Ordinals in Type Theory Notes

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1 Some important definitions

Definition 1.1. A element x of a set A ordered by the relationship $\leq$ is called the least element if it occurs that $(\forall y \in A)x \leq y$

Definition 1.2. A set is well-ordered by a relationship if the relationship is antisymmetric, transitive, has connexity and, for every non-empty subset there is a least element in the set.

Definition 1.3. A set A is transitive if it occurs that $x \in A$ and $y \in x$ then $y \in A$

2 Ordinals

In literature it can be found several definitions for ordinals and the way to construct them. The one used here is:

Definition 2.1. A set α is an ordinal number iff

- The set is transitive
- The set is well-ordered by $\in_A$