Let $R$ be a commutative Noetherian ring. We say that $R$ has the unique decomposition into ideals (UDI) property if each finite direct sum of ideals of $R$ is uniquely decomposable as a direct sum of indecomposable $R$-ideal. For integral domain $R$, Goeters and Olbering showed that $R$ has UDI if and only if $R$ has at most one nonprincipal maximal ideal and has UDI locally at that nonprincipal maximal ideal (if it exists). For local domain $R$, they gave necessary and sufficient condition that $R$ has UDI in terms of its integral closure. Their results were extended to reduced (commutative Noetherian) rings by Ay and Klingler. We show that if $R$ is any commutative Noetherian ring, then $R$ has UDI if and only if $R$ has at most one nonprincipal maximal ideal and has UDI locally at that nonprincipal maximal ideal (if it exists). We also give an example of a ring without UDI but which has UDI modulo its nilradical, so that the UDI property does not lift modulo the nilradical. (Received September 16, 2018)