(prefix order) Give axioms to define the prefix partial order on strings. String \( S \) comes before string \( T \) in this order if and only if \( S \) is an initial segment of \( T \).

§ Use \( \preceq \) for the prefix partial order. It can be defined as

\[
\begin{align*}
\text{nil} & \preceq S \\
S \preceq \text{nil} & \equiv S=\text{nil} \\
i;S \preceq j;T & \equiv i=j \land S\preceq T
\end{align*}
\]

where \( S \) and \( T \) are strings, and \( i \) and \( j \) are items. After we meet quantification it can be defined as

\[
S\preceq T \equiv \exists U: \forall x; S;U = T
\]

where \( X \) is the alphabet of symbols.