Primero instalamos la biblioteca:

```
pip install ipywidgets
```

```
Try the new cross-platform PowerShell https://aka.ms/pscore6
PS C:\Users\oscar\OneDrive\Escritorio\Katas> pip install ipywidgets
Requirement already satisfied: ipywidgets in d:\anaconda3\lib\site-packages (7.6.5)
Requirement already satisfied: widgetsnbextension~=3.5.0 in d:\anaconda3\lib\site-packages (from ipywidgets) (3.5.1)
Requirement already satisfied: traitlets>=4.3.1 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipywidgets) (5.0.5)
Requirement already satisfied: ipykernel>=4.5.1 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipywidgets) (5.5.0)
Requirement already satisfied: jupyterlab-widgets>=1.0.0 in d:\anaconda3\lib\site-packages (from ipywidgets) (1.0.0)
Requirement already satisfied: ipython>=4.0.0 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipywidgets) (7.21.0)
Requirement already satisfied: ipython-genutils~=0.2.0 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipywidgets) (0.2.0)
Requirement already satisfied: nbformat>=4.2.0 in d:\anaconda3\lib\site-packages (from ipywidgets) (5.1.3)
Requirement already satisfied: jupyter-client in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipykernel>=4.5.1->ipywidgets) (6.1.12)
Requirement already satisfied: tornado>=4.2 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipykernel>=4.5.1->ipywidgets) (6.1)
Requirement already satisfied: jedi>=0.16 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (0.18.0)
Requirement already satisfied: prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (3.0
.17)
Requirement already satisfied: setuptools>=18.5 in d:\anaconda3\lib\site-packages (from ipython>=4.0.0->ipywidgets) (58.0.4)
Requirement already satisfied: decorator in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (4.4.2)
Requirement already satisfied: pickleshare in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (0.7.5)
Requirement already satisfied: backcall in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (0.2.0)
Requirement already satisfied: colorama in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (0.4.4)
Requirement already satisfied: pygments in c:\users\oscar\appdata\roaming\python\python39\site-packages (from ipython>=4.0.0->ipywidgets) (2.8.1)
Requirement already satisfied: parso<0.9.0,>=0.8.0 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from jedi>=0.16->ipython>=4.0.0->ipywidgets) (0.8.1)
Requirement already satisfied: jsonschema!=2.5.0,>=2.4 in d:\anaconda3\lib\site-packages (from nbformat>=4.2.0->ipywidgets) (3.2.0)
Requirement already satisfied: jupyter-core in c:\users\oscar\appdata\roaming\python\python39\site-packages (from nbformat>=4.2.0->ipywidgets) (4.7.1)
Requirement already satisfied: attrs>=17.4.0 in d:\anaconda3\lib\site-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets) (21.2.0)
Requirement already satisfied: pyrsistent>=0.14.0 in d:\anaconda3\lib\site-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets) (0.18.0)
Requirement already satisfied: six>=1.11.0 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from jsonschema!=2.5.0,>=2.4->nbformat>=4.2.0->ipywidgets) (1.15.0)
Requirement already satisfied: wcwidth in c:\users\oscar\appdata\roaming\python\python39\site-packages (from prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0->ipython>=4.0.0->ipywidg
ets) (0.2.5)
Requirement already satisfied: notebook>=4.4.1 in d:\anaconda3\lib\site-packages (from widgetsnbextension~=3.5.0->ipywidgets) (6.4.5)
Requirement already satisfied: pyzmq>=17 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (22.0.3)
Requirement already satisfied: argon2-cffi in d:\anaconda3\lib\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (20.1.0)
Requirement already satisfied: terminado>=0.8.3 in d:\anaconda3\lib\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (0.9.4)
Requirement already satisfied: jinja2 in d:\anaconda3\lib\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (2.11.3)
Requirement already satisfied: prometheus-client in d:\anaconda3\lib\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (0.11.0)
Requirement already satisfied: nbconvert in d:\anaconda3\lib\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (6.1.0)
Requirement already satisfied: Send2Trash>=1.5.0 in d:\anaconda3\lib\site-packages (from notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (1.8.0)
Requirement already satisfied: python-dateutil>=2.1 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from jupyter-client->ipykernel>=4.5.1->ipywidgets) (2.8.1)
Requirement already satisfied: pywin32>=1.0 in c:\users\oscar\appdata\roaming\python\python39\site-packages (from jupyter-core->nbformat>=4.2.0->ipywidgets) (300)
Requirement already satisfied: pywinpty>=0.5 in d:\anaconda3\lib\site-packages (from terminado>=0.8.3->notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (0.5.7)
Requirement already satisfied: cffi>=1.0.0 in d:\anaconda3\lib\site-packages (from argon2-cffi->notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (1.14.6)
Requirement already satisfied: pycparser in d:\anaconda3\lib\site-packages (from cffi>=1.0.0->argon2-cffi->notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (2.20)
Requirement already satisfied: MarkupSafe>=0.23 in d:\anaconda3\lib\site-packages (from jinja2->notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (1.1.1)
Requirement already satisfied: mistune<2,>=0.8.1 in d:\anaconda3\lib\site-packages (from nbconvert->notebook>=4.4.1->widgetsnbextension~=3.5.0->ipywidgets) (0.8.4)
```

```python
import ipywidgets as widgets

ignition = widgets.ToggleButton(
    value=False,
    description='Iniciar Launch',
    button_style='success',
    tooltip='Engage your Launch',
    icon='rocket'
)

output = widgets.Output()

display(ignition, output)

def on_value_change(change):
    with output:
        if change['new'] == True:
            print("Nave Iniciada!")
        else:
            print("Nave Detenida")

ignition.observe(on_value_change, names='value')
```

```python
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```

[2] ✓ 0.1s   Python

🚀 Iniciar Launch

Nave Iniciada!
Nave Detenida

Ejercicio 2: Usar comandos avanzados

```
!pip install matplotlib
!pip install numpy
```

```
%pip install matplotlib
%pip install numpy
```
[3] ✓ 2.4s

```
... Requirement already satisfied: matplotlib in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (3.5.1)
    Requirement already satisfied: cycler>=0.10 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (0.11.0)
    Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (1.3.2)
    Requirement already satisfied: numpy>=1.17 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (1.22.2)
    Requirement already satisfied: packaging>=20.0 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (21.3)
    Requirement already satisfied: pillow>=6.2.0 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (9.0.1)
    Requirement already satisfied: python-dateutil>=2.7 in c:\users\oscar\appdata\roaming\python\python310\site-packages (from matplotlib) (2.8.2)
    Requirement already satisfied: pyparsing>=2.2.1 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (3.0.7)
    Requirement already satisfied: fonttools>=4.22.0 in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (from matplotlib) (4.29.1)
    Requirement already satisfied: six>=1.5 in c:\users\oscar\appdata\roaming\python\python310\site-packages (from python-dateutil>=2.7->matplotlib) (1.16.0)
    Note: you may need to restart the kernel to use updated packages.

    WARNING: You are using pip version 21.2.4; however, version 22.0.3 is available.
    You should consider upgrading via the 'C:\Users\oscar\AppData\Local\Programs\Python\Python310\python.exe -m pip install --upgrade pip' command.

    Requirement already satisfied: numpy in c:\users\oscar\appdata\local\programs\python\python310\lib\site-packages (1.22.2)
    Note: you may need to restart the kernel to use updated packages.

    WARNING: You are using pip version 21.2.4; however, version 22.0.3 is available.
    You should consider upgrading via the 'C:\Users\oscar\AppData\Local\Programs\Python\Python310\python.exe -m pip install --upgrade pip' command.
```
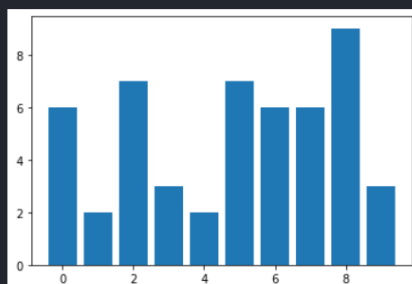
Niveles de Oxígeno

Muestra diez minutos de niveles de oxígeno en tu nave.

```python
import numpy as np
import matplotlib.pyplot as plt
data = np.random.default_rng(12345)
oxy_nums = data.integers(low=0, high=10, size=10)

plt.bar(range(len(oxy_nums)), oxy_nums)
plt.show()
```

Velocidad de la nave

Muestra los segundos necesarios para pasar de 0 a 11200 metros por segundo, dada la aceleración de la nave en metros por segundo.

```python
endVelocity = 11200
startVelocity = 0
acceleration = 9.8

time = (endVelocity - startVelocity) / acceleration
print("Tiempo para alcanzar la velocidad deseada = ", time)
```

Curso Propedútico de Python para Launch X - Innovacción Virtual.