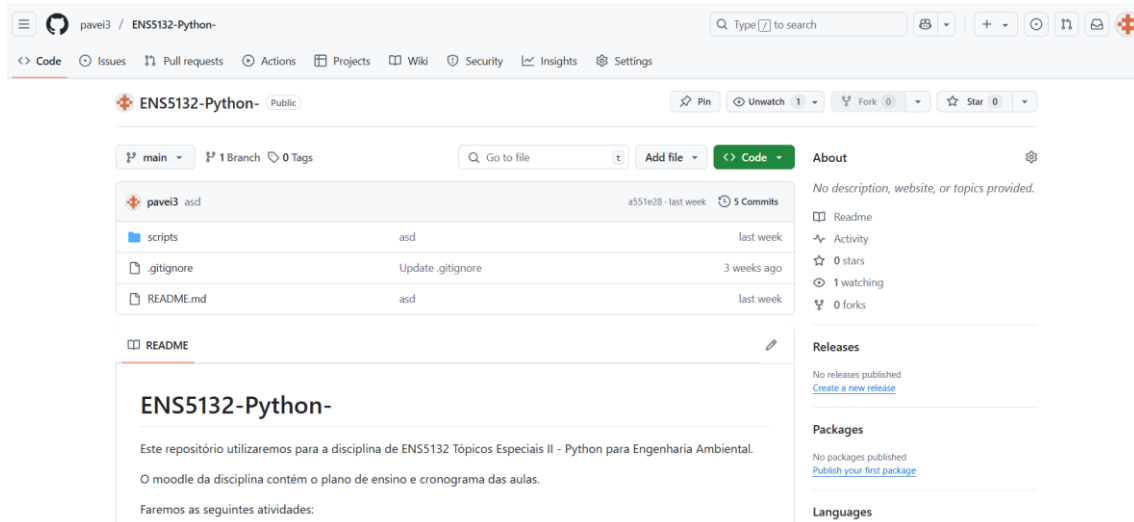


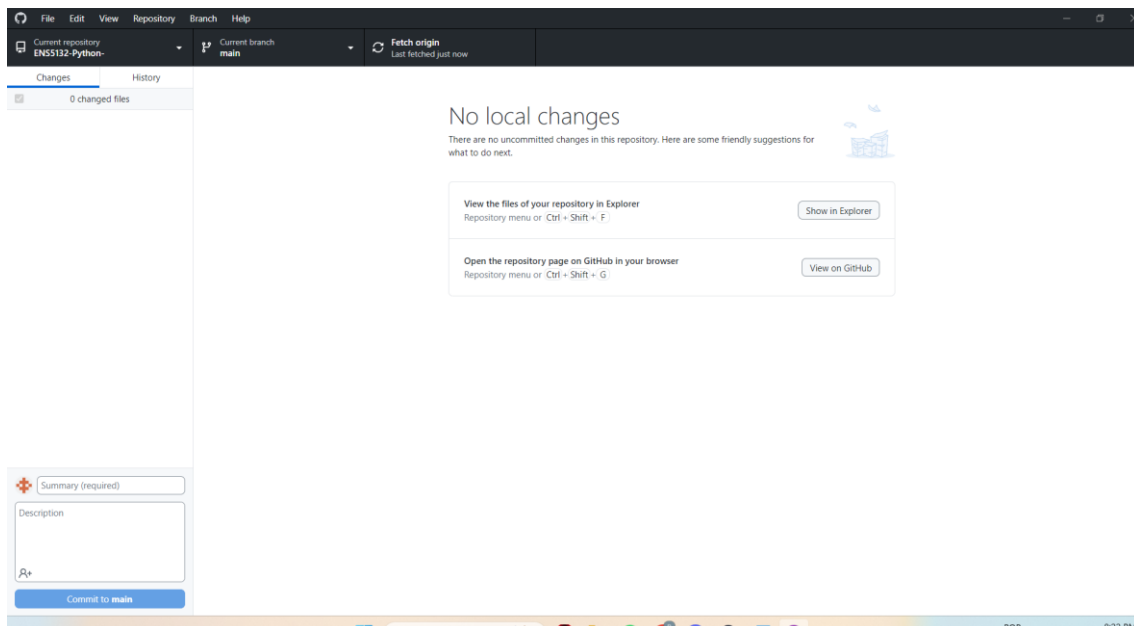
Aluno: Bruno Pavei Gabriel

Matrícula: 20204187

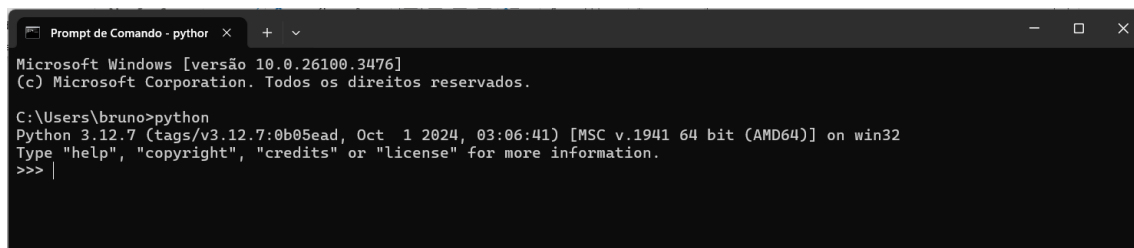
- Criação do repositório no gitHub com o nome ENS5132 (incluir README e .gitignore no template Python):



- Instalação do GitHub Desktop:



- Instalação do Python (digite o comando python --version no terminal):



- Instalação dos pacotes numpy, pandas, matplotlib e spyder (utilize o pip install):

```
Prompt de Comando - pip in: X + v
Microsoft Windows [versão 10.0.26100.3476]
(c) Microsoft Corporation. Todos os direitos reservados.

C:\Users\bruno>python
Python 3.12.7 (tags/v3.12.7:0b05ead, Oct 1 2024, 03:06:41) [MSC v.1941 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> cd "C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-"
File "<stdin>", line 1
  cd "C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-"
SyntaxError: (unicode error) 'unicodeescape' codec can't decode bytes in position 2-3: truncated \UXXXXXX escape
>>> exit()

C:\Users\bruno>cd "C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-"

C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python->cd venv

C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-venv>cd Scripts

C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-venv\Scripts>activate

(venv) C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-venv\Scripts>pip install n
umpy pandas matplotlib spyder
Requirement already satisfied: numpy in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-p
ython-venv\lib\site-packages (2.2.4)
Requirement already satisfied: pandas in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-
python-venv\lib\site-packages (2.2.3)
Requirement already satisfied: matplotlib in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5
132-python-venv\lib\site-packages (3.10.1)
Requirement already satisfied: spyder in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-
python-venv\lib\site-packages (from rich>cookiecutter>=1.6.0->spyder) (0.8.0)
Requirement already satisfied: executing>=1.2.0 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 1
0\ens5132-python-venv\lib\site-packages (from stack_data->ipython!=8.17.1,<9.0.0,>=8.13.0->spyder) (2.2.0)
Requirement already satisfied: asttokens>=2.1.0 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 1
0\ens5132-python-venv\lib\site-packages (from stack_data->ipython!=8.17.1,<9.0.0,>=8.13.0->spyder) (3.0.0)
Requirement already satisfied: pure-eval in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens51
32-python-venv\lib\site-packages (from stack_data->ipython!=8.17.1,<9.0.0,>=8.13.0->spyder) (0.2.3)
Requirement already satisfied: pycparser in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens51
32-python-venv\lib\site-packages (from cffi>=1.12->cryptography>=39.0->asyncssh<3.0.0,>=2.14.0->spyder) (2.22)
Requirement already satisfied: mdurl<=0.1 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5
132-python-venv\lib\site-packages (from markdown-it-py>=2.2.0->rich>cookiecutter>=1.6.0->spyder) (0.1.2)

[notice] A new release of pip is available: 24.2 -> 25.0.1
[notice] To update, run: python.exe -m pip install --upgrade pip

(venv) C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-venv\Scripts>
```

- Abra o Spyder:

```
Spyder (Python 3.12)
File Edit Search Source Run Debug Consoles Projects Tools View Help

C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-Scripts\aula03.py

61 #criando
62 #criar a
63 #criar a
64 #criar a
65 #criar a
66 #criar a
67 #criar a
68 #criar a
69 #criar a
70 #criar a
71 #criar a
72 #criar a
73 #criar a
74 #criar a
75 #criar a
76 #criar a
77 #criar a
78 #criar a
79 #criar a
80 #criar a
81 #criar a
82 #criar a
83 #criar a
84 #criar a
85 #criar a
86 #criar a
87 #criar a
88 #criar a
89 #criar a
90 #criar a
91 #criar a
92 #criar a
93 #criar a
94 #criar a
95 #criar a
96 #criar a
97 #criar a
98 #criar a

Prompt de Comando
Requirement already satisfied: pytoolconfig>=1.2.2 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from pytoolconfig[global]>=1.2.2->rope>=1.11.0->python-lsp-server[all]<1.13.0,>=1.12.0->spyder) (1.3.1)
Requirement already satisfied: types-python-dateutil>=2.8.10 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from arrow>cookiecutter>=1.6.0->spyder) (2.9.0.20241206)
Requirement already satisfied: soupsieve>1.2 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from beautifulsoup>nbconvert=>0->spyder) (2.6)
Requirement already satisfied: wrapt>=1.10 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from Deprecated>pygithub>=2.3.0->spyder) (1.17.2)
Requirement already satisfied: more-itertools in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from jaraco.classes>keyring>=17.0.0->spyder) (10.6.0)
Requirement already satisfied: markdown-it-py>=2.2.0 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from rich>cookiecutter>=1.6.0->spyder) (3.0.0)
Requirement already satisfied: executing>=1.2.0 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from stack_data->ipython!=8.17.1,<9.0.0,>=8.13.0->spyder) (2.2.0)
Requirement already satisfied: asttokens>=2.1.0 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from stack_data->ipython!=8.17.1,<9.0.0,>=8.13.0->spyder) (3.0.0)
Requirement already satisfied: pure-eval in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from stack_data->ipython!=8.17.1,<9.0.0,>=8.13.0->spyder) (0.2.3)
Requirement already satisfied: pycparser in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from cffi>=1.12->cryptography>=39.0->asyncssh<3.0.0,>=2.14.0->spyder) (2.22)
Requirement already satisfied: mdurl<=0.1 in c:\users\bruno\onedrive\documentos\documents\ufsc arquivos\semestre 10\ens5132-python-venv\lib\site-packages (from markdown-it-py>=2.2.0->rich>cookiecutter>=1.6.0->spyder) (0.1.2)

[notice] A new release of pip is available: 24.2 -> 25.0.1
[notice] To update, run: python.exe -m pip install --upgrade pip

(venv) C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-venv\Scripts>spyder

(venv) C:\Users\bruno\OneDrive\Documentos\UFSC arquivos\Semestre 10\ENS5132-Python-venv\Scripts>
```

- Execute o script criado na aula:

Visual Studio Code interface showing a Python script and its output.

Python Script (Aula03.py):

```
90 xReshape=x.reshape(3,5)
91 print(xReshape.transpose())
92 #criando uma matriz de números aleatórios
93 matRand=np.random.rand(10,100,100)
94
95 #recortando a matriz
96 matRandSlice=matRand[0,:,:]
97
98 #dimensão da matriz
99 print(matRand.ndim)
100
101 #shape da matriz
102 print(matRand.shape)
103
104 #número de elementos
105 print(matRand.size)
106
107 #multiplicação escalar
108 print(matRand*3.9)
109
110 #abrir dados de um arquivo de texto
111 dataSample=np.loadtxt(r"C:\Users\bruno\OneDrive\Documents\Documents\UFSC arquivos\Semestre
112
113 #abrir arquivo .csv
114 dataSample2=np.loadtxt(r"C:\Users\bruno\OneDrive\Documents\Documents\UFSC arquivos\Semestre
115
116 ##X
117 #criando uma matriz de números aleatórios 100x100
118 matriz2D100=np.random.rand(100,100)
119 print(matriz2D100)
120
121 matriz2D100Slice=matriz2D100[0,:]
122 print('Primeira linha:')
123 print(matriz2D100Slice)
124 print('Valor da última linha e coluna:')
125 print(matriz2D100[99,99])
126
```

Output (matriz2D100 - NumPy object array):

	93	94	95	96	97	98	99
89	0.2392106	0.420082	0.182899	0.109480	0.400649	0.200071	0.426224
90	0.756812	0.558963	0.123283	0.0615715	0.153813	0.202345	0.447562
91	0.798454	0.713307	0.800555	0.366461	0.104067	0.122897	0.490285
92	0.54086	0.66579	0.748195	0.606193	0.999947	0.59384	0.518132
93	0.482988	0.132598	0.460427	0.759249	0.841407	0.356823	0.732032
94	0.626546	0.933383	0.290887	0.577047	0.616316	0.553831	0.85027
95	0.545558	0.437925	0.372023	0.986674	0.641515	0.645294	0.994948
96	0.248599	0.812025	0.126399	0.360383	0.901561	0.707087	0.685543
97	0.139285	0.912201	0.0192484	0.724201	0.896363	0.848772	0.769005
98	0.039781	0.600578	0.9998	0.887302	0.129136	0.0756748	0.676892
99	0.992483	0.8100471	0.730251	0.566373	0.80931091	0.875895	0.856113

Save and Close Close

0.22917497 0.04207687 0.63567865 0.32353122 0.76412535 0.70209296
0.18024786 0.15224304 0.24102473 0.28327267 0.47975875 0.63683054
0.03264899 0.05531193 0.27871064 0.14455899 0.06068854 0.85614456
0.47582563 0.44920618 0.19591678 0.55174187 0.04847848 0.36556871
0.98300043 0.50941111 0.83085386 0.02027131 0.53633551 0.70402123
0.5097163 0.5127156 0.69577257 0.45252384 0.60744465 0.36053016
0.78125997 0.17592361 0.48085446 0.50847051 0.79390523 0.41285764
0.86936735 0.02901909 0.75305453 0.02219054 0.88389491 0.38810475
0.87761461 0.11253408 0.23480942 0.90383934 0.758778 0.81525031
0.09163884 0.56021096 0.12720813 0.94839246 0.42169163 0.09130511
0.92658116 0.49545481 0.16877407 0.89832501 0.60673036 0.51359587
0.50158005 0.57371773 0.38292517 0.7866449 0.1379051 0.833185
0.7885851 0.08878266 0.07887246 0.95283559]
Valor da última linha e coluna:
0.856612634043856

In [10]: