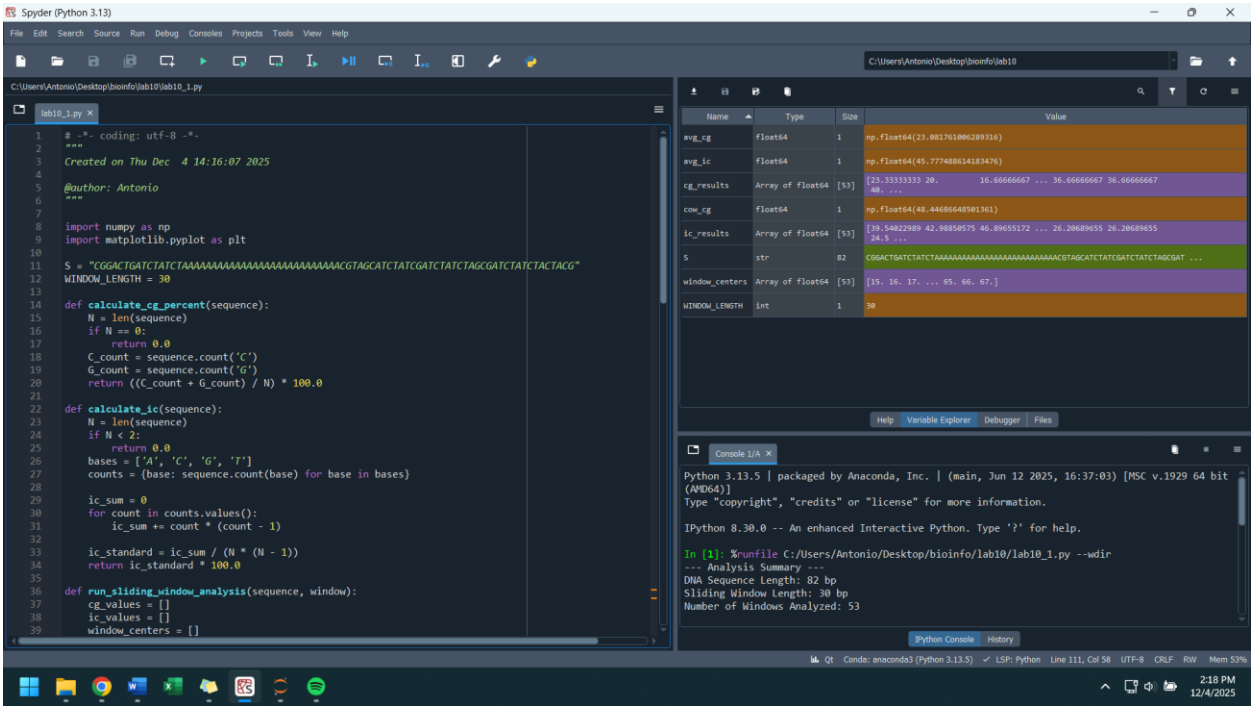
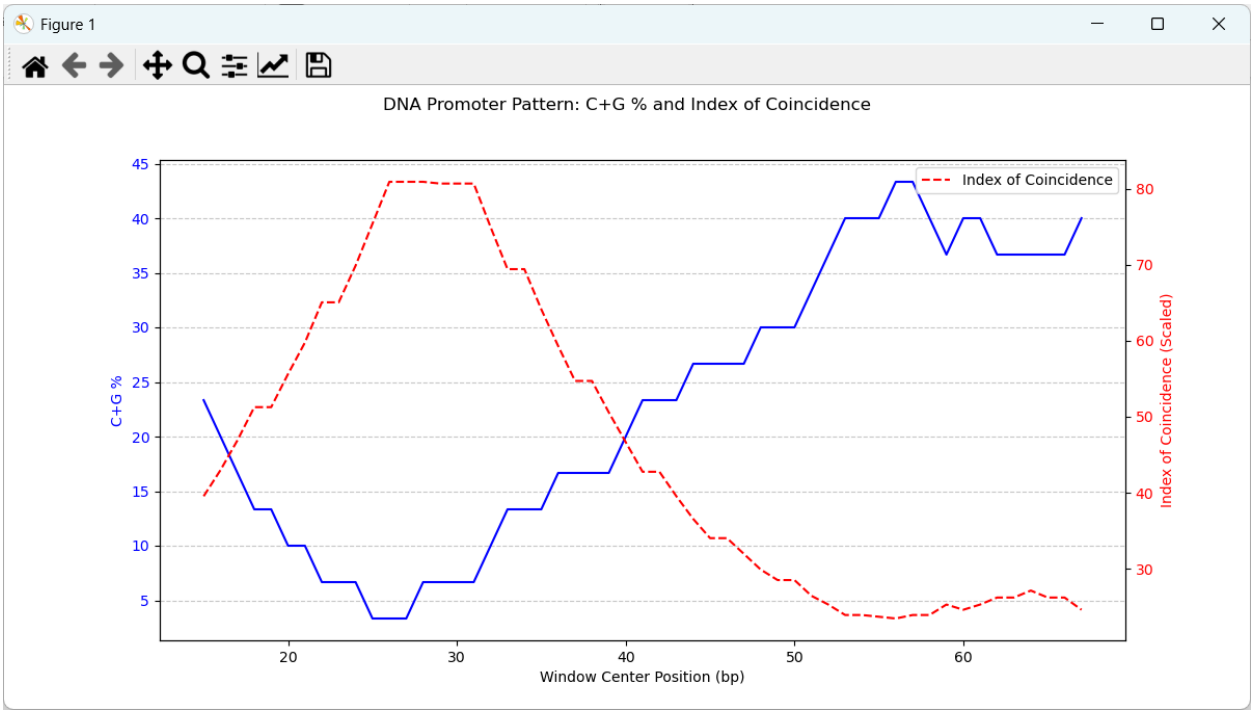
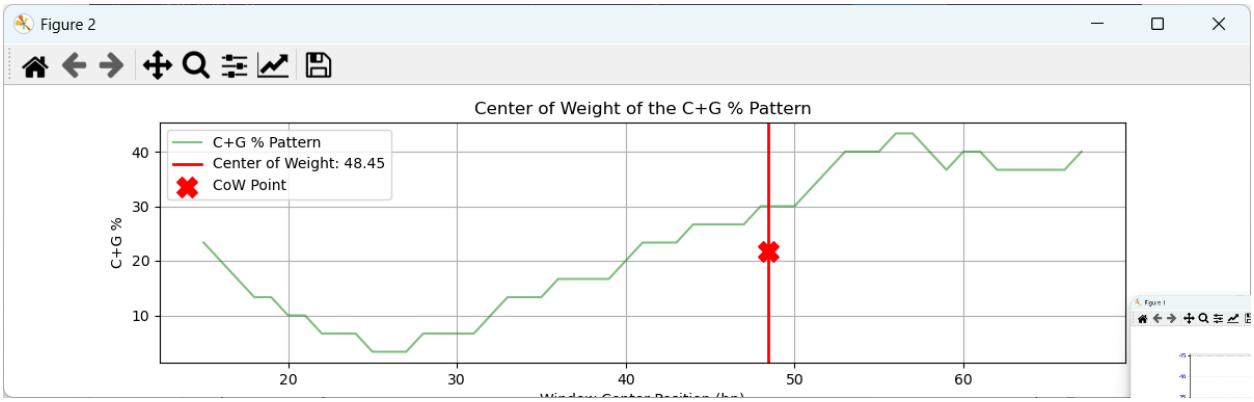
LABORATORY REPORT #10

GEORGESCU Mihai-Antonio, 1242EA
Bioinformatics, 4th year 1st semester, 2025-2026

lab10_1.py





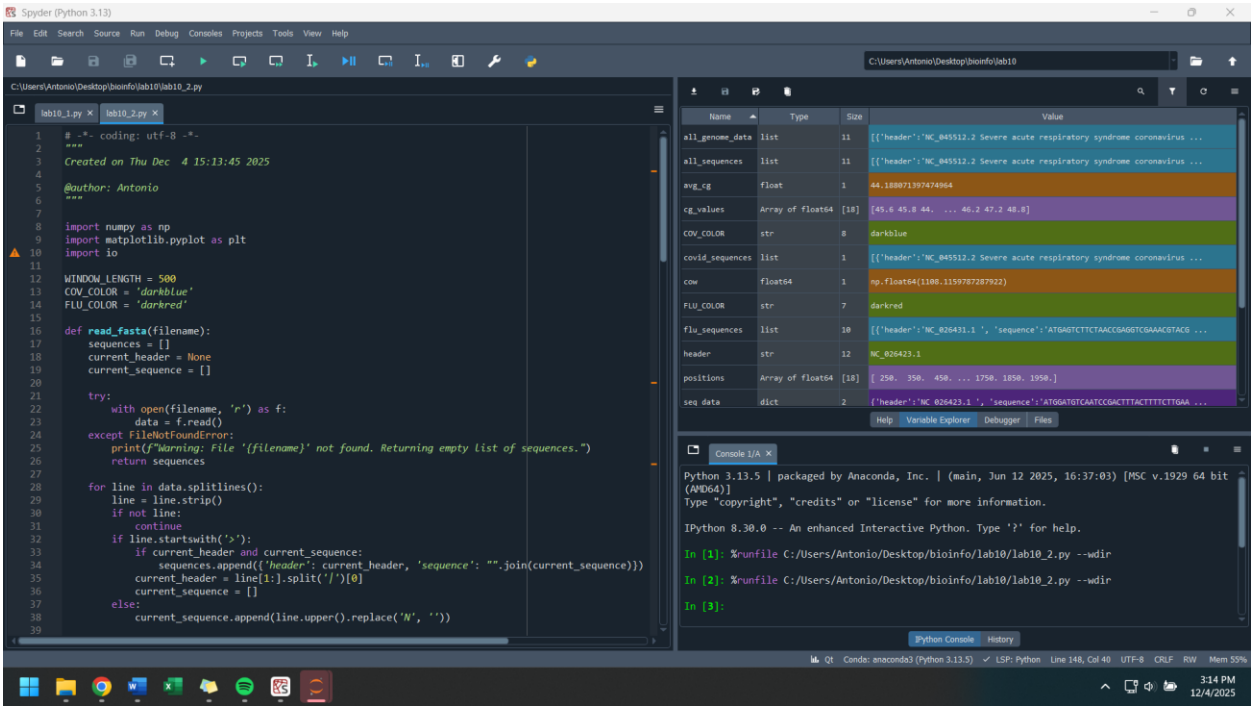



```
--- Analysis Summary ---
DNA Sequence Length: 82 bp
Sliding Window Length: 30 bp
Number of Windows Analyzed: 53

--- Required Test Values (Overall Average of Window Results) ---
Calculated C+G % Average: 23.08
Required C+G % Target: 29.27
Calculated Kappa Index of Coincidence Average (Standard IC x 100): 45.78
Required IC Target: 27.53

--- Center of Weight Calculation ---
Center of Weight of the C+G % Pattern: 48.45 bp
```

lab10_2.py



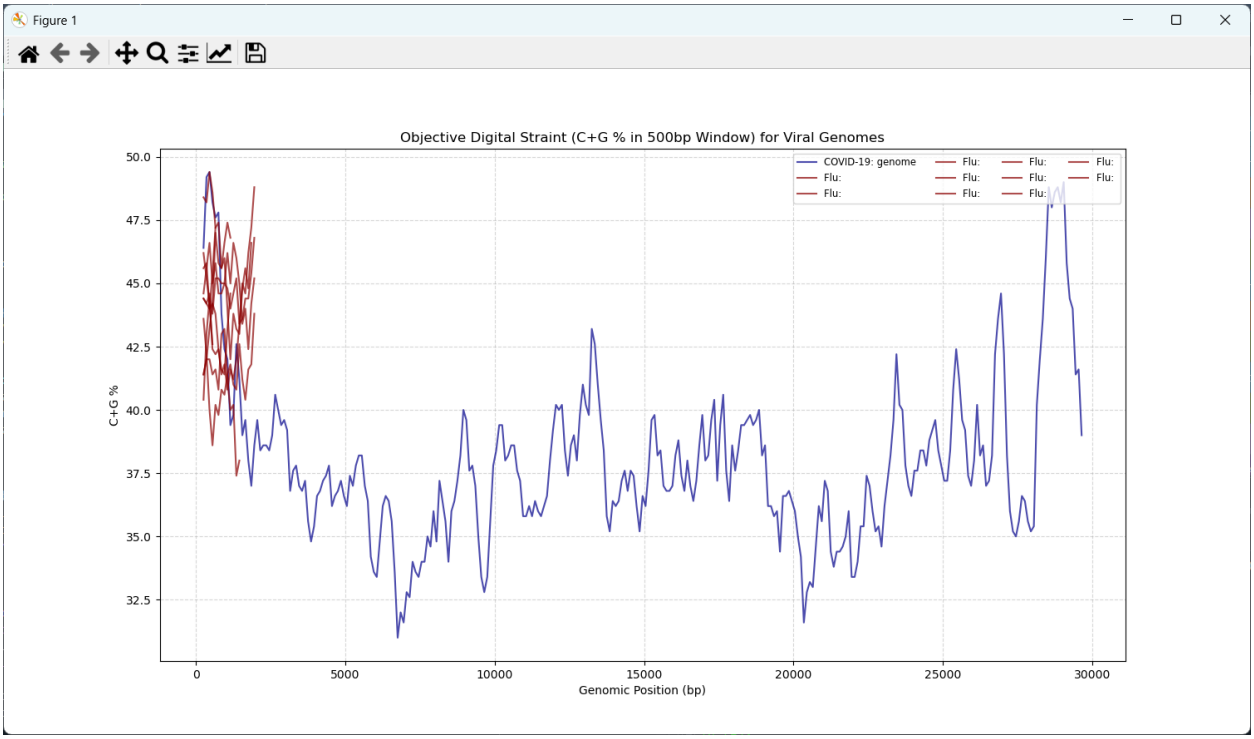


Figure 1
Objective Digital Straint (C+G % in 500bp Window) for Viral Genomes
COVID-19: genome
Flu:
C+G %
Genomic Position (bp)
50.0
47.5
45.0
42.5
40.0
37.5
35.0
32.5
0
5000
10000
15000
20000
25000
30000

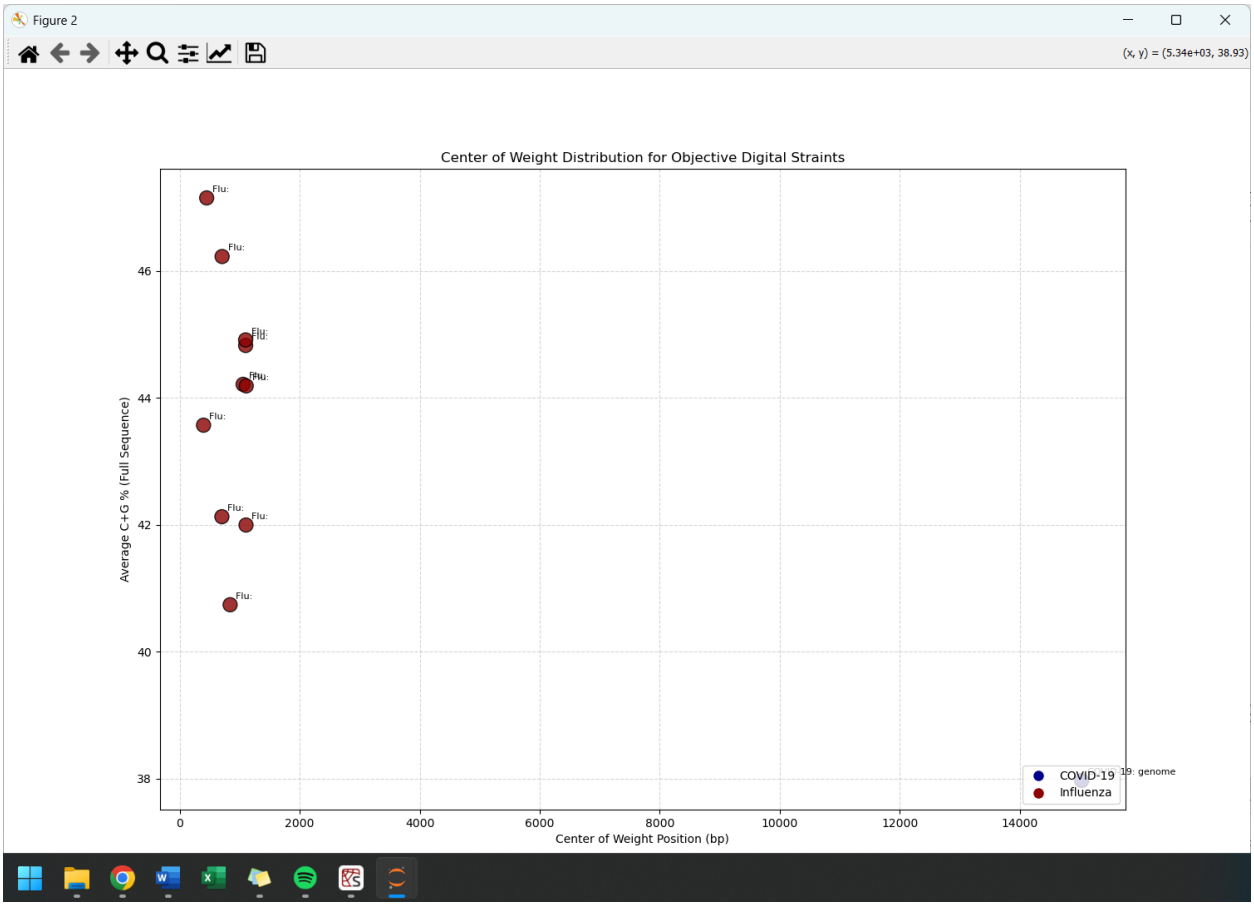


Figure 2
(x, y) = (5.34e+03, 38.93)
Center of Weight Distribution for Objective Digital Straints
Flu:
Average C+G % (Full Sequence)
Center of Weight Position (bp)
COVID-19
Influenza
46
44
42
40
38
0
2000
4000
6000
8000
10000
12000
14000