A strong ordering data type is based on a strong ordering relation P:
for any a,b,c ∈ A,

    1. P(a,a)=0,

    2. P(a,b)∨P(b,a), and

    3. P(a,b)&P(b,c) ⟹ P(a,c).

    The difference between strong ordering and weak ordering can be illustrated with two relations: "≥" and ">". For instance, a≥a is true, but a>a is false, and P(a,a)=0. It is proved in [Pfanzagl, 1971] that for strong and weak ordering data types <A;P>, A can be coded by numbers with preservation of properties 1-3 if A is countable.