We discuss properties of intersection algebras, which are defined as $\mathcal{B}_R(I, J) = \bigoplus_{r,s \in \mathbb{N}} I^r \cap J^s$, for a commutative Noetherian ring $R$ with respect to two ideals $I, J$. When $I$ and $J$ are monomial ideals in a polynomial ring $R$ over a field, explicit formulæ for certain invariants of $\mathcal{B}_R(I, J)$ may be obtained. However, there are limitations to the results attainable by purely mathematical means. We present an automation of some calculations, thus reducing tedious time-consuming computations to a matter of seconds. This is joint work with G. Johnson. (Received January 14, 2019)