**Spike:** Spike 24

**Title:** Performance Measurement

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**Goals / deliverables:**

The goal is to create a code that I could share with someone so that they would know how to measure code performance directly.

Besides this report, what else was created?

For example: UML diagram, code, reports

* 2 C++ codes (Downloaded from the class GitHub)
* Excel Sheets with various charts.

**Technologies, Tools, and Resources used:**

* Visual Studio Community 2022
* Microsoft Excel.

**Tasks undertaken:**

* Download and install Visual Studio
* Download the sample code provided from the class’s GitHub.
* Compile ‘performance\_test.cpp’ capture the results of each function and measure them in a chart.
* Modify ‘generate\_data.cpp’ properties to generate 100, 1k and 10k posts.
* Compile ‘performance\_test.cpp’ capture the results of each function and plot them in a chart.
* Compile ‘performance\_test.cpp’ multiple times, capture the results of each function and insert them in a chart.
* Modify the properties of VS community (C/C++ -> Optimization) and compile ‘performance\_test.cpp’ with all the different kinds of optimization (/Od, /O1, /02 & /Ox).
* Capture and document the results on a chart.
* Use VS Community ‘Performance Profiler’ in ‘Instrumentation’ mode to profile the code.

**What we found out:**

I found out how the number of posts make the run process take more time, and although in this spike it didn’t took much time, with higher numbers it may take more minutes or even hours. I also found out that the “Inside-out loop” is the one that gave the best results of the 3 functions. Lastly by using the ‘Performance Profiler’ twice I noticed that with 10k posts the code takes between 8.5 and 9.1 seconds to compile, and something that only happened once on the second use is a fall on the CPU usage, put it immediately went bac to normal and didn’t affect the outcome.

A graph of different colored lines

Description automatically generatedA graph of a data analysis

Description automatically generated with medium confidenceA graph of a diagram

Description automatically generated with medium confidence A graph of a number of different colored bars

Description automatically generated with medium confidence

A screenshot of a computer

Description automatically generated

A screenshot of a computer

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