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Polynomial realizations of Hopf algebras.

We formalize the theory of polynomial realizations of Hopf algebras. This gives a framework in which many combinatorial Hopf algebras easily arise from elementary combinatorial ingredients. As an example, we construct a family of Hopf algebras with basis indexed by generalized parking functions. We will finally see how polynomial realizations may be naturally lifted within the theory of bimonoids. (Received August 10, 2015)