3	Marie	Dupuis	1980	OLD_MARIE DUPUIS

At the end of your table, copy-paste the prompt(s) you used to request this formula from the AI.

Chapter VIII

Exercise 04 - Test data

Create a tab “Ex04” in your **module03** submission file.

In some companies, it is often necessary to generate dummy data to test applications or databases.

For this exercise, you will ask the AI to generate fictitious employee data for a company.

This data should include a total of 100 employees with the following information:

- Last Name
- First Name
- Date of Birth
- Position
- Date of Hire
- Annual Salary

The first two rows of your table should look like this (with your own values):

	First Name	Last Name	Date of Birth	Position	Date of Hire	Annual Salary
1	Jean	Dupont	1985-01-01	Developer	2010-01-01	50000
2	Jacques	Durant	1990-01-01	Project Manager	2015-01-01	70000

Insert the data generated by the AI into your spreadsheet.

At the end of your table, copy-paste the prompt(s) you used to request this data from the AI.

Chapter IX

Exercise 05 - Data processing

Create a tab “Ex05” in your **module03** submission file.

In your spreadsheet, copy-paste the data generated in Exercise 04.

Add a column **Age**, a column **Seniority**, and a column **Annual Seniority Bonus** to your table.

Ask the AI to provide you with the following formulas:

- Calculate the age of each employee in the **Age** column
- Calculate the seniority of each employee in the **Seniority** column
- Calculate the annual seniority bonus of each employee in the **Annual Seniority Bonus** column based on the employee’s seniority:
 - 0-5 years: 0%
 - 5-10 years: 5%
 - 10-15 years: 10%
 - 15-20 years: 15%

Your table should look like this (with your own values):

	A	B	C	D	E	F	G	H	I
1	Prénom	Nom	Date de naissance	Poste	Date d'embauche	Salaire annuel	Age	Ancienneté	Bonus d'ancienneté annuel
2	Danielle	Johnson	1982-06-19	Consultant	2013-01-31	57059	42	11	5705.9
3	Jeffrey	Doyle	2000-11-11	Chef de projet	2007-09-17	58743	23	17	8811.45
4	Brittany	Johnson	1970-02-15	Ingénieur	2012-03-11	59116	54	12	5911.6
5	Jesse	Guzman	2001-12-10	Manager	2011-07-09	61224	22	13	6122.4
6	Jennifer	Miles	1992-04-10	Technicien	2012-04-02	39046	32	12	3904.6

At the end of your table, copy-paste the prompt(s) you used to request these formulas from the AI.

Chapter X

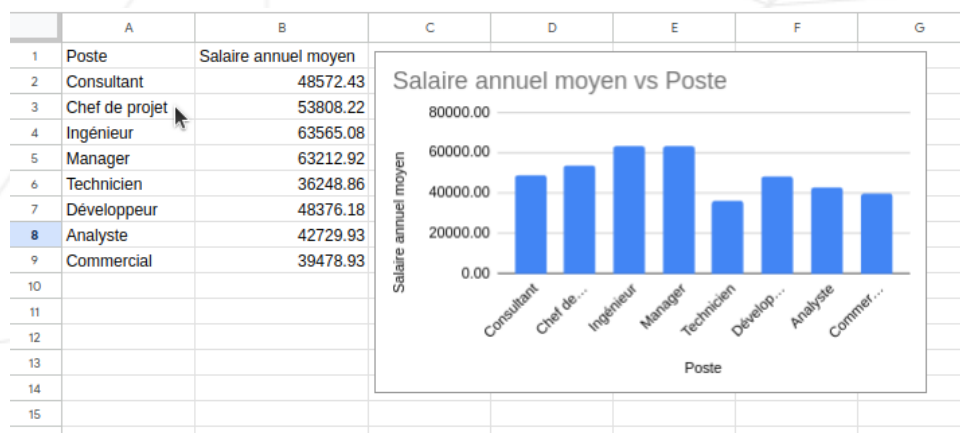
Exercise 06 - Generating charts

Create a tab “Ex06” in your **module03** submission file.

Ask the AI to explain how to extract data from the **Position** column and the **Annual Salary** column of your table in the “Ex05” tab in order to get the list of positions and the average annual salary by position in the company.

Then ask the AI to explain how to generate a bar chart of the average annual salary by position.

Your spreadsheet should look like this (with your own values):



At the end of your table, copy-paste the prompt(s) you used to request this information from the AI.

Chapter XI

Exercise 07 - From A to Z

Create a tab “Ex07” in your **module03** submission file.

For this exercise, you will ask the AI to provide realistic data to graphically model climate change for a period of 30 years (1990–2020).

This data should include the following variables:

- CO2
- Deforestation
- Global average temperature (in °C above the pre-industrial average)

Once this data is generated, ask the AI to provide formulas that will allow you to normalize this data for use in a chart.

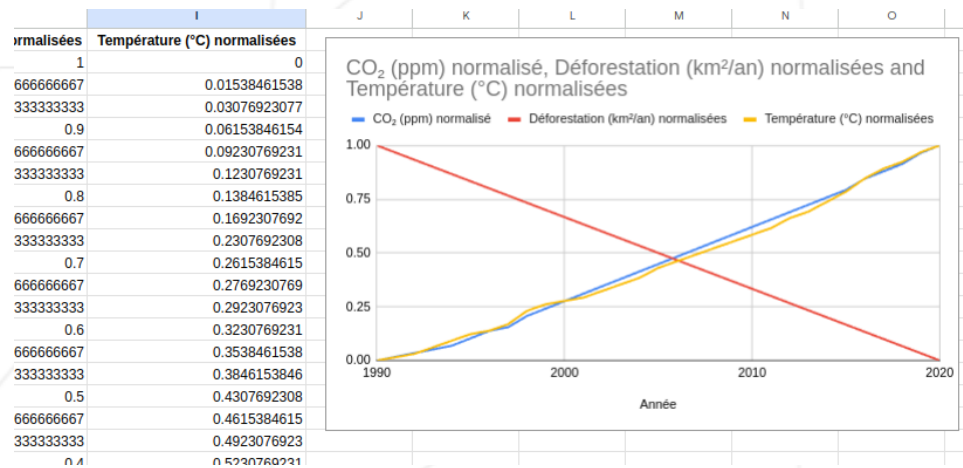
Using these formulas, create a second table to the right of the first with the normalized data.

Your tables should look like this (with your own values):

	A	B	C	D	E	F	G	H	I
1	Année	CO ₂ (ppm)	Déforestation (km ² /an)	Température (°C)		Année	CO ₂ (ppm) normalisé	Déforestation (km ² /an) normalisées	Température (°C) normalisées
2	1990	354	120.000	0.3		1990	0	1	0
3	1991	355	119.000	0.31		1991	0.01724137931	0.9666666667	0.01538461538
4	1992	356	118.000	0.32		1992	0.03448275862	0.9333333333	0.03076923077
5	1993	357	117.000	0.34		1993	0.05172413793	0.9	0.06153846154
6	1994	358	116.000	0.36		1994	0.06896551724	0.8666666667	0.09230769231
7	1995	360	115.000	0.38		1995	0.1034482759	0.8333333333	0.1230769231
8	1996	362	114.000	0.39		1996	0.1379310345	0.8	0.1384615385
9	1997	363	113.000	0.41		1997	0.1551724138	0.7666666667	0.1692307692

Then ask the AI to explain how to generate the graph from this normalized data.

You should be able to get a graph that looks like this:



At the end of your table, copy-paste the prompt(s) you used to request this information from the AI.