Chains of idempotents and bounded generation of SL_2

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We describe interesting connections between association chains of idempotents and bounded generation of SL_2 by elementary matrices. This enables us to identify many classes of matrix rings that have universal bounds on the length of association chains. Consequently, many matrix rings have the property that every regular element is special clean. We also improve the usual criterion for checking perspectivity via association chains, and pose some open problems.

References

[1] Dinesh Khurana, Xavier Mary, and Pace P. Nielsen: Idempotent chains and bounded generation of SL_2. J. Pure Appl. Algebra 227(12):107427 (14 pages), 2023.