well-founded relation

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A binary relation R on a `http://planetmath.org/Class`class X is *well-founded* if and only if

- each nonempty subclass of X contains an R-minimal element and,

- for each $x \in X$, $\{y \mid y\,R\,x\}$ is a set.

The notion of a well-founded relation is a generalization of that of a well-ordering relation: proof by induction and definition by recursion may be carried out over well-founded relations.