

BLAKE vs SHA - Hash Function Benchmarking

Group G

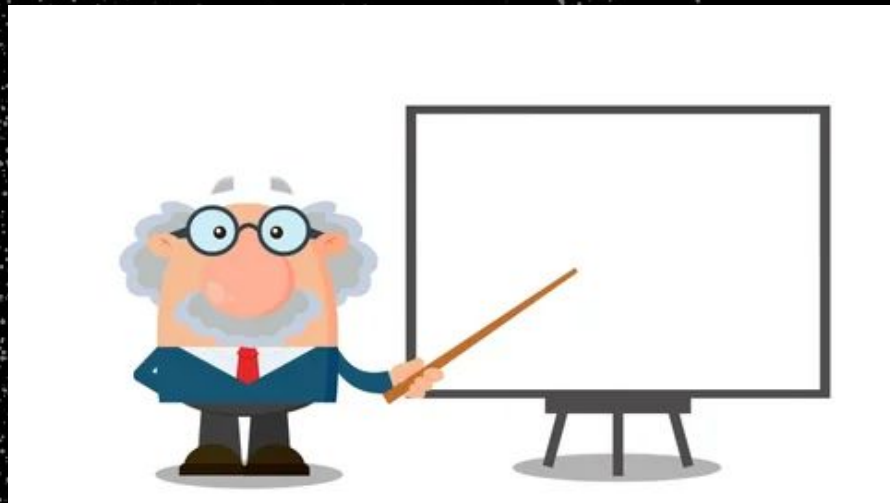
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Project Vision

- Goal: Compare BLAKE2/BLAKE3 with SHA-2/SHA-3
- Why: BLAKE = faster, same security
- Benchmark throughput, latency & efficiency
- Runs across CPUs & message sizes
- Impact: Data-driven hash choice guide



Deliverables

Deliverables:

- C++ benchmark suite + plots + report
Demo video & open data

Toolchain:

- C++20 / CMake + OpenSSL + libsodium + BLAKE3
C API
- Python (pandas, matplotlib) for analysis

Hardware:

- x86-64 (Intel/Ryzen), optional ARM Pi 5

Method:

- Fixed CPU freq, warm-ups, multi-trial CIs



Roles

Roles

- Team Lead — Oversees progress, integration & deadlines
- Researcher — Runs benchmarks, analyzes BLAKE vs SHA data
- Writer — Creates final report, visuals & presentation



Plan

- Oct 29 — Finalize scope & APIs
- Nov 3 — Vision slides + pitch
- Nov 7 — First benchmark results
- Nov 14 — Cross-arch tests complete
- Nov 30 — Draft report & demo video
- Dec 8 — Final submission (deadline)



References

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Thank You!
