

Institut Universitaire des Sciences
Faculté des Sciences et Technologies
Td1 dans le cadre du cours de Mathématique pour l'informatique
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A l'attention de Monsieur Ismaël SAINT AMOUR
Mai 2025 # Installation et test de Jupyter Notebook

1. Introduction

Ce rapport documente le processus d'installation de Python et de Jupyter notebook ainsi que la vérification de son bon fonctionnement.

2. Installation de Python

L'installation de Python est une étape essentielle avant de pouvoir utiliser Jupyter Notebook. Voici les étapes suivies :

Téléchargement de Python

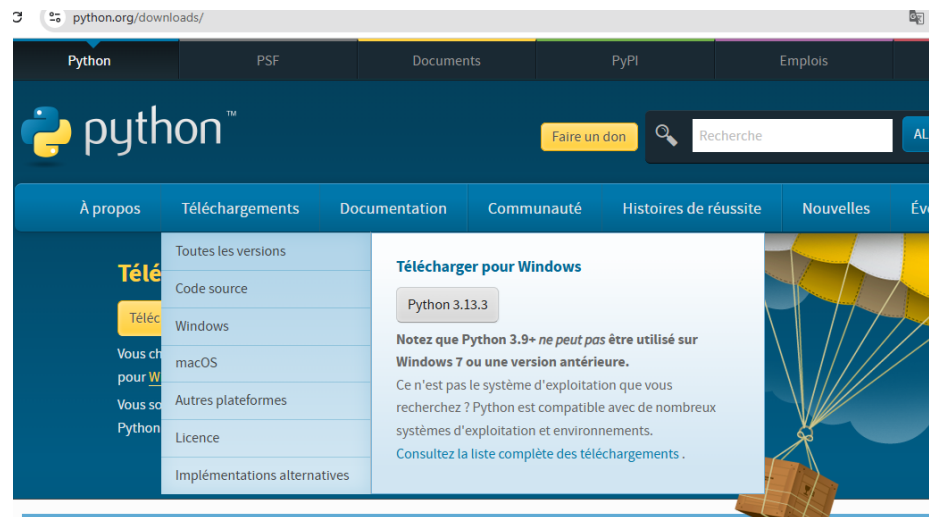


Figure 1: image(1)

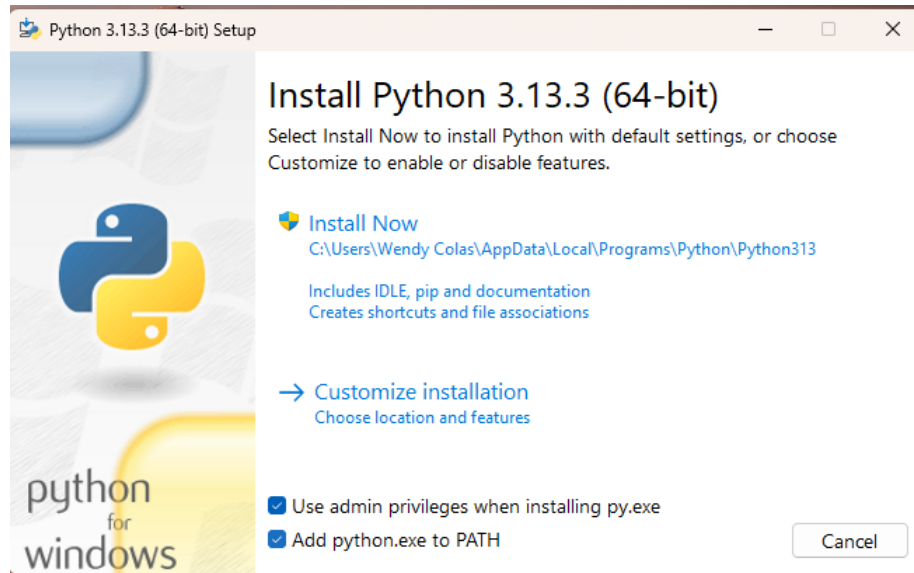


Figure 2: image(2)

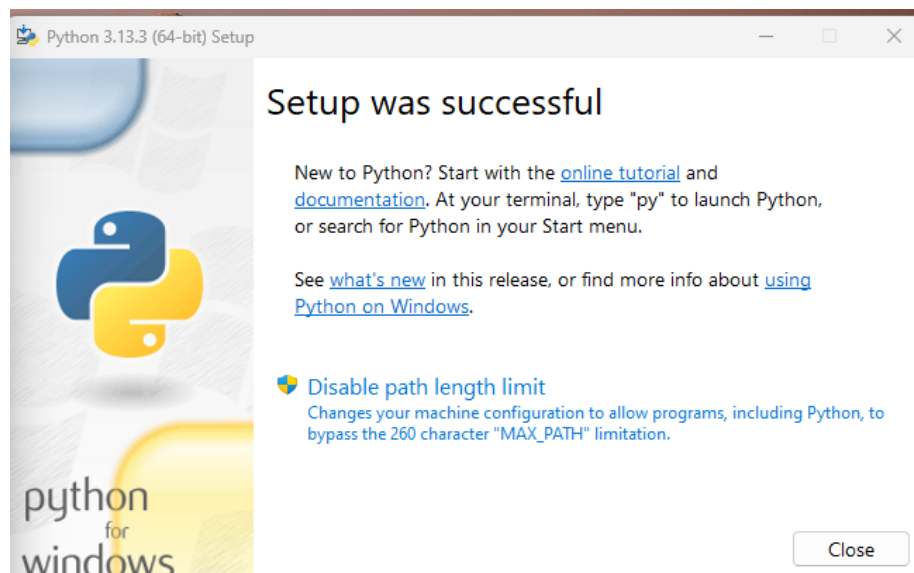


Figure 3: image(3)

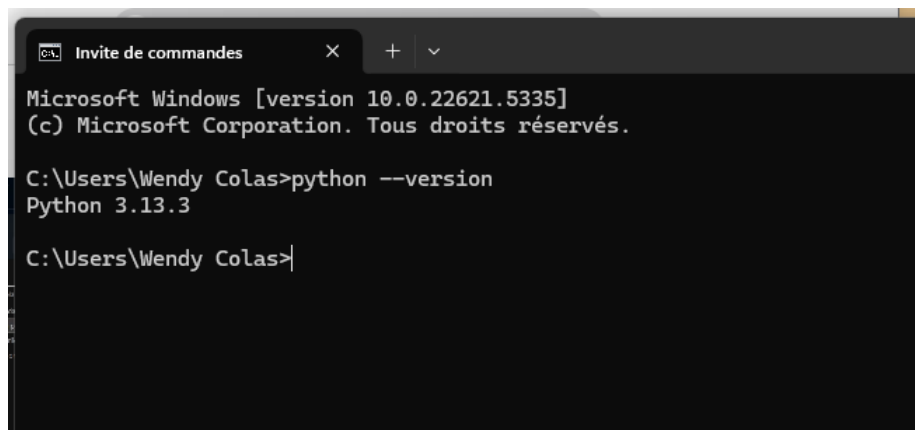
Installation de Python

Fin de l'installation

3. Vérification de l'installation de Python

Après l'installation, il est important de s'assurer que Python est bien installé sur le système.

Vérification via la ligne de commande



```
Microsoft Windows [version 10.0.22621.5335]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\Wendy Colas>python --version
Python 3.13.3

C:\Users\Wendy Colas>
```

Figure 4: image(4)

Lancement de IDLE (l'éditeur intégré)

Exécution d'un script simple

Test d'une opération mathématique

Autre test avec des expressions

Test d'affichage de texte

Vérification supplémentaire dans IDLE

Finalisation des tests

4. Conclusion

L'installation de Python s'est déroulée avec succès, et les tests de base ont confirmé son bon fonctionnement.

```
Invite de commandes
=0.16->ipython>=7.23.1->ipykernel>=6.5.0->jupyterlab<4.4,>=4.3.6->notebo
ok) (0.8.4)
Requirement already satisfied: wcwidth in c:\users\wendy colas\appdata\l
ocal\programs\python\python313\lib\site-packages (from prompt_toolkit<3.
1.0,>=3.0.41->ipython>=7.23.1->ipykernel>=6.5.0->jupyterlab<4.4,>=4.3.6-
>notebook) (0.2.13)
Requirement already satisfied: arrow>=0.15.0 in c:\users\wendy colas\app
data\local\programs\python\python313\lib\site-packages (from isoduration
->jonschema[format-nongpl]>=4.18.0->jupyter-events>=0.11.0->jupyter-ser
ver<3,>=2.4.0->notebook) (1.3.0)
Requirement already satisfied: executing>=1.2.0 in c:\users\wendy colas\
appdata\local\programs\python\python313\lib\site-packages (from stack_da
ta->ipython>=7.23.1->ipykernel>=6.5.0->jupyterlab<4.4,>=4.3.6->notebook)
(2.2.0)
Requirement already satisfied: asttokens>=2.1.0 in c:\users\wendy colas\
appdata\local\programs\python\python313\lib\site-packages (from stack_da
ta->ipython>=7.23.1->ipykernel>=6.5.0->jupyterlab<4.4,>=4.3.6->notebook)
(3.0.0)
Requirement already satisfied: pure-eval in c:\users\wendy colas\appdata
\local\programs\python\python313\lib\site-packages (from stack_data->ipy
thon>=7.23.1->ipykernel>=6.5.0->jupyterlab<4.4,>=4.3.6->notebook) (0.2.3
)
Requirement already satisfied: types-python-dateutil>=2.8.10 in c:\users
\wendy colas\appdata\local\programs\python\python313\lib\site-packages (
from arrow>=0.15.0->isoduration->jonschema[format-nongpl]>=4.18.0->jupy
ter-events>=0.11.0->jupyter-server<3,>=2.4.0->notebook) (2.9.0.20241206)
Downloading jupyter_core-5.8.1-py3-none-any.whl (28 kB)
Installing collected packages: jupyter-core
Successfully installed jupyter-core-5.8.1

[notice] A new release of pip is available: 25.0.1 -> 25.1.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\Wendy Colas>
```

Figure 5: image(5)

```
C:\Users\Wendy Colas>jupyter --version
Selected Jupyter core packages...
IPython      : 9.0.2
ipykernel    : 6.29.5
ipywidgets   : 8.1.5
jupyter_client : 8.6.3
jupyter_core : 5.8.1
jupyter_server : 2.15.0
jupyterlab   : 4.3.6
nbclient     : 0.10.2
nbconvert    : 7.16.6
nbformat     : 5.10.4
notebook     : 7.3.3
qtconsole    : not installed
traitlets    : 5.14.3

C:\Users\Wendy Colas>
```

Figure 6: image(6)

Quelques exemples de programmes et installation d'outils supplémentaires

Exécution d'un programme de conversion décimal → hexadécimal

Renommage du fichier Notebook

Script de conversion hexadécimal → décimal

Test du programme de conversion hexadécimal → décimal

4. Manipulation de fichiers CSV

L'objectif est de créer et manipuler des fichiers CSV dans Jupyter Notebook.

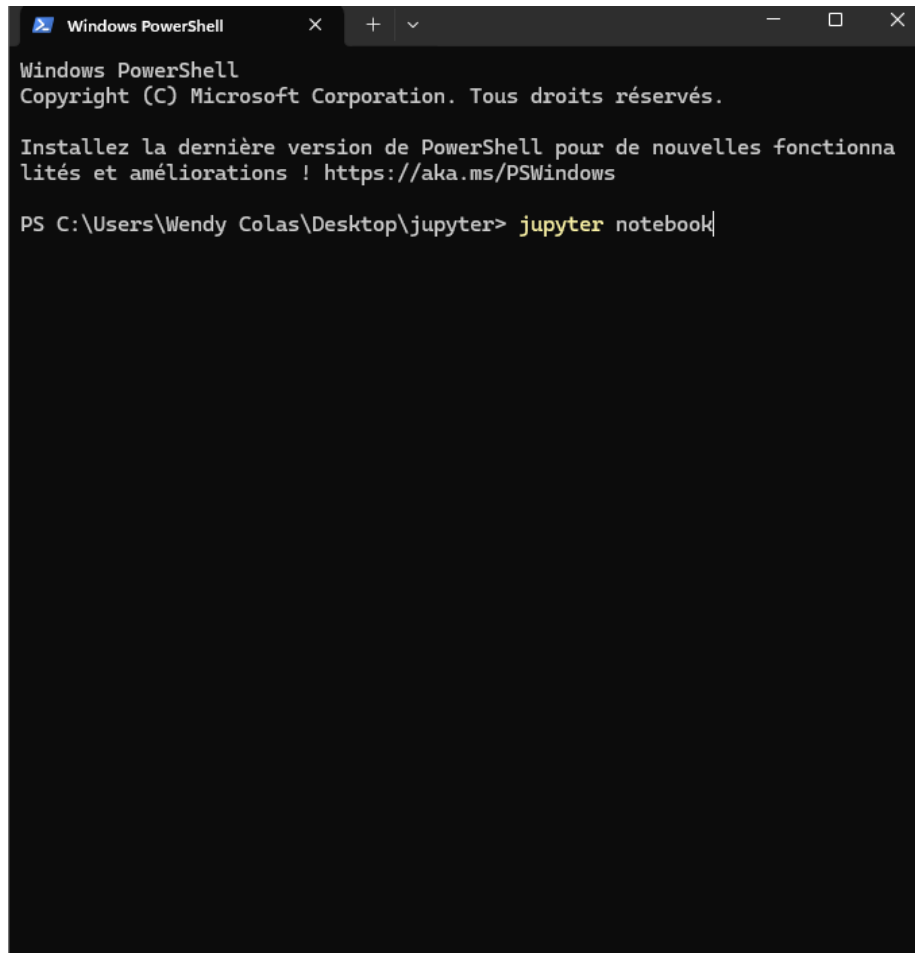
Renommage du notebook pour manipulation de CSV

Jupyter Notebook interface – gestion des fichiers

Génération d'un fichier CSV

5. Installation de bibliothèques supplémentaires

Installation de numpy et faker via pip install.



```
Windows PowerShell
Copyright (C) Microsoft Corporation. Tous droits réservés.

Installez la dernière version de PowerShell pour de nouvelles fonctionna
lités et améliorations ! https://aka.ms/PSWindows

PS C:\Users\Wendy Colas\Desktop\jupyter> jupyter notebook|
```

Figure 7: image(7)

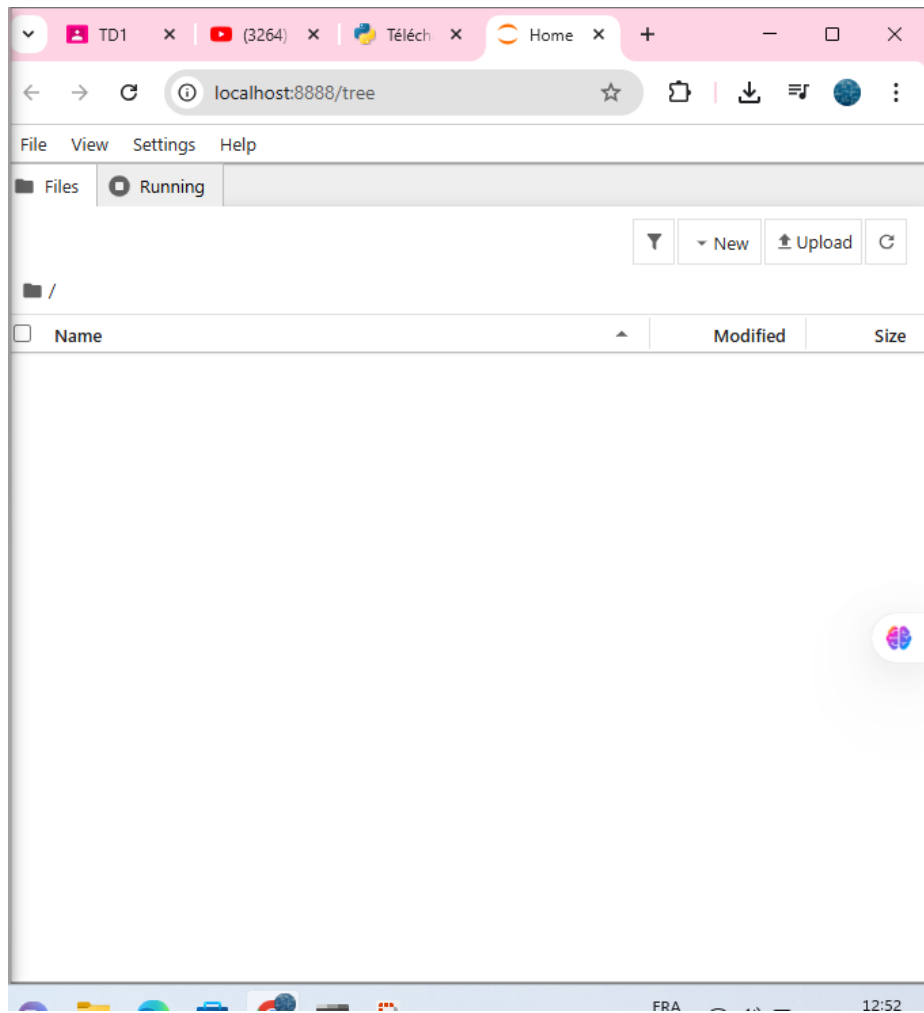


Figure 8: image(8)

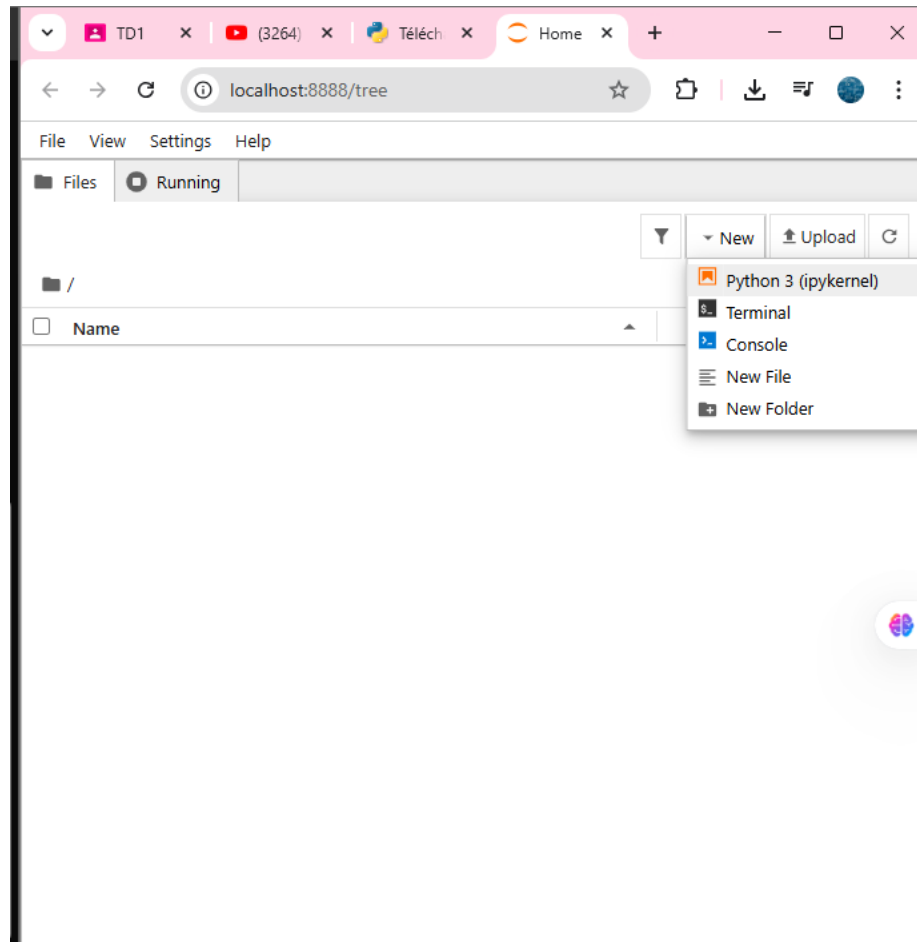


Figure 9: image(9)

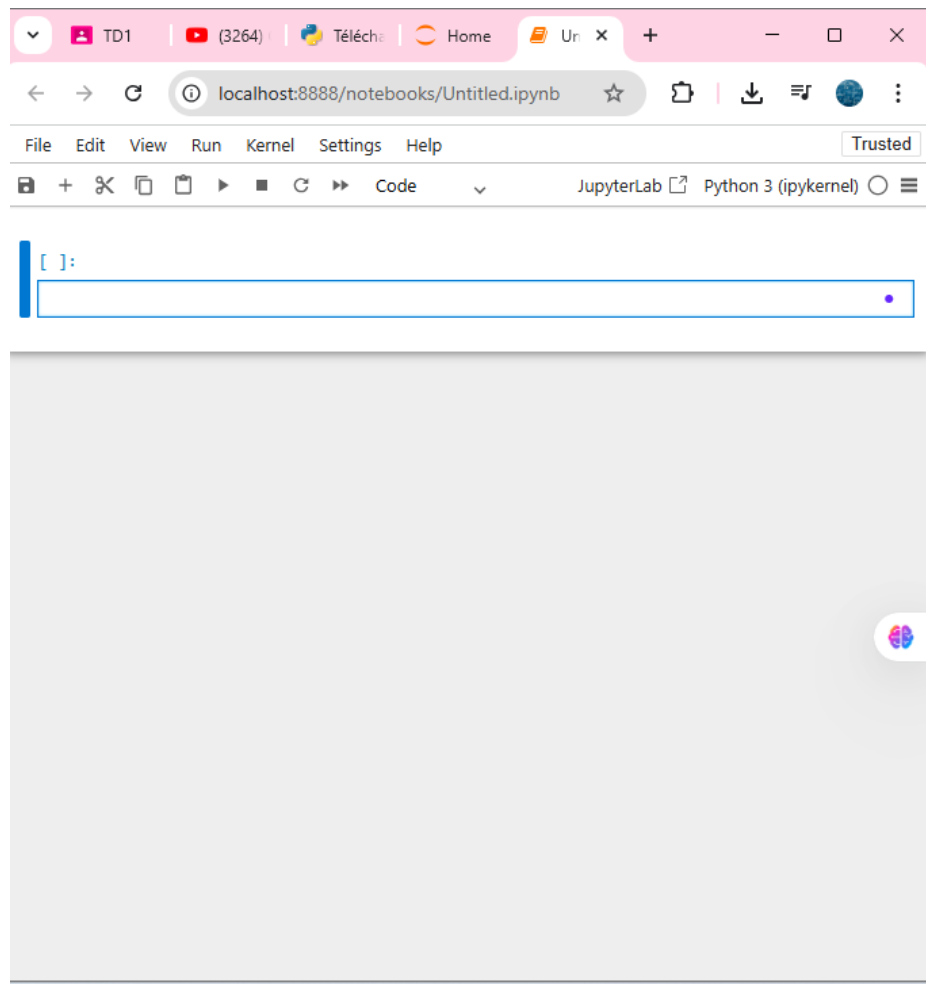


Figure 10: image(10)

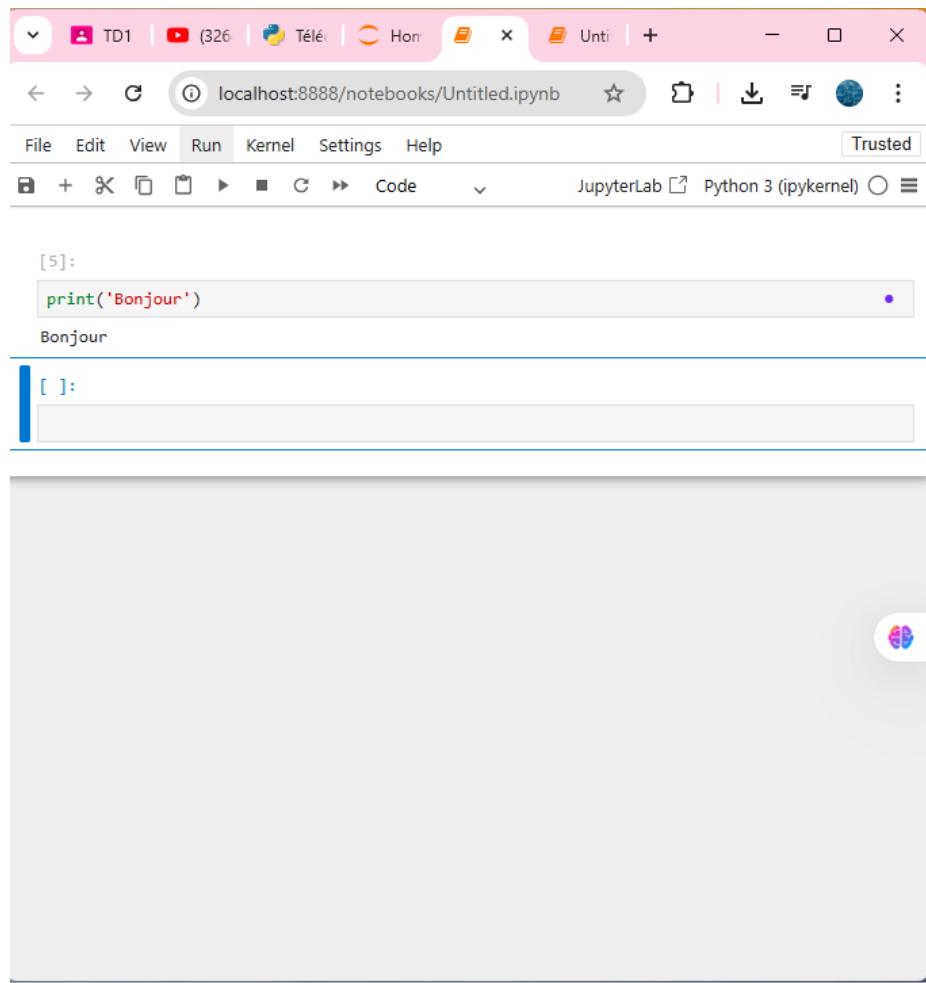


Figure 11: image(11)



Figure 12: image(12)

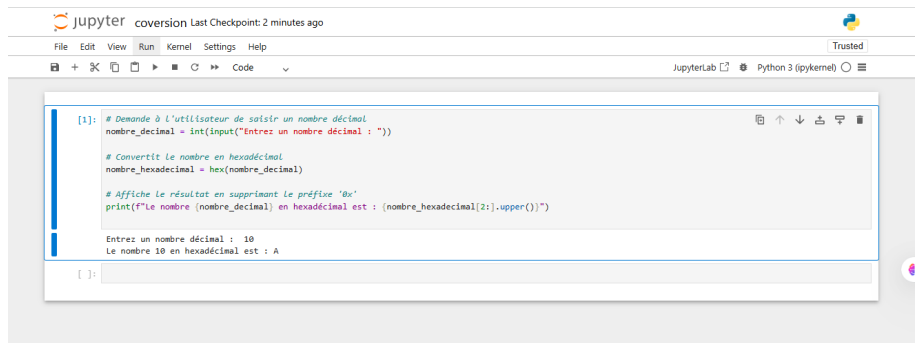


Figure 13: image(13)

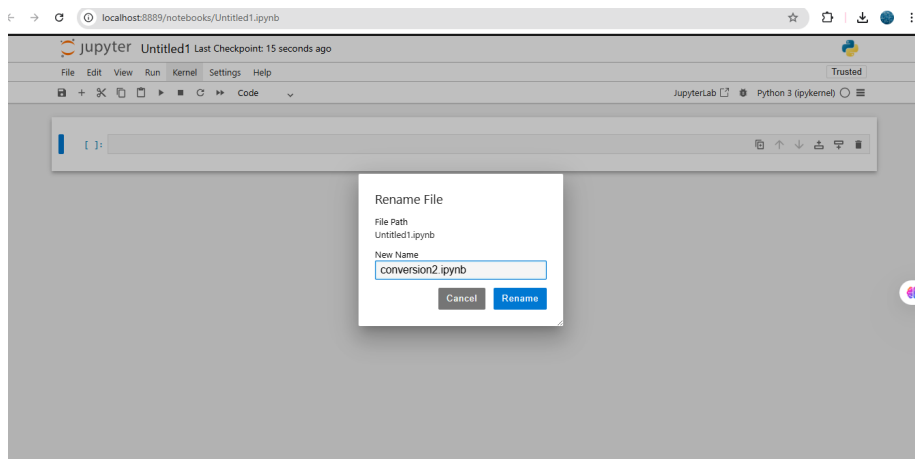


Figure 14: image(14)



Figure 15: image(15)

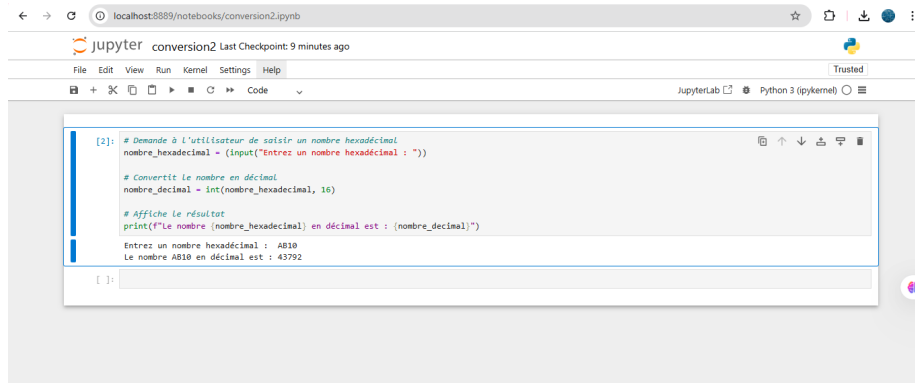


Figure 16: image(16)

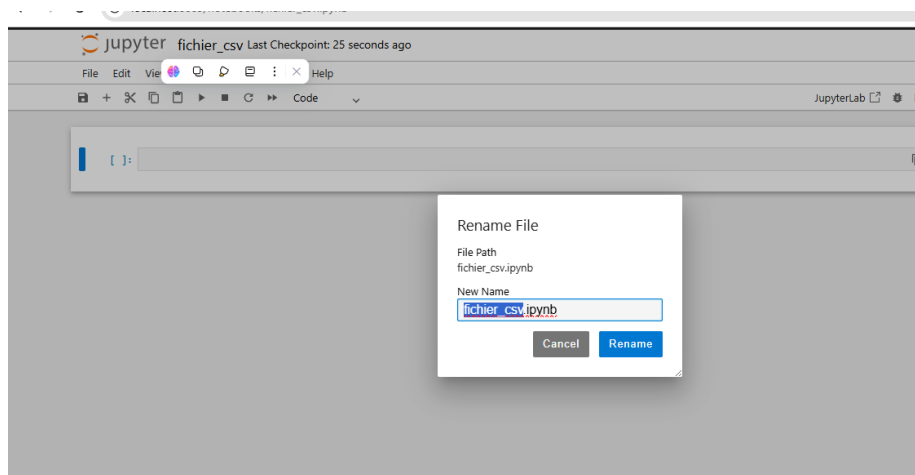
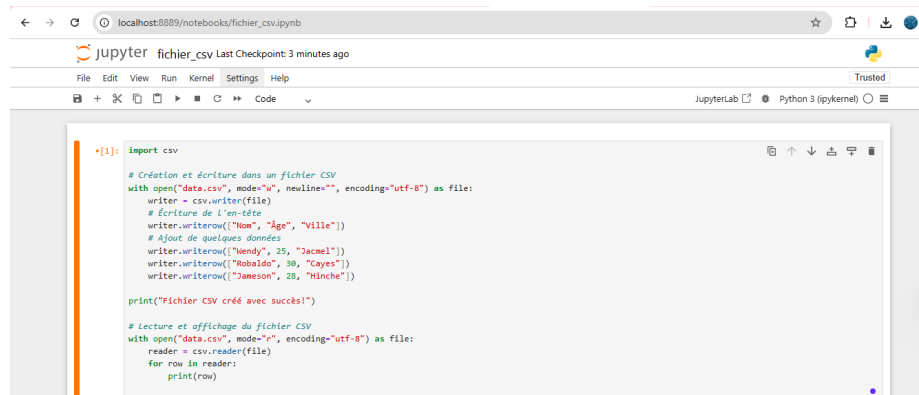


Figure 17: image(17)



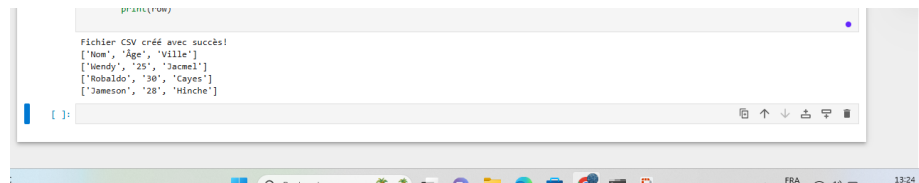
```
[1]: import csv

# Création et écriture dans un fichier CSV
with open("data.csv", mode="w", newline="", encoding="utf-8") as file:
    writer = csv.writer(file)
    # Écriture de l'en-tête
    writer.writerow(["Nom", "Âge", "Ville"])
    # Ajout de quelques données
    writer.writerow(["Wendy", 25, "Jacmel"])
    writer.writerow(["Robaldo", 30, "Cayes"])
    writer.writerow(["Jameson", 28, "Hinche"])

print("Fichier CSV créé avec succès!")

# Lecture et affichage du fichier CSV
with open("data.csv", mode="r", encoding="utf-8") as file:
    reader = csv.reader(file)
    for row in reader:
        print(row)
```

Figure 18: image(18)



```
[1]: print(row)

Fichier CSV créé avec succès!
['Nom', 'Âge', 'Ville']
['Wendy', '25', 'Jacmel']
['Robaldo', '30', 'Cayes']
['Jameson', '28', 'Hinche']
```

Figure 19: image(19)

Erreur lors de l'installation de numphy (correction en remplaçant par numpy)

6. Gestion et organisation des notebooks

Les notebooks sont renommés pour structurer les projets.

Renommage du notebook BD.ipynb

Interface Jupyter avec notebook BD.ipynb

Renommage du notebook graphes.ipynb

Interface de renommage du notebook graphes.ipynb

Interface Jupyter avec notebook graphes.ipynb

7. Exécution de scripts Python

Différents programmes sont testés dans les notebooks.

```

C:\Users\Wendy Colas>pip install pandas openpyxl
Collecting pandas
  Using cached pandas-2.2.3-cp313-cp313-win_amd64.whl.metadata (19 kB)
Collecting openpyxl
  Downloading openpyxl-3.1.5-py2.py3-none-any.whl.metadata (2.5 kB)
Requirement already satisfied: numpy>=1.26.0 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from pandas) (2.2.6)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from pandas) (2.9.0.post0)
Collecting pytz>=2020.1 (from pandas)
  Downloading pytz-2025.2-py2.py3-none-any.whl.metadata (22 kB)
Collecting tzdata>=2022.7 (from pandas)
  Downloading tzdata-2025.2-py2.py3-none-any.whl.metadata (1.4 kB)
Collecting et_xmlfile (from openpyxl)
  Downloading et_xmlfile-2.0.0-py3-none-any.whl.metadata (2.7 kB)
Requirement already satisfied: six>=1.5 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from python-dateutil>=2.8.2->pandas) (1.17.0)
Downloading pandas-2.2.3-cp313-cp313-win_amd64.whl (11.5 MB)
  11.5/11.5 MB 2.0 MB/s eta 0:00:00
Downloading openpyxl-3.1.5-py2.py3-none-any.whl (250 kB)
Downloading pytz-2025.2-py2.py3-none-any.whl (509 kB)
Downloading tzdata-2025.2-py2.py3-none-any.whl (347 kB)
Downloading et_xmlfile-2.0.0-py3-none-any.whl (18 kB)
Installing collected packages: pytz, tzdata, et_xmlfile, pandas, openpyxl
Successfully installed et_xmlfile-2.0.0 openpyxl-3.1.5 pandas-2.2.3 pytz-2025.2 tzdata-2025.2

```

Figure 20: image(20)


```
Invite de commandes
x Getting requirements to build wheel did not run successfully.
  exit code: 1
  -> See above for output.

note: This error originates from a subprocess, and is likely not a problem with pip.

C:\Users\Wendy Colas>pip numpy faker --version
ERROR: unknown command "numpy"

C:\Users\Wendy Colas>pip numpy --version
ERROR: unknown command "numpy"

C:\Users\Wendy Colas>pip install numpy
Requirement already satisfied: numpy in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (2.2.6)

[notice] A new release of pip is available: 25.0.1 -> 25.1.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\Wendy Colas>pip install faker
Collecting faker
  Downloading faker-37.3.0-py3-none-any.whl.metadata (15 kB)
  Requirement already satisfied: tzdata in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from faker) (2025.2)
  Downloading faker-37.3.0-py3-none-any.whl (1.9 MB)
  1.9/1.9 MB 3.3 MB/s eta 0:00:00
Installing collected packages: faker
Successfully installed faker-37.3.0

[notice] A new release of pip is available: 25.0.1 -> 25.1.1
[notice] To update, run: python.exe -m pip install --upgrade pip
```

Figure 22: image(22)

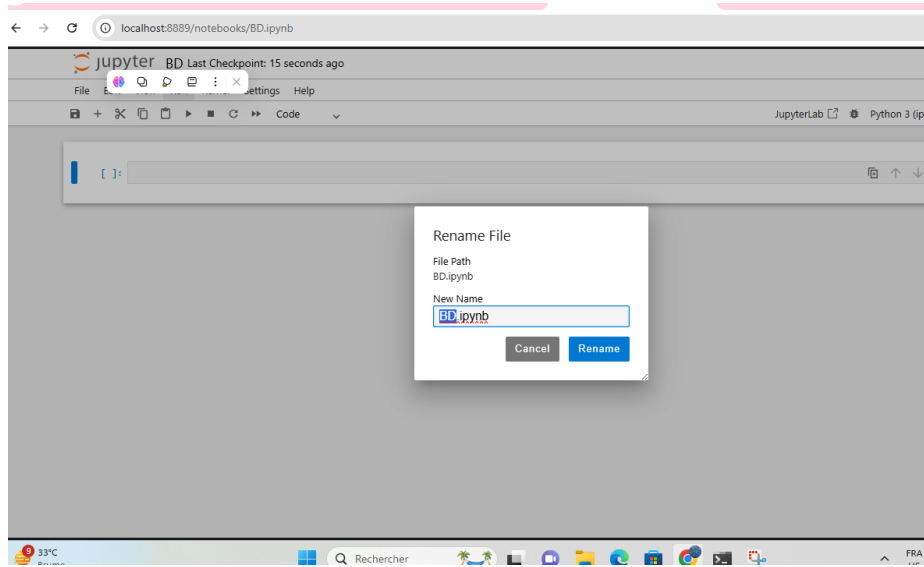


Figure 23: image(23)

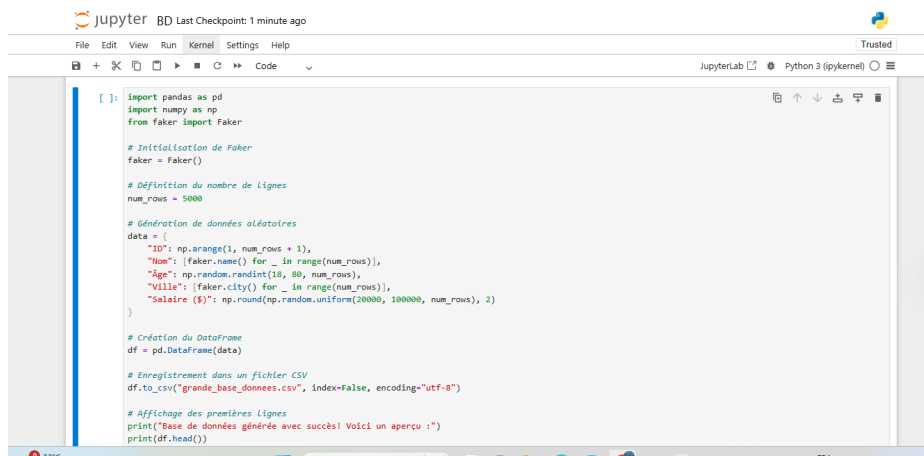
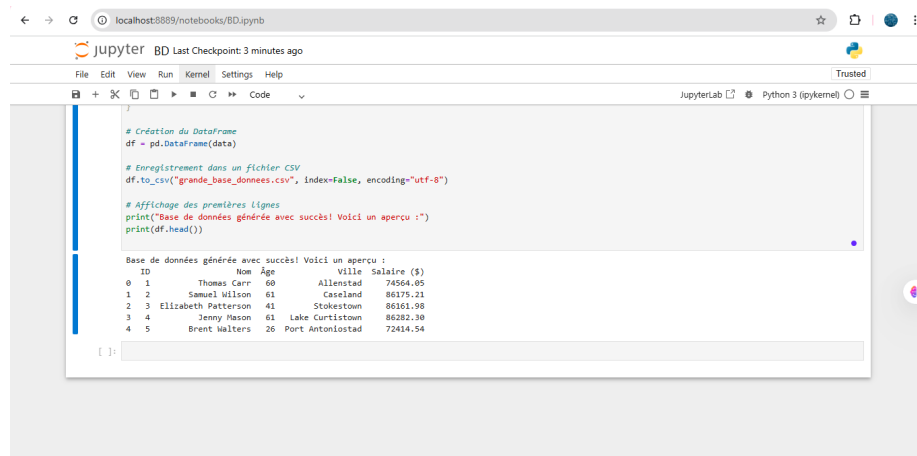


Figure 24: image(24)



```
# Création du DataFrame
df = pd.DataFrame(data)

# Enregistrement dans un fichier CSV
df.to_csv("grande_base_donnees.csv", index=False, encoding="utf-8")

# Affichage des premières lignes
print("Base de données générée avec succès! Voici un aperçu :")
print(df.head())
```

Base de données générée avec succès! Voici un aperçu :

ID	Nom	Âge	Ville	Salaires (\$)	
0	1	Thomas Carr	60	Allenstad	74564.05
1	2	Samuel Wilson	61	Caseland	86175.21
2	3	Elizabeth Patterson	41	Stokestown	86161.98
3	4	Jenny Hason	61	Lake Curtistown	86282.30
4	5	Brent Walters	26	Port Antonlostad	72414.54

Figure 25: image(25)

Chargement de données CSV

Traitement et affichage de fichiers CSV

Génération de fichiers CSV

8. Installation et gestion des bibliothèques Python

Gestion des modules utilisés pour le projet.

Installation et test des bibliothèques

Correction d'erreur et exécution du programme

Confirmation de l'installation et exécution finale

Organisation finale des notebooks dans Jupyter

9. Conclusion

Ce rapport retrace les étapes d'installation des outils nécessaires, ainsi que les tests et manipulations effectués dans Jupyter Notebook. La gestion des fichiers CSV et l'utilisation de bibliothèques Python complètent cette exploration.

```
Invite de commandes

C:\Users\Wendy Colas>pip install matplotlib
Collecting matplotlib
  Downloading matplotlib-3.10.3-cp313-cp313-win_amd64.whl.metadata (11 kB)
Collecting contourpy>=1.0.1 (from matplotlib)
  Downloading contourpy-1.3.2-cp313-cp313-win_amd64.whl.metadata (5.5 kB)
Collecting cycler>=0.10 (from matplotlib)
  Downloading cycler-0.12.1-py3-none-any.whl.metadata (3.8 kB)
Collecting fonttools>=4.22.0 (from matplotlib)
  Downloading fonttools-4.58.1-cp313-cp313-win_amd64.whl.metadata (108 kB)
Collecting kiwisolver>=1.3.1 (from matplotlib)
  Downloading kiwisolver-1.4.8-cp313-cp313-win_amd64.whl.metadata (6.3 kB)
Requirement already satisfied: numpy>=1.23 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from matplotlib) (2.2.6)
Requirement already satisfied: packaging>=20.0 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from matplotlib) (24.2)
Collecting pillow>=8 (from matplotlib)
  Downloading pillow-11.2.1-cp313-cp313-win_amd64.whl.metadata (9.1 kB)
Collecting pyparsing>=2.3.1 (from matplotlib)
  Downloading pyparsing-3.2.3-py3-none-any.whl.metadata (5.0 kB)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from matplotlib) (2.9.0.post0)
Requirement already satisfied: six>=1.5 in c:\users\wendy colas\appdata\local\programs\python\python313\lib\site-packages (from python-dateutil>=2.7->matplotlib) (1.17.0)
Downloading matplotlib-3.10.3-cp313-cp313-win_amd64.whl (8.1 MB)
8.1/8.1 MB 3.3 MB/s eta 0:00:00
```

Figure 26: image(26)

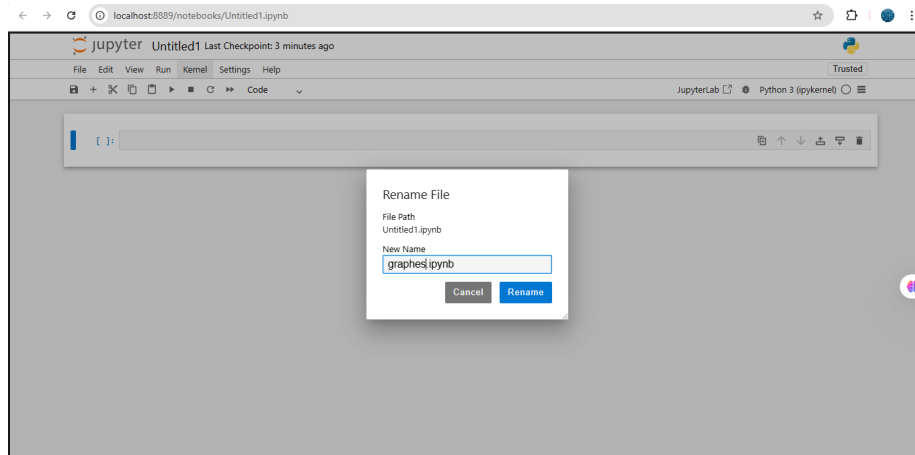


Figure 27: image(27)

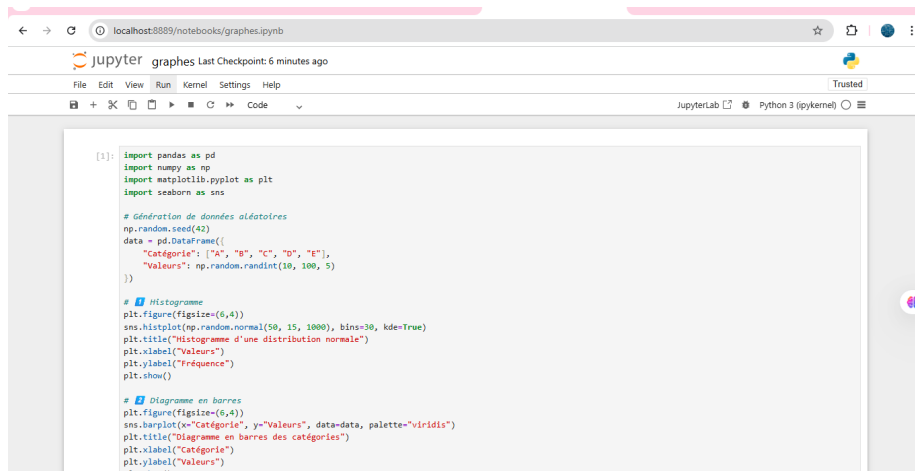


Figure 28: image(28)

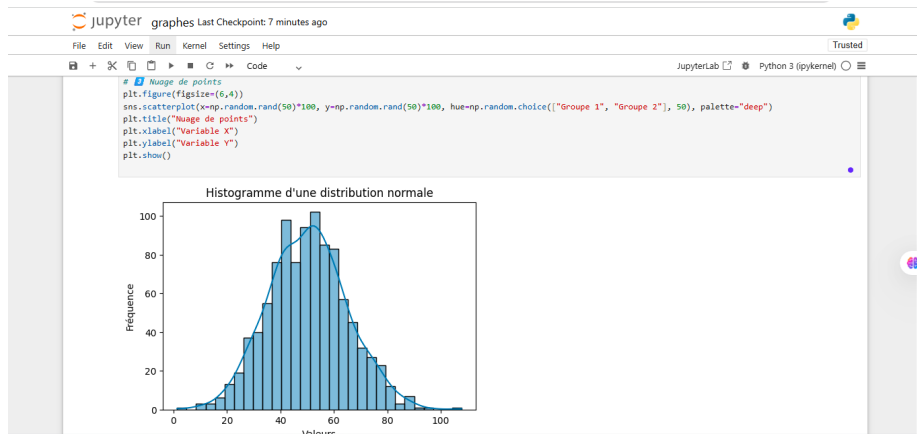


Figure 29: image(29)



Figure 30: image(30)

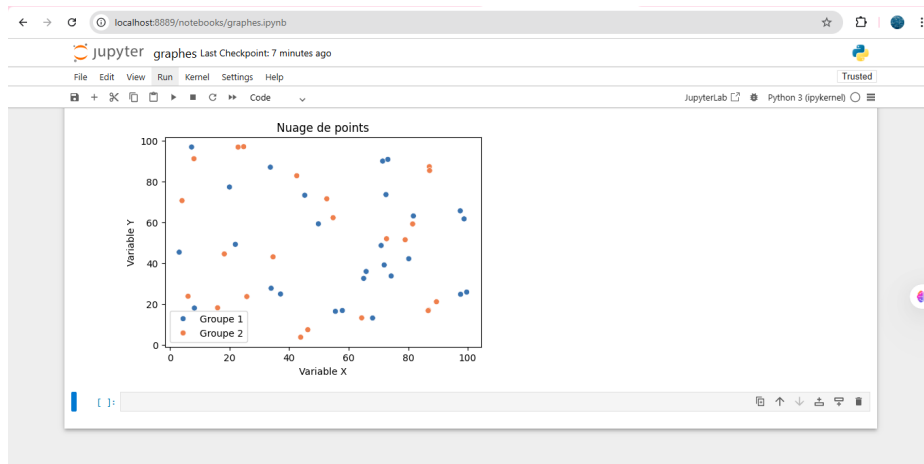


Figure 31: image(31)

The figure shows the "Files" tab of a JupyterLab interface. It displays a list of files and folders in the current directory. The table has columns for Name, Modified, and File Size. The files listed are:

Name	Modified	File Size
BD.ipynb	10 minutes ago	2.4 KB
conversion2.ipynb	49 minutes ago	1.4 KB
conversion.ipynb	1 hour ago	1.4 KB
fichier_csv.ipynb	37 minutes ago	1.8 KB
graphes.ipynb	17 seconds ago	85.3 KB
Untitled.ipynb	1 hour ago	913 B
data.csv	38 minutes ago	70 B
grande_base_donnees.csv	12 minutes ago	219.4 KB

Figure 32: image(32)