Tecnológico de Monterrey Maestría en Inteligencia Artificial Aplicada

Aseguramiento de la Calidad de Software

Actividad 4.

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1. Compute statics.

a. Se ejecuto el código en Jupyter Notebook, mostrando los siguientes resultados

File: TC1.txt Mean: 242.32 Median: 239.5 Mode: [393.0, 170.0] Standard Deviation: 145.44002062361477 Variance: 21152.79959899749 Time Elapsed: 0.0 seconds File: TC2.txt Mean: 250.7840161861406 Median: 247.0 Mode: [230.0] Standard Deviation: 144.20779467138226 Variance: 20795.888043983545 Time Elapsed: 0.004002094268798828 seconds File: TC3.txt Mean: 249.77621989860583 Median: 249.0 Mode: [94.0] Standard Deviation: 145.3236057694065 Variance: 21118.950393821877 Time Elapsed: 0.014995813369750977 seconds File: TC4.txt Mean: 149.00267347908746 Median: 147.75 Mode: [123.75] Standard Deviation: 130.41958525663028 Variance: 17009.268218511454

Time Elapsed: 0.015010356903076172 seconds

```
Error reading line: ABA, Error: could not convert string to float: 'ABA
Error reading line: 23,45, Error: could not convert string to float: '23,45'
Error reading line: 11;54, Error: could not convert string to float: '11;54'
Error reading line: 11, Error: could not convert string to float: '11'
File: TC5.txt
Mean: 241.49511400651465
Median: 241.0
Mode: [393.0, 19.0, 368.0, 290.0, 56.0, 11.0, 76.0, 215.0, 64.0, 375.0, 466.0, 277.0, 211.0, 46.0, 278.0, 170.0, 166.0, 96.0, 268.0]
Standard Deviation: 145.70234164786086
Variance: 21229.172361669967
Time Elapsed: 0.001990079879760742 seconds
File: TC6.txt
Mean: 1.8790659927977443e+20
Median: 1.88008049965543e+20
Mode: []
Standard Deviation: 1.0739995165766761e+20
Variance: 1.153474961606934e+40
Time Elapsed: 0.007994890213012695 seconds
Error reading line: ABBA, Error: could not convert string to float: 'ABBA'
Error reading line: ERROR, Error: could not convert string to float: 'ERROR'
File: TC7.txt
Mean: 2.4746739549971625e+20
Median: 2.4664097307429e+20
Mode: []
Standard Deviation: 1.4461131060123329e+20
Variance: 2.0912431153806367e+40
Time Elapsed: 0.028996706008911133 seconds
```

b. Se ejecuto Pylint, mostrando los siguientes errores

c. Después de realizar algunas correcciones, se obtuvo un resultado de 9.47 sobre 10, lo cual se podría decir que es relativamente alto.

```
C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software>pylint compute_statistics.py

****************** Module compute_statistics
compute_statistics.py:31:4: R1705: Unnecessary "else" after "return", remove the "else" and de-indent the code inside it
(no-else-return)
compute_statistics.py:72:4: W0621: Redefining name 'results' from outer scope (line 90) (redefined-outer-name)
compute_statistics.py:87:4: C0103: Constant name "all_results" doesn't conform to UPPER_CASE naming style (invalid-name)

Your code has been rated at 9.47/10 (previous run: 9.47/10, +0.00)

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software>
```

2. Converter.

 Se ejecuto el código desde la línea de comandos, mostrando los siguientes resultados:

```
Símbolo del sistema
 Tumber: 2700138, Binary: 101001001100110101010, Hex: 29336A Tumber: 9645053, Binary: 10010011001101111111101, Hex: 932BFD Tumber: 1181110, Binary: 1001000000101101101101, Hex: 1205B6 Tumber: 1492185, Binary: 1011011000100011011001, Hex: 1664D9 Tumber: 4018595, Binary: 1111010101000110100011, Hex: 3D51A3 Tumber: 7654888, Binary: 111010011000110110100, Hex: 746DE8 Tumber: 7062453, Binary: 1101011110000110110101, Hex: 6BC3B5 Tumber: 2478010, Binary: 10010111001111101100, Hex: 5D9BF0 Tumber: 8420417, Binary: 100101110101111110000, Hex: 5D9BF0 Tumber: 2917489, Binary: 1011001000011000011, Hex: 807C41 Tumber: 3340773, Binary: 10000000011111001101, Hex: 25471 Tumber: 3115956, Binary: 100010000011001010, Hex: 110734 Tumber: 9172192, Binary: 1000100001110011010, Hex: 110734 Tumber: 6271996, Binary: 1000101111110011111100, Hex: 5FB3FC Tumber: 8586939, Binary: 10001110010010, Hex: C72A
                               868939, Binary: 1000010010001101011011, Hex: 848D5B 50986, Binary: 1100011100101010, Hex: C72A 9376410, Binary: 100011110001001010101010, Hex: 8F129A 5962327, Binary: 101101011111101001010111, Hex: 5AFA57 7686891, Binary: 11101010100101011101011, Hex: 754AEB 6615183, Binary: 110010111100001001111, Hex: 64F08F 1864844, Binary: 11100011110010100100, Hex: 1C748C 232062, Binary: 11000111001101010100, Hex: 1C748C
                             53145, Binary: 1100111110011001, Hex: CF99
3897508, Binary: 1110110111100010100100, Hex: 3B78A4
7773386, Binary: 11101101001110011001010, Hex: 769CCA
```

```
Number: 4223424, Binary: 10000000111000111000000, Hex: 4071C0
Number: 7930799, Binary: 11110010000001110101111, Hex: 7903AF
Number: 9302948, Binary: 100011011111001110100100, Hex: 8DF3A4
Number: 2288712, Binary: 1000101110110001001000, Hex: 22EC48
Number: 197187, Binary: 110000001001000011, Hex: 30243
Number: 19/18/, Binary: 110000001001000011, Hex: 30243
Number: 5266939, Binary: 10100000101110111111011, Hex: 505DFB
Number: 221545, Binary: 110110000101101001, Hex: 36169
Number: 7957027, Binary: 111100101101000100011, Hex: 796A23
Number: 3195361, Binary: 1100001100000111100001, Hex: 30C1E1
Number: 7106269, Binary: 1101100011011101101101, Hex: 6C6EDD
Number: 9633312, Binary: 100100101111111000100000, Hex: 92FE20
Number: 9713704, Binary: 100101000011100000101000, Hex: 943828
Number: 4418686, Binary: 10000110110110001111110, Hex: 436C7E
Number: 9682250, Binary: 100100111011110101001010, Hex: 93BD4A
Number: 2583824, Binary: 1001110110110100010000, Hex: 276D10
Number: 4979126, Binary: 10010111111100110110110, Hex: 4BF9B6
Number: 6280954, Binary: 10111111101011011111010, Hex: 5FD6FA
Number: 1228610, Binary: 100101011111101000010, Hex: 12BF42
Number: 705518, Binary: 10101100001111101110, Hex: AC3EE
Number: 1017653, Binary: 11111000011100110101, Hex: F8735
Number: 500098, Binary: 1111010000110000010, Hex: 7A182
Number: 4250898, Binary: 10000001101110100010010, Hex: 400012
Number: 4055028, Binary: 11110111011111111110100, Hex: 3DDFF4
Number: 2754240, Binary: 101010000011011000000, Hex: 2A06C0
Number: 452999, Binary: 110111010010000111, Hex: 6E987
Number: 6831458, Binary: 1101000001111010100010, Hex: 683D62
Number: 207636, Binary: 11001010110001010, Hex: 32B14
Number: 7280635, Binary: 1100111100010111111111111, Hex: 6F17FB
Number: 4303570, Binary: 1000001101010101010010, Hex: 41AAD2
Number: 8375055, Binary: 11111111100101100001111, Hex: 7FCB0F
Number: 1457960, Binary: 101100011111100101000, Hex: 163F28
Number: 5197625, Binary: 10011110100111100111001, Hex: 4F4F39
Number: 3144371, Binary: 1011111111101010110011, Hex: 2FFAB3
Number: 6674138, Binary: 11001011101011011011010, Hex: 65D6DA
Number: 2692106, Binary: 1010010001010000001010, Hex: 29140A
Number: 2276769, Binary: 1000101011110110100001, Hex: 22BDA1
Number: 1940971, Binary: 111011001110111101011, Hex: 1D9DEB
Number: 3288264, Binary: 1100100010110011001000, Hex: 322CC8
Number: 9431003, Binary: 100011111110011111011101, Nex. 3CE9D3
Number: 3992019, Binary: 11111001110100111000111, Hex: 3CE9D3
Number: 8184782, Binary: 111110011110001111001110, Hex: 7CE3CE
Number: 2847975, Binary: 10101101110100111000111, Hex: 2B74E7
Number: 7891025, Binary: 11111000011010001100001, Hex: 786851
Number: 900082, Binary: 1101101111111110101, Hex: DBBF2
Number: 1831532, Binary: 110111111001001101100, Hex: 1BF26C
Number: 8428253, Binary: 1000000010011011011101, Hex: 809ADD
Number: 2905752, Binary: 1011000101011010011000, Hex: 2C5698
Number: 9763121, Binary: 100101001111100100110001, Hex: 94F931
Number: 257890, Binary: 111110111101100010, Hex: 3EF62
Number: 4699761, Binary: 10001111011011001110001, Hex: 47B671
 Number: 359541, Binary: 1010111110001110101, Hex: 57C75
 Number: 3446150, Binary: 1101001001010110000110, Hex: 349586
```

```
Number: 4246818, Binary: 10000001100110100100010, Hex: 40CD22
Number: 1848840, Binary: 111000011011000001000, Hex: 1C3608
Number: 938480, Binary: 11100101000111110000, Hex: E51F0
Number: 227465, Binary: 110111100010001001, Hex: 37889
Number: 3923488, Binary: 1110111101111000100000, Hex: 3BDE20
Number: 8915697, Binary: 10001000000101011110001, Hex: 880AF1
Number: 4309094, Binary: 10000011100000001100110, Hex: 41C066
Number: 3891251, Binary: 1110110110000000110011, Hex: 3B6033
Number: 8627956, Binary: 100000111010011011110100, Hex: 83A6F4
Number: 5884613, Binary: 10110011100101011000101, Hex: 59CAC5
Number: 1659318, Binary: 110010101000110110110, Hex: 1951B6
Number: 1834855, Binary: 110111111111101100111, Hex: 1BFF67
Number: 1834855, Binary: 1101111111111101100111, Hex: 1BFF67
Number: 3386751, Binary: 110011101011011111111, Hex: 33AD7F
Number: 3000166, Binary: 1011011100011101100110, Hex: 2DC766
Number: 9135626, Binary: 100010110110011000001010, Hex: 8B660A
Number: 4869260, Binary: 10010100100110010001100, Hex: 4A4C8C
Number: 76550, Binary: 10010101100000110, Hex: 12B06
Number: 432271, Binary: 110100110001001111, Hex: 6988F
Number: 251028, Binary: 11110101001010100, Hex: 3D494
Number: 7016218, Binary: 11010110000111100011010, Hex: 6B0F1A
Number: 6896099, Binary: 110100100111100011, Hex: 6939E3
Number: 8386350, Binary: 11111111111011100101110, Hex: 7FF72E
Number: 8637147, Binary: 100000111100101011011011, Hex: 83CADB
Number: 936705, Binary: 11100100101100000001, Hex: E4B01
Number: 6602175, Binary: 11001001011110110111111, Hex: 64BDBF
Number: 1429181, Binary: 101011100111010111101, Hex: 15CEBD
Number: 8395138, Binary: 100000000001100110000010, Hex: 801982
Number: 6132809, Binary: 10111011001010001001001, Hex: 5D9449
Number: 5936917, Binary: 10110101001011100010101, Hex: 5A9715
Number: 2878578, Binary: 1010111110110001110010, Hex: 2BEC72
Number: 158885, Binary: 100110110010100101, Hex: 26CA5
Number: 2441957, Binary: 1001010100001011100101, Hex: 2542E5
Number: 5914794, Binary: 10110100100000010101010, Hex: 5A40AA
Number: 3999272, Binary: 1111010000011000101000, Hex: 3D0628
Number: 3999272, Binary: 1111010000011000101000, Hex: 3D0628
Number: 3142897, Binary: 1011111111010011110001, Hex: 2FF4F1
Number: 8151159, Binary: 11111000110000001110111, Hex: 7C6077
Number: 5147564, Binary: 1001110100011110101010, Hex: 4E8BAC
Number: 4595374, Binary: 10001100001111010101110, Hex: 461EAE
Number: 4234951, Binary: 10000001001111011000111, Hex: 409EC7
Number: 7880605, Binary: 11110000011111110011101, Hex: 783F9D
Number: 7009921, Binary: 1010101111011010000001, Hex: 6AF681
Number: 695580, Binary: 10101001110100011100, Hex: A9D1C
Number: 7370443, Binary: 11100000111011011001011, Hex: 7076CB
Number: 8419625, Binary: 100000000111100100101001, Hex: 807929
Number: 7024080, Binary: 11010110010110111010000, Hex: 6B2DD0
Number: 3905988, Binary: 1110111001100111000100, Hex: 3B99C4
Number: 1767599, Binary: 110101111100010101111, Hex: 1AF8AF
Number: 935136, Binary: 11100100010011100000, Hex: E44E0
Number: 635788, Binary: 10011011001110001100, Hex: 9B38C
Number: 8807719, Binary: 100001100110010100100111, Hex: 866527
Number: 317375, Binary: 1001101011110111111, Hex: 4D7BF
Number: 9975410, Binary: 100110000011011001110010, Hex: 983672
Number: 2727968, Binary: 1010011010000000100000, Hex: 29A020
Number: 7444399, Binary: 11100011001011110101111, Hex: 7197AF
Number: 4065675, Binary: 1111100000100110001011, Hex: 3E098B
Number: 9925720, Binary: 100101110111010001011000, Hex: 977458
Wumber: 2293633, Binary: 1000101111111110000001, Hex: 22FF81
```

```
Number: 33, Binary: 100001, Hex: 21
Number: -10, Binary: , Hex:
Number: 47, Binary: 101111, Hex: 2F
Number: 47, Binary: 101111, Hex: 2F
Number: -13, Binary: , Hex:
Number: -32, Binary: , Hex:
Number: 1, Binary: 1, Hex: 1
Number: 1, Binary: 1, Hex: 1
Number: -33, Binary: , Hex:
Number: 16, Binary: 10000, Hex: 10
Number: 17, Binary: 10001, Hex: 11
Number: 4, Binary: 100, Hex: 4
Processing file: TC4.txt
Number: -39, Binary: , Hex:
Number: 8, Binary: 1000, Hex: 8
Number: 34, Binary: 100010, Hex: 22
Number: 34, Binary: 100010, Hex: 22
Number: 17, Binary: 10001, Hex: 31
Number: 49, Binary: 101, Hex: 5
Invalid data: ABC is not a valid integer.
Number: 0, Binary: 0, Hex: 0
Number: 33, Binary: 100001, Hex: 21
Number: 12, Binary: 1100, Hex: C
Number: -6, Binary: , Hex:
Number: 27, Binary: 11011, Hex: 1B
Number: -4, Binary: , Hex:
Number: -38, Binary: , Hex:
Number: 26, Binary: 11010, Hex: 1A
Number: 49, Binary: 110001, Hex: 31
Number: 29, Binary: 11101, Hex: 1D
Number: 42, Binary: 101010, Hex: 2A
Number: -16, Binary: , Hex:
Invalid data: ERR is not a valid integer.
Number: 34, Binary: 100010, Hex: 22
Number: 20, Binary: 10100, Hex: 14
Number: 0, Binary: 0, Hex: 0
Number: 0, Binary: 0, Hex: 0
Number: 25, Binary: 11001, Hex: 19
Number: 45, Binary: 101101, Hex: 2D
Number: 3, Binary: 11, Hex: 3
Number: -46, Binary: , Hex:
Number: -46, Binary: , Hex:
Number: 29, Binary: 11101, Hex: 1D
Number: 33, Binary: 100001, Hex: 21
Number: 29, Binary: 11101, Hex: 1D
Number: 26, Binary: 11010, Hex: 1A
Number: -5, Binary: , Hex:
Number: -36, Binary: , Hex:
Number: 12, Binary: 1100, Hex: C
Number: 45, Binary: 101101, Hex: 2D
Number: -50, Binary: , Hex:
Number: 0, Binary: 0, Hex: 0
Number: -6, Binary: , Hex:
Invalid data: VAL is not a valid integer.
Execution time: 0.5244710445404053 seconds
 :\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P2>
```

b. Se ejecuto Pylint, mostrando los siguientes errores:

```
C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P2>pylint convertNumbers.py
****************** Module convertNumbers
convertNumbers.py:58:0: C0303: Trailing whitespace (trailing-whitespace)
convertNumbers.py:64:0: C0303: Trailing whitespace (trailing-whitespace)
convertNumbers.py:1:0: C0114: Missing module docstring (missing-module-docstring)
convertNumbers.py:1:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:5:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:28:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:29:9: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)
convertNumbers.py:34:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:35:9: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)
convertNumbers.py:35:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:35:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:55:0: C0116: Missing function or method docstring (missing-function-docstring)
convertNumbers.py:55:0: C0116: Missing function or method docstring (missing-function-docstring)

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P2>
```

c. Después de realizar algunas correcciones, se obtuvo un resultado de 9.49 sobre 10, lo cual se podría decir que es relativamente alto.

3. Count Words.

a. Se ejecuto el código desde la línea de comandos, mostrando los siguientes resultados:

```
Administrador Símbolo del sistema

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P3>python word_count.py TC1.txt TC2.txt TC3.txt TC4.txt TC5.txt
Word count for all files has been completed.
Time elapsed for all files: 0.01 seconds

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P3>
```

Para este ejercicio modificamos ciertas palabras en el archivo TC1.txt para validar si se reconocían como errores, y el código funciona efectivamente mostrando el siguiente resultado.

```
Administrador: Símbolo del sistema

- | X

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P3>python word_count.py TC1.txt TC2.txt TC3.txt TC4.txt TC5.txt
Word count for all files has been completed.
Time elapsed for all files: 0.01 seconds

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P3>python word_count.py TC1.txt TC2.txt TC3.txt TC4.txt TC5.txt
Found invalid data in TC1.txt: 123456
Found invalid data in TC1.txt: B1g
Found invalid data in TC1.txt: B0m01dgft
Word count for all files has been completed.
Time elapsed for all files: 0.02 seconds

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P3>

C:\Users\Brayan\Desktop\Tec_2024_I_Tri\Software\A01793670_Actividad4.2\P3>
```

b. Se ejecuto Pylint, mostrando los siguientes errores:

c. Después de realizar algunas correcciones, se obtuvo un resultado de 9.46 sobre 10, lo cual se podría decir que es relativamente alto.