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Samuel Birns*, Department of Mathematics, University of Hawaii at Manoa, 2565 McCarthy Mall, Honolulu, HI 96822. *Formalization of Levenshtein Codes.*

We present work done on formalizing the Levenshtein codes in the Lean theorem prover. Namely, we show the formalization of the definition of Levenshtein codes and the proof that they form a perfect code capable of correcting single deletions. Additionally, we discuss current progress and challenges related to current and future projects, specifically the formalization of Levenshtein's original proofs on the asymptotic behavior of the maximum cardinality of Levenshtein codes. Finally, we connect this work to existing formalization projects in coding theory. (Received November 30, 2018)