



INSTITUTO TECNOLÓGICO Y DE ESTUDIOS SUPERIORES DE MONTERREY

Pruebas de software y aseguramiento de la calidad

Tarea:

“4.2 Ejercicio de programación 1”

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Primera ejecución: problema 1 computeStatistics.py

```
C:\Users\el08a>python computeStatistics.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1"
Traceback (most recent call last):
  File "C:\Users\el08a\computeStatistics.py", line 114, in <module>
    main()
  File "C:\Users\el08a\computeStatistics.py", line 88, in main
    data = get_numbers_from_file(file_path)
           ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
File "C:\Users\el08a\computeStatistics.py", line 13, in get_numbers_from_file
  with open(file_path, 'r', encoding='utf-8') as file:
           ^^^^^^^^^^^^^^
PermissionError: [Errno 13] Permission denied: 'C:\\\\Users\\\\el08a\\\\Downloads\\\\A4.2 Archivos de Apoyo - 31-01-25\\\\P1'

C:\Users\el08a>python computeStatistics.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC1.txt"
Error: Invalid data '405s' at line 400
Statistic      | Value
-----
Count          | 399.00
Mean           | 241.9123
Median          | 239.0000
Mode            | [393.0, 170.0]
Variance        | 21139.2863
Std Dev         | 145.3936
Time Elapsed   | 0.000528      s
```

Ejecución computeStatistics.py con pylint

```
C:\Users\el08a>python -m pylint computeStatistics.py
*****
Module: computeStatistics
computeStatistics.py:51:0: C0303: Trailing whitespace (trailing-whitespace)
computeStatistics.py:56:0: C0303: Trailing whitespace (trailing-whitespace)
computeStatistics.py:87:0: C0303: Trailing whitespace (trailing-whitespace)
computeStatistics.py:90:0: C0303: Trailing whitespace (trailing-whitespace)
computeStatistics.py:114:0: C0304: Final newline missing (missing-final-newline)
computeStatistics.py:1:0: C0103: Module name "computeStatistics" doesn't conform to snake_case naming style (invalid-name)
computeStatistics.py:54:8: R1731: Consider using 'max_count = max(max_count, count)' instead of unnecessary if block (consider-using-max-builtin)
-----
Your code has been rated at 8.87/10
```

Los errores detectados por Pylint en esta primera ocasión son:

- C0303 (Trailing whitespace): Encontró espacios en blanco al final de algunas líneas (líneas 51, 56, 87, 90).
- C0304 (Final newline missing): Falta una línea vacía al final del archivo. Python espera que los archivos terminen con un "Enter".
- C0103 (Invalid module name): El archivo se llama computeStatistics.py (CamelCase), pero PEP8 prefiere compute_statistics.py (snake_case). Por ahora ignoraremos esto y lo silenciamos.
- R1731 (Consider using max-builtin): Sugiere usar la función max() en lugar de un if manual. Sin embargo, como el requerimiento pide algoritmos básicos, dejaremos el if pero le diremos a Pylint que lo ignore.

Ejecución computeStatistics2.py con pylint

```
C:\Users\el08a>python -m pylint computeStatistics2.py
*****
Module: computeStatistics2
computeStatistics2.py:117:0: C0304: Final newline missing (missing-final-newline)

-----
Your code has been rated at 9.84/10
```

El único detalle que queda es el error C0304: Final newline missing.

Únicamente agregaremos una línea enter al final del código

Ejecución computeStatistics2.py después de corrección

```
C:\Users\el08a>python computeStatistics2.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC1.txt"
Error: Invalid data '405s' at line 400
Statistic | Value
-----
Count      | 399.00
Mean       | 241.9123
Median     | 239.0000
Mode        | [393.0, 170.0]
Variance   | 21139.2863
Std Dev    | 145.3936
Time Elapsed | 0.001178      s
```

Ejecución computeStatistics3.py con pylint

```
C:\Users\el08a>python -m pylint computeStatistics3.py
-----
Your code has been rated at 10.00/10
```

Ejecución Compute statistics después de correcciones

```
C:\Users\el08a>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC1.txt"
Error: Invalid data '405s' at line 400
Statistic | Value
-----
Count      | 399.00
Mean       | 241.9123
Median     | 239.0000
Mode        | [393.0, 170.0]
Variance   | 21139.2863
Std Dev    | 145.3936
Time Elapsed | 0.001010      s
```

Ejecución TC2

```
C:\Users\el08a\A01796698_A4.2>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC2.txt"
Statistic | Value
-----
Count      | 1977.00
Mean       | 250.7840
Median     | 247.0000
Mode        | 230.0
Variance   | 20795.8880
Std Dev    | 144.2078
Time Elapsed | 0.002642      s
```

Ejecución TC3

```
C:\Users\el08a\A01796698_A4.2>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC3.txt"
Statistic | Value
-----
Count     | 12624.00
Mean      | 249.7762
Median    | 249.0000
Mode      | 94.0
Variance  | 21118.9504
Std Dev   | 145.3236
Time Elapsed | 0.014630      s
```

Ejecución TC4

```
C:\Users\el08a\A01796698_A4.2>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC4.txt"
Statistic | Value
-----
Count     | 12624.00
Mean      | 149.0027
Median    | 147.7500
Mode      | 123.75
Variance  | 17009.2682
Std Dev   | 130.4196
Time Elapsed | 0.011641      s
```

Ejecución TC5

```
C:\Users\el08a\A01796698_A4.2>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC5.txt"
Error: Invalid data 'ABA' at line 5
Error: Invalid data '23,45' at line 155
Error: Invalid data '11;54' at line 232
Error: Invalid data 'll' at line 239
Statistic | Value
-----
Count     | 307.00
Mean      | 241.4951
Median    | 241.0000
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, 17
0.0, 166.0, 96.0, 268.0]
Variance  | 21229.1724
Std Dev   | 145.7023
Time Elapsed | 0.001010      s
```

Ejecución TC6

```
C:\Users\el08a\A01796698_A4.2>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC6.txt"
Statistic | Value
-----
Count     | 3000.00
Mean      | 187906599279774728192.0000
Median    | 188008049965542998016.0000
Mode      | [1.27620004531949e+20, 2.05822098385834e+20, 1.05867278696031e+20, 3.57674511627146e+20, 1.09807752334
```

```
7e+19]
Variance | 11534749616069338239761958751339425038336.0000
Std Dev   | 107399951657667608576.0000
Time Elapsed | 0.003518      s
```

Ejecución TC7

```
C:\Users\el08a\A01796698_A4.2>python computeStatistics3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P1\TC7.txt"
Error: Invalid data 'ABBA' at line 183
Error: Invalid data 'ERROR' at line 229
Statistic | Value
-----
Count     | 12767.00
Mean      | 247467395499714904064.0000
Median    | 246640973074290016256.0000
Mode      | [1.57638329490099e+20, 3.56818591009357e+20, 3.66382883876642e+20, 1.41489077048921e+20, 8.73148851188
```

```
2464772e+19, 3.22398125047205e+20]
Variance      | 20912431153806321107417444778947884613632.0000
Std Dev       | 144611310601233121280.0000
Time Elapsed  | 0.014607           s
```

Primera ejecución: problema 2 convertNumbers.py

```
C:\Users\el08a>python convertNumbers.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P2\TC2.txt"
Number      | Binary           | Hexadecimal
-----|-----|-----
7116776    | 110110010010111101000 | 6C97E8
1666340    | 110010110110100100 | 196D24
8886983    | 100001111001101011000111 | 879AC7
839365    | 1100110011101000101 | CCEC5

6735760    | 11001101100011110010000 | 66C790
8895858    | 100001111011110101110010 | 87BD72
4238091    | 10000001010101100001011 | 40AB0B
7093069    | 11011000011101101001101 | 6C3B4D
39         | 100111               | 27

Execution Time: 0.012300 seconds
```

Ejecución convertNumbers.py con pylint

```
C:\Users\el08a>python -m pylint convertNumbers.py
*****
Module convertNumbers
convertNumbers.py:75:0: C0303: Trailing whitespace (trailing-whitespace)
convertNumbers.py:86:0: C0304: Final newline missing (missing-final-newline)
convertNumbers.py:39:0: R0914: Too many local variables (19/15) (too-many-locals)

-----
Your code has been rated at 9.50/10
```

Pylint nos está señalando tres detalles específicos

- **C0303 (Trailing whitespace):** Existe un espacio extra al final de la línea 75.
- **C0304 (Final newline missing):** Al igual que el anterior, falta un "Enter" al final del archivo.
- **R0914 (Too many local variables):** La función `main` tiene 19 variables y Pylint permite 15 por defecto. Vamos a agrupar algunas para simplificar.

Ejecución convertNumbers2.py con pylint

```
C:\Users\el08a>python -m pylint convertNumbers2.py
*****
Module convertNumbers2
convertNumbers2.py:80:0: C0304: Final newline missing (missing-final-newline)

-----
Your code has been rated at 9.82/10
```

Ejecución convertNumbers2.py después de corrección

```
C:\Users\el08a>python convertNumbers2.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P2\TC2.txt"
Number | Binary | Hexadecimal
-----|-----|-----
7116776 | 1101100100101111101000 | 6C97E8
1666340 | 110010110110100100100 | 196D24
8886983 | 100001111001101011000111 | 879AC7
839365 | 11001100111011000101 | CCEC5
924280 | 11100001101001111000 | E1A78
1026310 | 11111010100100000110 | FA906
1615293 | 110001010010110111101 | 18A5BD
1063875 | 100000011101111000011 | 103BC3
679035 | 10100101110001111011 | A5C7B
```

```
4238091 | 10000001010101100001011 | 40AB0B
7093069 | 11011000011101101001101 | 6C3B4D
39 | 100111 | 27

Execution Time: 0.001000 seconds
```

Ejecución convertNumbers3.py con pylint

```
C:\Users\el08a>python -m pylint convertNumbers3.py
-----
Your code has been rated at 10.00/10
```

Ejecución convertNumbers3.py después de corrección

```
C:\Users\el08a>python convertNumbers3.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P2\TC2.txt"
Number | Binary | Hexadecimal
-----|-----|-----
7116776 | 1101100100101111101000 | 6C97E8
1666340 | 110010110110100100100 | 196D24
-----|-----|-----
39 | 11011000011101101001101 | 6C3B4D
39 | 100111 | 27

Execution Time: 0.000997 seconds
```

Ejecución TC1

```
2250854 | 1000100101100001100110 | 225866
Execution Time: 0.015888 seconds
```

Ejecución TC3

```
4 | 100 | 4
Execution Time: 0.013544 seconds
```

Ejecución TC4

```
-6 | -110 | -6
Execution Time: 0.011521 seconds
```

Primera ejecución: problema 3 wordCount.py

```
C:\Users\el08a>python wordCount.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P3\TC3.txt"
Word           | Frequency
-----
acquisition   | 1

zdnnet         | 1
Execution Time: 0.012800 seconds
```

Ejecución wordCount.py con pylint

```
C:\Users\el08a>python -m pylint wordCount.py
*****
Module wordCount
wordCount.py:78:0: C0304: Final newline missing (missing-final-newline)

-----
Your code has been rated at 9.79/10
```

Ejecución wordCount2.py con pylint

```
C:\Users\el08a>python -m pylint wordCount2.py
-----
Your code has been rated at 10.00/10
```

Ejecución wordCount2.py después de corrección

```
C:\Users\el08a>python wordCount2.py "C:\Users\el08a\Downloads\A4.2 Archivos de Apoyo - 31-01-25\P3\TC3.txt"
Word           | Frequency
-----
acquisition   | 1

z
zdnnet         | 1
Execution Time: 0.000000 seconds
```

Ejecución TC1

```
worse          | 1
Execution Time: 0.011197 seconds
```

Ejecución TC2

```
wood           | 3
Execution Time: 0.012169 seconds
```

Ejecución TC4

```
zimbabwe          | 2
Execution Time: 0.032337 seconds
```

Ejecución TC5

```
zen              | 1
Execution Time: 0.019535 seconds
```