TITANIC

March 9, 2025

1 Titanic dataset analysis

1.0.1 Esta tarea implica la limpieza y el análisis del conjunto de datos del Titanic. El conjunto de datos está disponible en Kaggle y contiene información sobre los pasajeros del Titanic, como su edad, clase, tarifa, etc.

1.0.2 1. Import and clean the dataset

[1]:

```
# Import libraries
import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import warnings
from scipy import stats
# Avoid warnings for a clean export
warnings.simplefilter("ignore", category=SyntaxWarning)
warnings.simplefilter("ignore", category=FutureWarning)

from bokeh.resources import CDN
from bokeh.embed import file_html
from IPython.display import display, HTML
```

[2]:

```
import bokeh
titanic_df = pd.read_csv("./assets/Datos Titanic/datoslimpios.csv",␣
 ↪encoding="latin1", on_bad_lines="warn")
titanic_df.head()
```

[2]:

```
   PassengerId  Survived  Pclass       Name  \
0            1         0       3     Braund
1            2         1       1    Cumings
2            3         1       3  Heikkinen
3            4         1       1   Futrelle
4            5         0       3      Allen

                                            Lastname     Sex   Age  SibSp  Parch  \
0                              Mr. Owen Harris    male  22.0      1      0
1   Mrs. John Bradley (Florence Briggs Thayer)  female  38.0      1      0
2                                  Miss. Laina  female  26.0      0      0
3           Mrs. Jacques Heath (Lily May Peel)  female  35.0      1      0
4                            Mr. William Henry    male  35.0      0      0

             Ticket     Fare Embarked
0         A/5 21171   7.2500        S
1          PC 17599  71.2833        C
2  STON/O2. 3101282   7.9250        S
3            113803  53.1000        S
4            373450   8.0500        S
```

[3]:
```
titanic_df.info()

column_names = [element for element in titanic_df.columns]
print(f"Columnas: {column_names}" )
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   PassengerId  891 non-null    int64
 1   Survived     891 non-null    int64
 2   Pclass       891 non-null    int64
 3   Name         891 non-null    object
 4   Lastname     891 non-null    object
 5   Sex          891 non-null    object
 6   Age          891 non-null    float64
 7   SibSp        891 non-null    int64
 8   Parch        891 non-null    int64
 9   Ticket       891 non-null    object
 10  Fare         891 non-null    float64
 11  Embarked     891 non-null    object
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
Columnas: ['PassengerId', 'Survived', 'Pclass', 'Name', 'Lastname', 'Sex',
'Age', 'SibSp', 'Parch', 'Ticket', 'Fare', 'Embarked']
```

[4]:
```
numeric_columns = titanic_df.select_dtypes(include=['int64', 'float64']).columns
numeric_df = titanic_df[numeric_columns]
# Remove the PassengerId column
numeric_df = numeric_df.drop(columns=['PassengerId'])
description = numeric_df.describe()
```

[5]:
```
tendencia_central = numeric_df.describe().applymap(lambda x: f"{x:0.3f}")
tendencia_central
```

[5]:

```
       Survived   Pclass      Age    SibSp    Parch     Fare
count   891.000  891.000  891.000  891.000  891.000  891.000
mean      0.384    2.309   29.385    0.523    0.382   32.204
std       0.487    0.836   13.260    1.103    0.806   49.693
min       0.000    1.000    0.420    0.000    0.000    0.000
25%       0.000    2.000   21.000    0.000    0.000    7.910
50%       0.000    3.000   30.000    0.000    0.000   14.454
75%       1.000    3.000   35.000    1.000    0.000   31.000
max       1.000    3.000   80.000    8.000    6.000  512.329
```

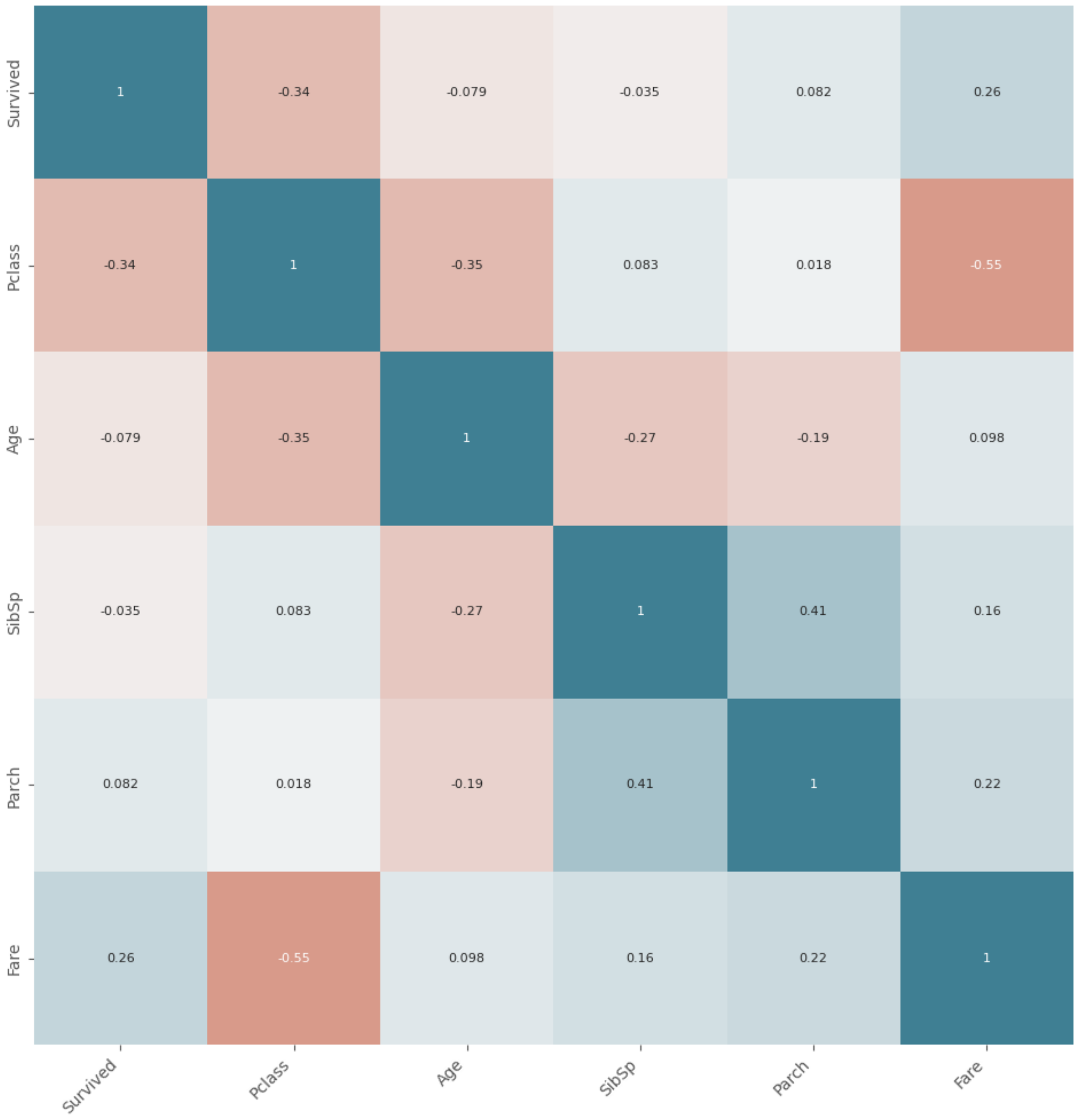
[6]:

```
numeric_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 6 columns):
 #   Column    Non-Null Count  Dtype
---  ------    --------------  -----
 0   Survived  891 non-null    int64
 1   Pclass    891 non-null    int64
 2   Age       891 non-null    float64
 3   SibSp     891 non-null    int64
 4   Parch     891 non-null    int64
 5   Fare      891 non-null    float64
dtypes: float64(2), int64(4)
memory usage: 41.9 KB
```

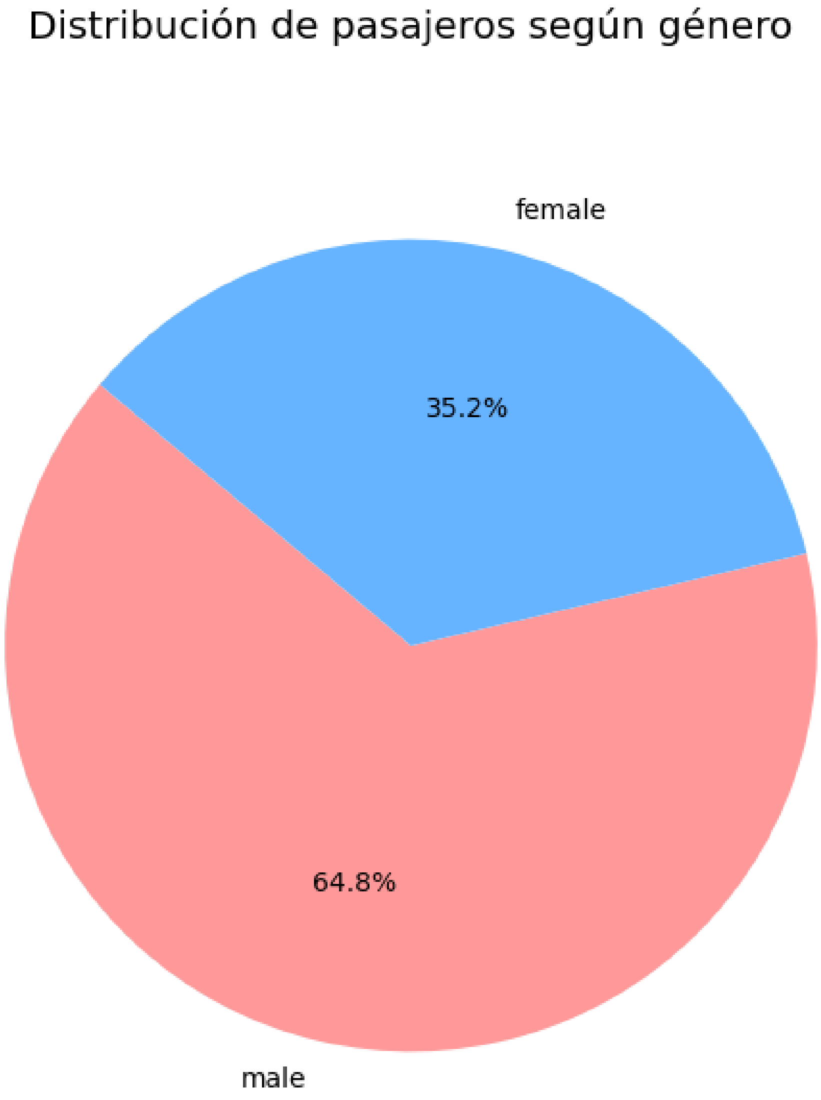
[7]:

```
corr_matrix = numeric_df.corr(method='pearson')
# Print corr matrix as a pretty chart of big size
plt.style.use('ggplot')

fig, ax = plt.subplots(nrows=1, ncols=1, figsize=(10, 10))
sns.heatmap(corr_matrix, annot=True, cbar=False, annot_kws={"size": 8},␣
 ↪vmin=-1, vmax=1, center=0,
            cmap=sns.diverging_palette(20, 220, n=200), square=True, ax=ax)
ax.set_xticklabels(ax.get_xticklabels(), rotation=45,␣
 ↪horizontalalignment='right')
ax.tick_params(labelsize=10)

# Adjust layout to center the plot
fig.tight_layout()
plt.show()
```



[8]:

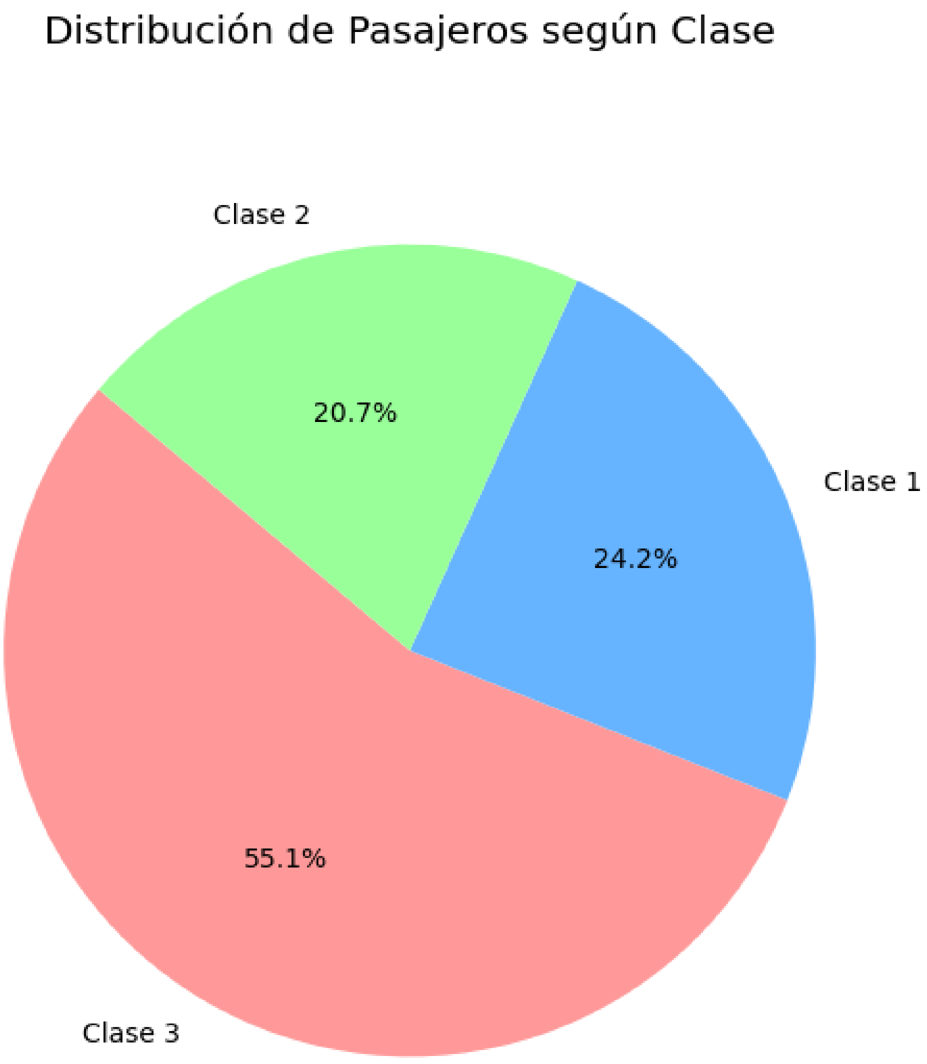
```
numeric_df = numeric_df.drop(columns=['Survived'])
numeric_df = numeric_df.drop(columns=['Pclass'])

plt.style.use('ggplot')
plt.figure(figsize=(6, 8))
labels = titanic_df['Sex'].unique()
plt.pie(titanic_df['Sex'].value_counts(), labels =titanic_df['Sex'].
  ↪value_counts().index,
        autopct='%1.1f%%', startangle=140,␣
  ↪colors=['#ff9999','#66b3ff','#99ff99','#ffcc99','#c2c2f0'])
plt.axis('equal')
plt.title("Distribución de pasajeros según género")
plt.show()
```



[9]:

```
# Imprime un pie plot de la columna Pclass
# El Pie chart debe mostrar el valor porcentual y el numero de pasajeros por␣
↪clase
```

```
plt.style.use('ggplot')
plt.figure(figsize=(6, 8))
labels = titanic_df['Pclass'].unique()
pasajeros = titanic_df['Pclass'].value_counts()
labels = [f"Clase {label}" for label in labels]
plt.pie(titanic_df['Pclass'].value_counts(), labels=labels,
        autopct='%1.1f%%', startangle=140,␣
 ↪colors=['#ff9999','#66b3ff','#99ff99','#ffcc99','#c2c2f0'])
plt.axis('equal')
plt.title("Distribución de Pasajeros según Clase")
plt.show()
#
```



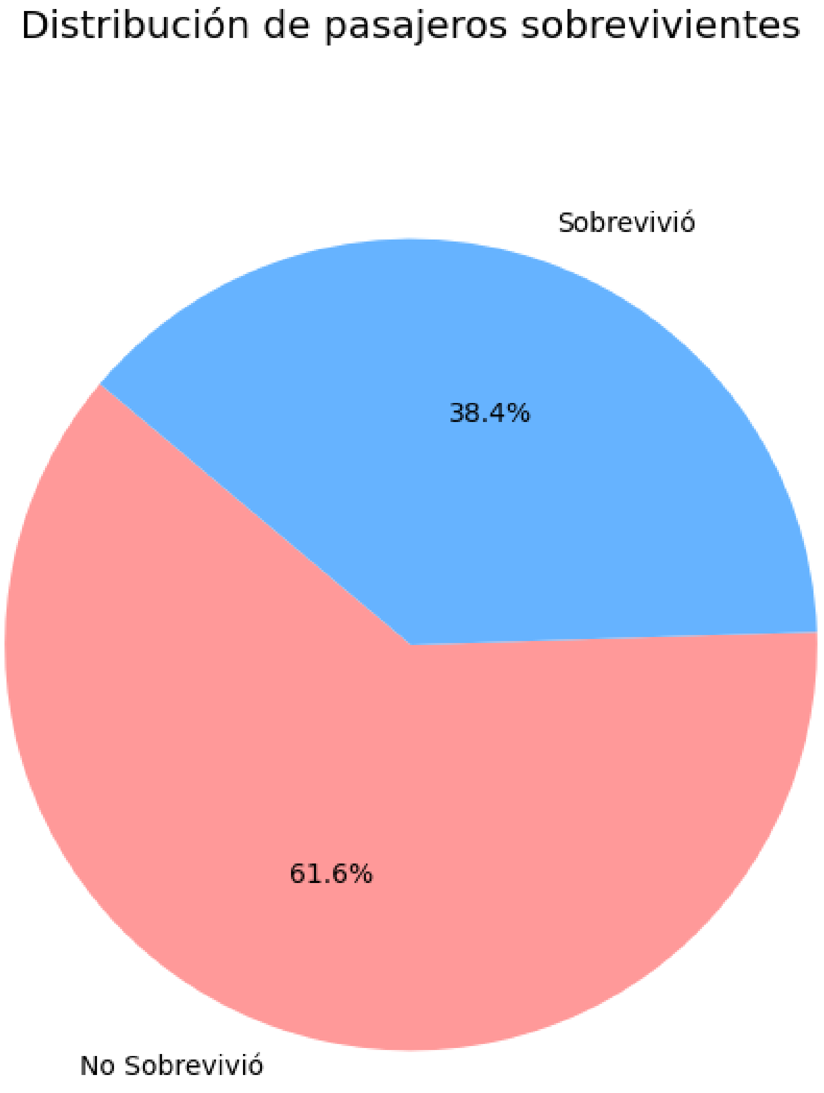
Dado que la clase, a pesar de estar determinada con un valor númerico, se trata de una variable categórica, carece de sentido analizarla por su distribución estadística. Una mejor forma de representar esa información puede ser con gráficos especializados en mostrar variables categóricas.

Como podemos observar, la gran mayoría de pasajeros se encontraban en **tercera clase**.

[10]:

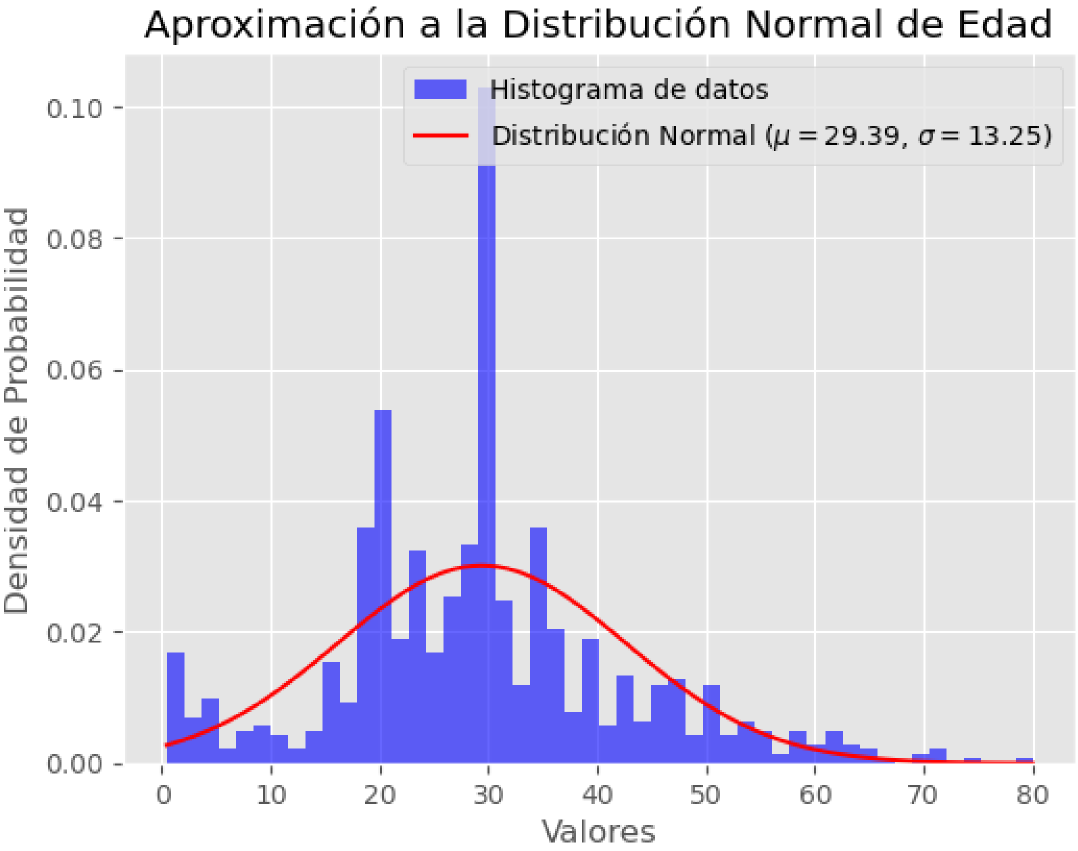
```
# Imprime un pie plot de la columna Survived
# El Pie chart debe mostrar el valor porcentual y el numero de pasajeros por␣
 ↪clase
```

```
plt.style.use('ggplot')
plt.figure(figsize=(6, 8))
labels = titanic_df['Survived'].unique()
labels = [f"Sobrevivió" if label == 1 else "No Sobrevivió" for label in labels]
plt.pie(titanic_df['Survived'].value_counts(), labels=labels,
        autopct='%1.1f%%', startangle=140,␣
 ↪colors=['#ff9999','#66b3ff','#99ff99','#ffcc99','#c2c2f0'])
plt.axis('equal')
plt.title("Distribución de pasajeros sobrevivientes")
plt.show()
```

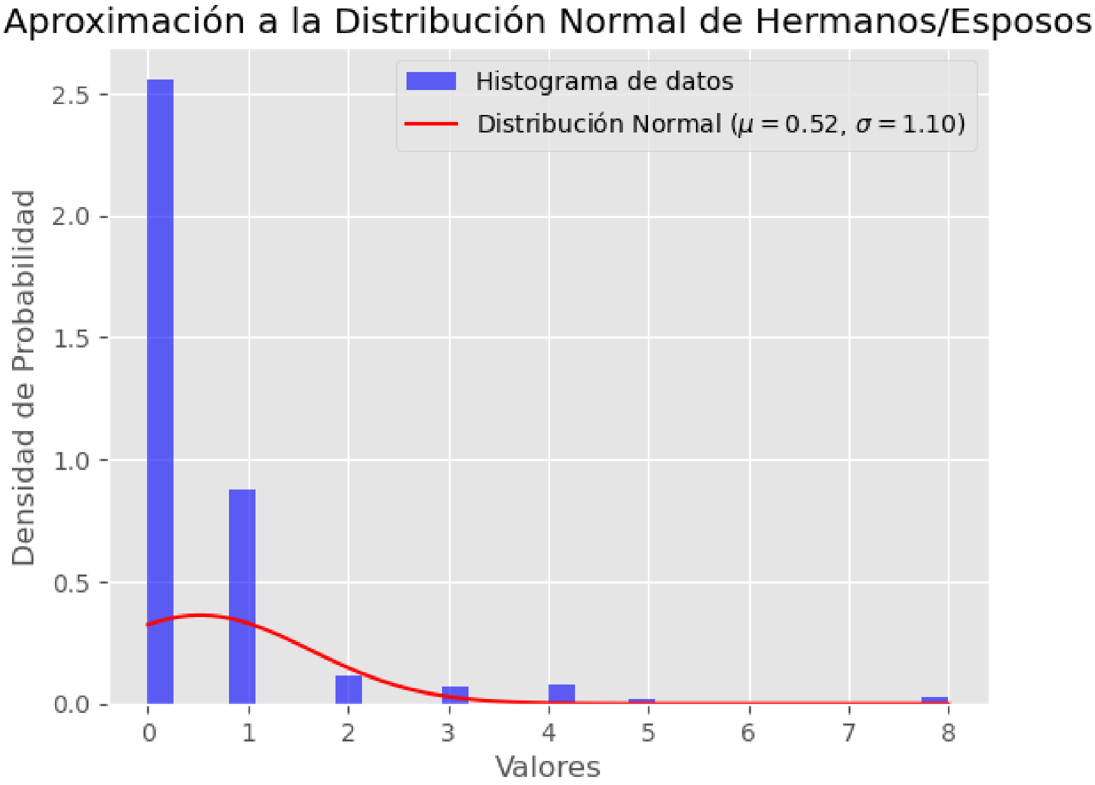


[11]:

```
# Estimar parámetros de la distribución normal
mu, sigma = np.mean(numeric_df['Age']), np.std(numeric_df['Age'])

# Crear el rango de valores para la curva
x = np.linspace(min(numeric_df['Age']), max(numeric_df['Age']), 100)

y = stats.norm.pdf(x, mu, sigma)
plt.style.use('ggplot')
# Graficar el histograma y la curva de densidad
plt.hist(numeric_df['Age'], bins=50, density=True, alpha=0.6, color='b',␣
 ↪label='Histograma de datos')
plt.plot(x, y, 'r', label=f'Distribución Normal ($\mu={mu:.2f}$, $\sigma={sigma:
 ↪.2f}$)')
plt.xlabel('Valores')
plt.ylabel('Densidad de Probabilidad')
plt.title('Aproximación a la Distribución Normal de Edad')
plt.legend()
plt.show()
```

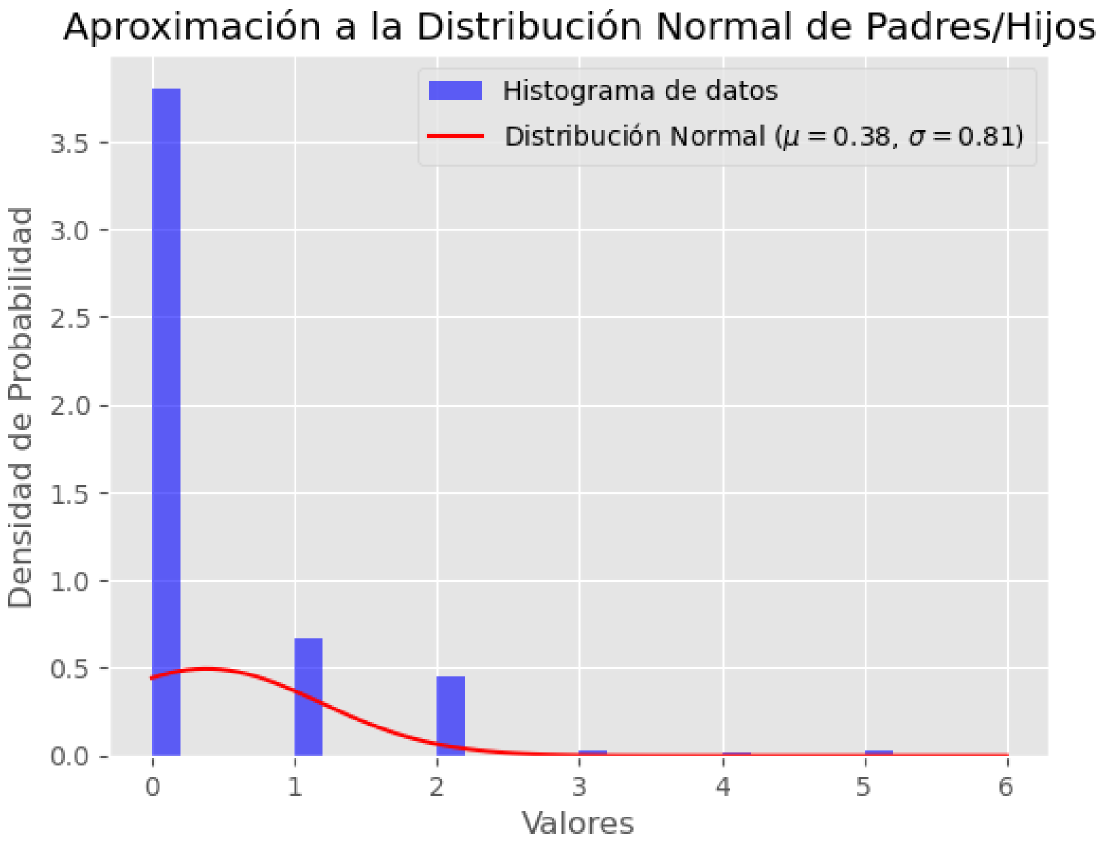


```
[12]: # Estimar parámetros de la distribución normal
mu, sigma = np.mean(numeric_df['SibSp']), np.std(numeric_df['SibSp'])

# Crear el rango de valores para la curva
x = np.linspace(min(numeric_df['SibSp']), max(numeric_df['SibSp']), 100)

y = stats.norm.pdf(x, mu, sigma)

# Graficar el histograma y la curva de densidad
plt.hist(numeric_df['SibSp'], bins=30, density=True, alpha=0.6, color='b',␣
 ↪label='Histograma de datos')
plt.plot(x, y, 'r', label=f'Distribución Normal ($\mu={mu:.2f}$, $\sigma={sigma:
 ↪.2f}$)')
plt.xlabel('Valores')
plt.ylabel('Densidad de Probabilidad')
plt.title('Aproximación a la Distribución Normal de Hermanos/Esposos')
plt.legend()
plt.show()
```



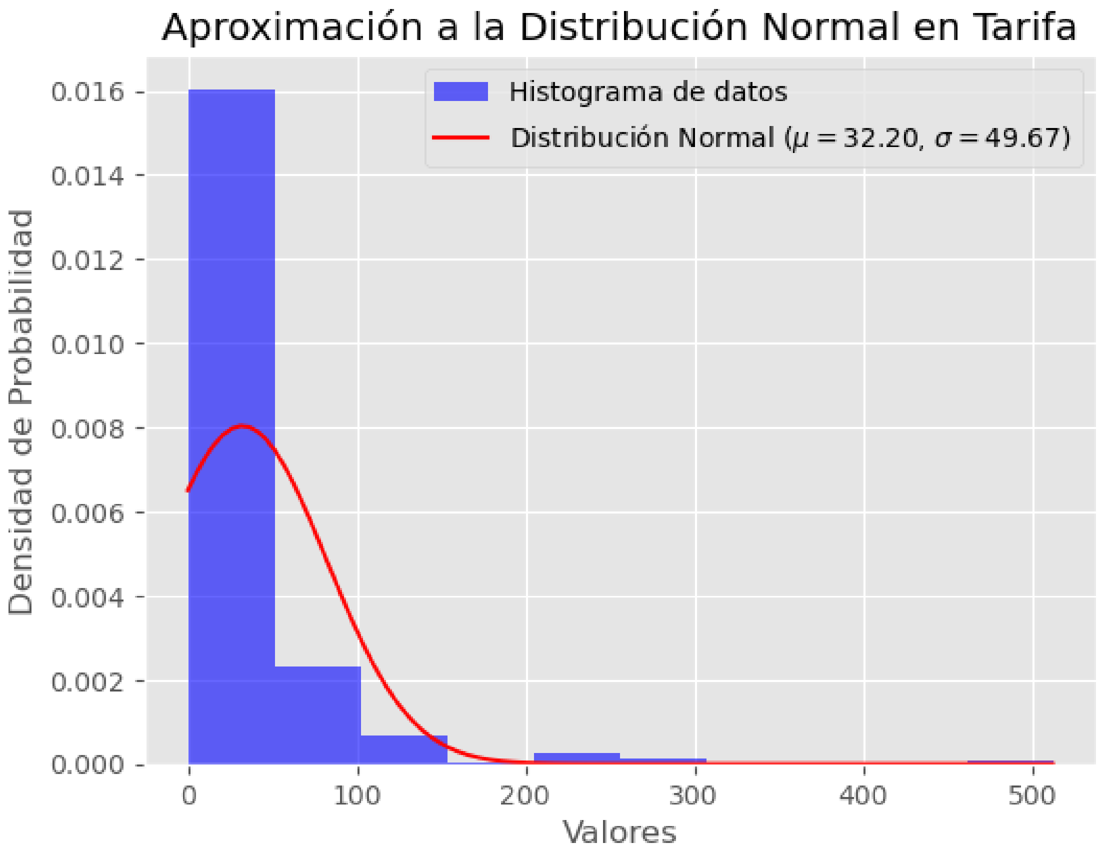
[13]:

```
# Estimar parámetros de la distribución normal
mu, sigma = np.mean(numeric_df['Parch']), np.std(numeric_df['Parch'])

# Crear el rango de valores para la curva
x = np.linspace(min(numeric_df['Parch']), max(numeric_df['Parch']), 100)

y = stats.norm.pdf(x, mu, sigma)

# Graficar el histograma y la curva de densidad
plt.hist(numeric_df['Parch'], bins=30, density=True, alpha=0.6, color='b',␣
 ↪label='Histograma de datos')
plt.plot(x, y, 'r', label=f'Distribución Normal ($\mu={mu:.2f}$, $\sigma={sigma:
 ↪.2f}$)')
plt.xlabel('Valores')
plt.ylabel('Densidad de Probabilidad')
plt.title('Aproximación a la Distribución Normal de Padres/Hijos')
plt.legend()
plt.show()
```



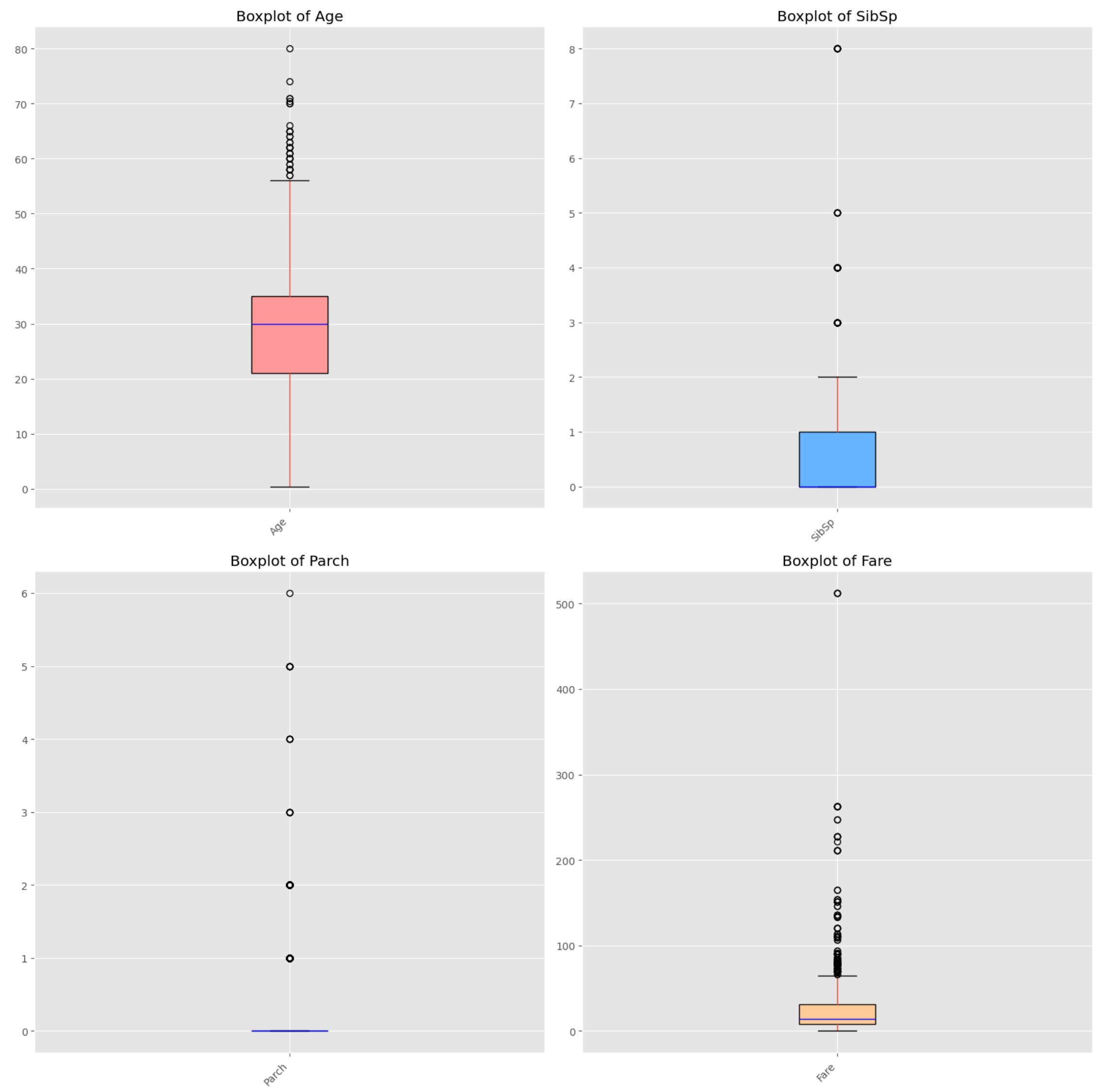
[14]:

```
# Estimar parámetros de la distribución normal
mu, sigma = np.mean(numeric_df['Fare']), np.std(numeric_df['Fare'])

# Crear el rango de valores para la curva
x = np.linspace(min(numeric_df['Fare']), max(numeric_df['Fare']), 100)

y = stats.norm.pdf(x, mu, sigma)

# Graficar el histograma y la curva de densidad
plt.hist(numeric_df['Fare'], bins=10, density=True, alpha=0.6, color='b',␣
 ↪label='Histograma de datos')
plt.plot(x, y, 'r', label=f'Distribución Normal ($\mu={mu:.2f}$, $\sigma={sigma:
 ↪.2f}$)')
plt.xlabel('Valores')
plt.ylabel('Densidad de Probabilidad')
plt.title('Aproximación a la Distribución Normal en Tarifa')
plt.legend()
plt.show()
```



[15]:

```
plt.style.use('ggplot')
fig, axes = plt.subplots(nrows=2, ncols=2, figsize=(15, 15))
colors=['#ff9999','#66b3ff','#99ff99','#ffcc99','#c2c2f0']
# Flatten the axes array for easy iteration
axes = axes.flatten()

# Generate a boxplot for each column in the dataframe
for i, column in enumerate(numeric_df.columns):
    numeric_df.boxplot(column=column, ax=axes[i], patch_artist=True,
                       boxprops=dict(facecolor=colors[i], color='black'),
                       medianprops=dict(color='blue'))
    axes[i].set_title(f'Boxplot of {column}')
    axes[i].tick_params(labelsize=10)
    axes[i].set_xticklabels(axes[i].get_xticklabels(), rotation=45,␣
 ↪horizontalalignment='right')

# Adjust layout to prevent overlap
fig.tight_layout()
plt.show()
```



1.1 Equipo:

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Ejemplo de grafico interactivo con plotly

[16]:
```
import plotly.graph_objects as go
from IPython.display import display, HTML

import plotly
plotly.offline.init_notebook_mode()
```

```
display(HTML(
    '<script type="text/javascript" async src="https://cdnjs.cloudflare.com/
 ↪ajax/libs/mathjax/2.7.1/MathJax.js?config=TeX-MML-AM_SVG"></script>'
))
# Estimar parámetros de la distribución normal
mu, sigma = np.mean(numeric_df['Fare']), np.std(numeric_df['Fare'])

# Crear el rango de valores para la curva
x = np.linspace(min(numeric_df['Fare']), max(numeric_df['Fare']), 100)
y = stats.norm.pdf(x, mu, sigma)

# Crear el histograma y la curva de densidad usando plotly
fig = go.Figure()

# Agregar el histograma
fig.add_trace(go.Histogram(
    x=numeric_df['Fare'],
    nbinsx=60,
    histnorm='probability density',
    name='Histograma de datos',
    marker_color='blue',
    opacity=0.6
))

# Agregar la curva de densidad
fig.add_trace(go.Scatter(
    x=x,
    y=y,
    mode='lines',
    name=r'Distribución Normal ($\mu= {0:.2f},\sigma={1:.2f}$)'.format(mu,␣
 ↪sigma),
    line=dict(color='red')
))

# Actualizar el layout para mejorar la visualización
fig.update_layout(
    title='Aproximación a la Distribución Normal en Tarifa',
    xaxis_title='Valores',
    yaxis_title='Densidad de Probabilidad',
    legend=dict(x=0.7, y=0.95),
    template='plotly_white'
)

fig.show()
```

```
<IPython.core.display.HTML object>
```

[17]:

```
import plotly.graph_objects as go
from IPython.display import display, HTML

# Estimar parámetros de la distribución normal
mu, sigma = np.mean(numeric_df['Age']), np.std(numeric_df['Age'])

# Crear el rango de valores para la curva
x = np.linspace(min(numeric_df['Age']), max(numeric_df['Age']), 100)
y = stats.norm.pdf(x, mu, sigma)

# Crear el histograma y la curva de densidad usando plotly
fig = go.Figure()

# Agregar el histograma
fig.add_trace(go.Histogram(
    x=numeric_df['Age'],
    nbinsx=60,
    histnorm='probability density',
    name='Histograma de datos',
    marker_color='blue',
    opacity=0.6
))

# Agregar la curva de densidad
fig.add_trace(go.Scatter(
    x=x,
    y=y,
    mode='lines',
    name=r'Distribución Normal ($\mu= {0:.2f},\sigma={1:.2f}$)'.format(mu,␣
 ↪sigma),
    line=dict(color='red')
))

# Actualizar el layout para mejorar la visualización
fig.update_layout(
    title='Aproximación a la Distribución Normal en Edad',
    xaxis_title='Valores',
    yaxis_title='Densidad de Probabilidad',
    legend=dict(x=0.7, y=0.95),
    template='plotly_white'
)

fig.show()
```

Comando para generar reporte PDF

[18]:

```
pip install nbconvert -U
```

```
Requirement already satisfied: nbconvert in c:\programdata\miniconda3\lib\site-
packages (7.16.6)
Requirement already satisfied: beautifulsoup4 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(4.12.3)
Requirement already satisfied: bleach!=5.0.0 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
bleach[css]!=5.0.0->nbconvert) (6.1.0)
Requirement already satisfied: defusedxml in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(0.7.1)
Requirement already satisfied: jinja2>=3.0 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(3.1.4)
Requirement already satisfied: jupyter-core>=4.7 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(5.7.2)
Requirement already satisfied: jupyterlab-pygments in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(0.3.0)
Requirement already satisfied: markupsafe>=2.0 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(2.1.5)
Requirement already satisfied: mistune<4,>=2.0.3 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(3.0.2)
Requirement already satisfied: nbclient>=0.5.0 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(0.10.0)
Requirement already satisfied: nbformat>=5.7 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(5.10.4)
Requirement already satisfied: packaging in c:\programdata\miniconda3\lib\site-
packages (from nbconvert) (23.1)
Requirement already satisfied: pandocfilters>=1.4.1 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(1.5.1)
Requirement already satisfied: pygments>=2.4.1 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(2.18.0)
Requirement already satisfied: traitlets>=5.1 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from nbconvert)
(5.14.3)
Requirement already satisfied: six>=1.9.0 in c:\programdata\miniconda3\lib\site-
packages (from bleach!=5.0.0->bleach[css]!=5.0.0->nbconvert) (1.16.0)
Requirement already satisfied: webencodings in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
bleach!=5.0.0->bleach[css]!=5.0.0->nbconvert) (0.5.1)
```

```
Requirement already satisfied: tinycss2<1.3,>=1.1.0 in
c:\programdata\miniconda3\lib\site-packages (from bleach[css]!=5.0.0->nbconvert)
(1.2.1)
Requirement already satisfied: platformdirs>=2.5 in
c:\programdata\miniconda3\lib\site-packages (from jupyter-core>=4.7->nbconvert)
(3.10.0)
Requirement already satisfied: pywin32>=300 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from jupyter-
core>=4.7->nbconvert) (306)
Requirement already satisfied: jupyter-client>=6.1.12 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
nbclient>=0.5.0->nbconvert) (8.6.3)
Requirement already satisfied: fastjsonschema>=2.15 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
nbformat>=5.7->nbconvert) (2.20.0)
Requirement already satisfied: jsonschema>=2.6 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
nbformat>=5.7->nbconvert) (4.23.0)
Requirement already satisfied: soupsieve>1.2 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
beautifulsoup4->nbconvert) (2.6)
Requirement already satisfied: attrs>=22.2.0 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
jsonschema>=2.6->nbformat>=5.7->nbconvert) (24.2.0)
Requirement already satisfied: jsonschema-specifications>=2023.03.6 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
jsonschema>=2.6->nbformat>=5.7->nbconvert) (2023.12.1)
Requirement already satisfied: referencing>=0.28.4 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
jsonschema>=2.6->nbformat>=5.7->nbconvert) (0.35.1)
Requirement already satisfied: rpds-py>=0.7.1 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
jsonschema>=2.6->nbformat>=5.7->nbconvert) (0.20.0)
Requirement already satisfied: python-dateutil>=2.8.2 in
c:\programdata\miniconda3\lib\site-packages (from jupyter-
client>=6.1.12->nbclient>=0.5.0->nbconvert) (2.8.2)
Requirement already satisfied: pyzmq>=23.0 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from jupyter-
client>=6.1.12->nbclient>=0.5.0->nbconvert) (26.2.0)
Requirement already satisfied: tornado>=6.2 in
c:\programdata\miniconda3\lib\site-packages (from jupyter-
client>=6.1.12->nbclient>=0.5.0->nbconvert) (6.3.3)
Note: you may need to restart the kernel to use updated packages.
```

```
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
```

```
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
```

[19]:

```
pip install pandoc -U
```

```
Requirement already satisfied: pandoc in c:\programdata\miniconda3\lib\site-
packages (2.4)
Requirement already satisfied: plumbum in c:\programdata\miniconda3\lib\site-
packages (from pandoc) (1.9.0)
Requirement already satisfied: ply in c:\programdata\miniconda3\lib\site-
packages (from pandoc) (3.11)
Requirement already satisfied: pywin32 in
c:\users\ville\appdata\roaming\python\python311\site-packages (from
plumbum->pandoc) (306)
Note: you may need to restart the kernel to use updated packages.
```

```
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
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info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
WARNING: Skipping c:\ProgramData\miniconda3\Lib\site-packages\networkx-3.1.dist-
info due to invalid metadata entry 'name'
```

[ ]:

```
# Exportar el notebook a PDF
file = "titanic_reports/TITANIC3.pdf"
!python -m jupyter nbconvert TITANIC.ipynb --to pdf --output $file
```

```
[NbConvertApp] Converting notebook TITANIC.ipynb to pdf
c:\ProgramData\miniconda3\share\jupyter\nbconvert\templates\latex\display_priori
ty.j2:32: UserWarning: Your element with mimetype(s) dict_keys(['text/html']) is
not able to be represented.
  ((*- endblock -*))
c:\ProgramData\miniconda3\share\jupyter\nbconvert\templates\latex\display_priori
ty.j2:32: UserWarning: Your element with mimetype(s)
dict_keys(['application/vnd.plotly.v1+json', 'text/html']) is not able to be
represented.
  ((*- endblock -*))
```

```
[NbConvertApp] Support files will be in TITANIC3_files\
[NbConvertApp] Making directory .\TITANIC3_files
[NbConvertApp] Writing 89840 bytes to notebook.tex
[NbConvertApp] Building PDF
[NbConvertApp] Running xelatex 3 times: ['xelatex', 'notebook.tex', '-quiet']
[NbConvertApp] Running bibtex 1 time: ['bibtex', 'notebook']
[NbConvertApp] WARNING | b had problems, most likely because there were no
citations
[NbConvertApp] PDF successfully created
[NbConvertApp] Writing 362298 bytes to TITANIC3.pdf
```

[23]:

```
# Exportar el notebook a PDF (sin celdas de código, solo resultados)
!python -m jupyter nbconvert --to pdf --no-input TITANIC.ipynb --output␣
 ↪TITANICr.pdf
```

```
[NbConvertApp] Converting notebook TITANIC.ipynb to pdf
c:\ProgramData\miniconda3\share\jupyter\nbconvert\templates\latex\display_priori
ty.j2:32: UserWarning: Your element with mimetype(s) dict_keys(['text/html']) is
not able to be represented.
  ((*- endblock -*))
c:\ProgramData\miniconda3\share\jupyter\nbconvert\templates\latex\display_priori
ty.j2:32: UserWarning: Your element with mimetype(s)
dict_keys(['application/vnd.plotly.v1+json', 'text/html']) is not able to be
represented.
  ((*- endblock -*))
[NbConvertApp] Support files will be in TITANICr_files\
[NbConvertApp] Making directory .\TITANICr_files
[NbConvertApp] Writing 50798 bytes to notebook.tex
[NbConvertApp] Building PDF
[NbConvertApp] Running xelatex 3 times: ['xelatex', 'notebook.tex', '-quiet']
[NbConvertApp] Running bibtex 1 time: ['bibtex', 'notebook']
[NbConvertApp] WARNING | b had problems, most likely because there were no
citations
[NbConvertApp] PDF successfully created
[NbConvertApp] Writing 320339 bytes to TITANICr.pdf
```