



**INSTITUTO TECNOLÓGICO Y DE ESTUDIOS SUPERIORES DE MONTERREY**

**Pruebas de software y aseguramiento de la calidad**

**Tarea:**

**“4.2 Ejercicio de programación 1”**

Angel Antonio Espinosa Lomeli

A01796698

**08 de Febrero del 2026**

## 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_A4.2python 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	[1.276220004531949e+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\1\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         | 2466449973074290016256.0000
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 | 11011001001011111101000 | 6C97E8
1666340 | 110010110110100100100 | 196D24
8886983 | 100001111001101011000111 | 879AC7
839365 | 11001100111011000101 | 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     | 11011001001011111101000 | 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     | 11011001001011111101000 | 6C97E8
1666340     | 110010110110100100100   | 196D24
```

```
7093069     | 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 | 1
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
```