Connected to base (Python 3.12.5)

In [ ]:
```python
from main import load_dataset, get_mean, get_median, get_std, save_to_md, create_boxplot

import numpy as np
import pandas as pd

data = "https://raw.githubusercontent.com/anlane611/datasets/main/population.csv"
dataframe = load_dataset(data)


print(dataframe)
```

```
              Y  X1  X2
0      21.973610   4   1
1      12.387638   3   1
2      12.665114   3   1
3      16.753335   1   1
4      22.435229   2   1
...          ...  ..  ..
99995  23.310289   2   1
99996  20.406937   4   1
99997  25.335073   2   1
99998  29.479947   4   1
99999  16.473850   2   1

[100000 rows x 3 columns]
```

In [ ]:
```python
# Print descriptive statistics
print(dataframe.describe())
print(get_mean(dataframe["Y"]))
print(get_median(dataframe["Y"]))
print(get_std(dataframe["Y"]))
```

```
                  Y             X1            X2
count  100000.000000  100000.000000  100000.00000
mean       19.975793       3.004000       0.99193
std         5.004965       1.379131       0.08947
min        -3.058220       1.000000       0.00000
25%        16.590524       2.000000       1.00000
50%        19.971020       3.000000       1.00000
75%        23.351637       4.000000       1.00000
max        45.856084       5.000000       1.00000
19.976
19.971
5.005
5.005
```

In [ ]:
```python
# Define test functions
def test_mean():
    """Test the get_mean function"""
    assert get_mean(dataframe["Y"]) == round(np.mean(dataframe["Y"]), 3)
    assert get_mean(dataframe["X1"]) == round(np.mean(dataframe["X1"]), 3)


def test_median():
    """Test the get_median function"""
    assert get_median(dataframe["Y"]) == round(np.median(dataframe["Y"]), 3)
    assert get_median(dataframe["X1"]) == round(np.median(dataframe["X1"]), 3)


def test_std():
    """Test the get_std function"""
    assert get_std(dataframe["Y"]) == round(np.std(dataframe["Y"]), 3)
    assert get_std(dataframe["X2"]) == round(np.std(dataframe["X2"]), 3)


if __name__ == "__main__":
    test_mean()
    test_median()
    test_std()
    create_boxplot(dataframe["Y"], "boxplot.png")
    mean_y = get_mean(dataframe["Y"])
    median_y = get_median(dataframe["Y"])
    std_y = get_std(dataframe["Y"])
    save_to_md(mean_y, median_y, std_y)
```