

A practical guide for effective programming in cpp

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Outline

Generally, we want a program to be more ...

- Safer (Memory Safety)
- Faster (More Computation Done in period time.)
- Smaller (Less Build Size)

Safer

- Profiling
- Static & Dynamic Check
- Testing

Profiler

In [software engineering](#), [profiling](#) ("program profiling", "software profiling") is a form of [dynamic program analysis](#) that [measures](#), for example, the [space \(memory\) or time complexity of a program](#), the [usage of particular instructions](#), or the [frequency and duration of function calls](#). - Wikipedia

Profiler Tools (Unix Based)

Some profiling tools that I will introduce.

- gprof
- valgrind
- orbit

Profiler Tools (Unix Based)

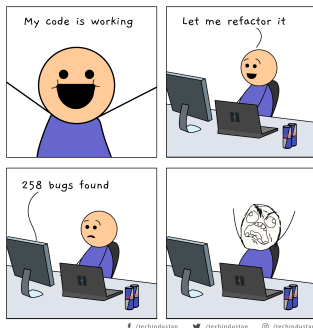
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Static & Dynamic Check

- clang-static-analyzer
- cppcheck
- clang-tidy
- gcc sanitizers



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Testing

Faster

Compiler

Memory

C++ Features

Smaller