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Grouped with:

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ENGG 151.01-A

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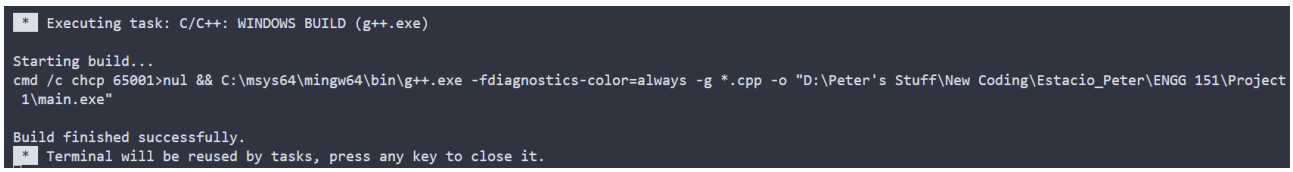
Progress Report 1 for Project 1: Normalized Crosscorrelation

As of January 28, 2026, initial progress has been made with Niño Aloysius V. De Mesa and Christian James S. Madariaga to implement basic crosscorrelation using the previous spreadsheet homework as an example. Specifically, a C++ program has been developed to read two signal files, `xdata` and `ydata`, process the raw signal values within them, and obtain the crosscorrelation value at `l = 0`. The two signal files were read using the `fstream` library, and the raw signal values are stored as double-precision numbers in a vector using the `vector` library. Once both signal files have been processed, the program iterates through both signals taking the product of the signal values at that relative time. Should the iterator `i` exceed the finite duration of either signal, the program automatically equates the corresponding signal value to 0. Through each iteration, the resulting product is added to a double-precision variable `result` until the iterator has exceeded the finite duration of both signals. The value of `result`, representing the sum of these products, is then finally displayed in the console. A screenshot of this result is shown below.

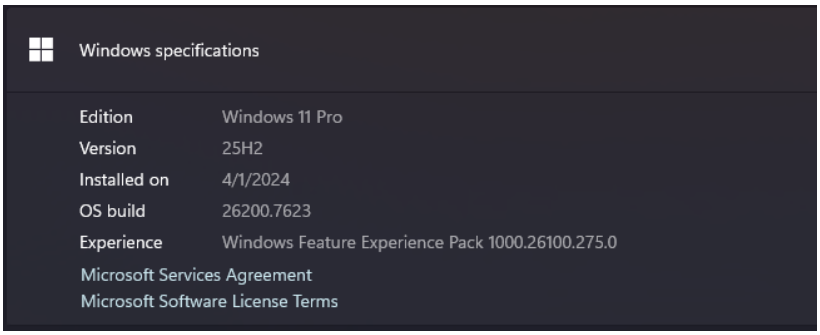
```
PS D:\Peter's Stuff\New Coding\Estacio_Peter\ENGG 151\Project 1> ./main.exe
r_xy(0) = 7
PS D:\Peter's Stuff\New Coding\Estacio_Peter\ENGG 151\Project 1>
```

sample screenshot – executable main.exe run and resulting value of `r_xy(0)`

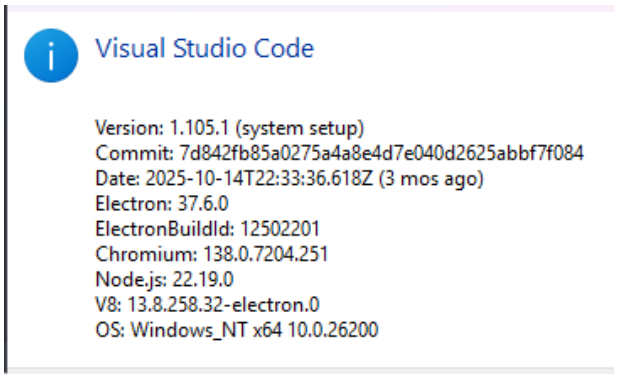


sample screenshot – compilation on Visual Studio Code

compiler version – gcc version 15.2.0 (Rev8, Built by MSYS2 project)



operating system - Windows 11 Pro, 25H2, build 26200.7623



IDE – Visual Studio Code ver 1.105.1