In [4]:
```
import pandas as pd
import numpy as np
import scipy
```

In [19]:
```
fleury = pd.read_csv('FLEURY/DATA/FLEURY-FM.csv')
albert_einstein = pd.read_csv('AE/DATA/AE-FM.csv')
hsl = pd.read_csv('HSL/DATA/HSL-FM.csv')
```

In [40]:
```
for column in fleury.columns:
    if column in ['ID', 'y', 'sex']:
        continue
    print(f'Kruskal Wallis test for {column}')
    w,p = scipy.stats.kruskal(fleury[column], albert_einstein[column], hsl[column])

    if p > 0.05:
        print('It does not rejects the Null Hypothesis that data belongs the same distribution.')
        print(f'The Kruskal-Wallis H statistic: {w}')
        print(f'p-value: {p:.4f}')
    else:
        print('It rejects the Null Hypothesis that data belongs the same distribution.')
        print(f'The Kruskal-Wallis H statistic: {w}')
        print(f'p-value: {p:.4f}')

    print('\n\n')
```

```
Kruskal Wallis test for Hemoglobin
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 29.040701116892343
p-value: 0.0000


Kruskal Wallis test for Meancorpuscularvolume
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 118.32812432425507
p-value: 0.0000


Kruskal Wallis test for Leukocytes
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 197.68751992297965
p-value: 0.0000


Kruskal Wallis test for Neutrophils
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 208.71799598402436
p-value: 0.0000


Kruskal Wallis test for Eosinophils
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 81.37585869497471
p-value: 0.0000


Kruskal Wallis test for Basophils
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 117.02137207734658
p-value: 0.0000


Kruskal Wallis test for Lymphocytes
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 141.34888314372614
p-value: 0.0000


Kruskal Wallis test for Monocytes
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 68.42651964626748
p-value: 0.0000


Kruskal Wallis test for Platelets
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 39.0112974366126
p-value: 0.0000


Kruskal Wallis test for RedbloodCells
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 30.132109267676537
p-value: 0.0000


Kruskal Wallis test for Hematocrit
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 69.757038631326
p-value: 0.0000


Kruskal Wallis test for Meancorpuscularhemoglobin
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 7.462814620849163
p-value: 0.0240


Kruskal Wallis test for Meancorpuscularhemoglobinconcentration
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 511.2657954370208
p-value: 0.0000


Kruskal Wallis test for Redbloodcelldistributionwidth
It does not rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 4.2898494314279025
p-value: 0.1171


Kruskal Wallis test for Meanplateletvolume
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 77.42244207506806
p-value: 0.0000


Kruskal Wallis test for Neutrophils#
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 175.81113099838612
p-value: 0.0000


Kruskal Wallis test for Eosinophils#
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 64.08281895053113
p-value: 0.0000


Kruskal Wallis test for Basophils#
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 110.27985450539596
p-value: 0.0000


Kruskal Wallis test for Lymphocytes#
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 187.50654017196615
p-value: 0.0000


Kruskal Wallis test for Monocytes#
It rejects the Null Hypothesis that data belongs the same distribution.
The Kruskal-Wallis H statistic: 26.770511775682447
p-value: 0.0000
```