negative quadratic form on $(1, 0, -1)$. The source's matrix hint determines the walk interpretation used in this solution.

Comparative cost and preferred method

With e nonzero adjacency entries, applying K as $W(Wc)$ costs $O(e)$ and uses the sparse adjacency representation, whereas storing a dense K uses $O(|V|^2)$ entries. The saving is output-sensitive: constructing all entries of K still requires writing them. The proof is a universal factorization certificate, not a sample eigenvalue check.

Source qualification

The word path is retained from the source, with the necessary walk convention explicitly resolved.