Define language \( lang \) by the fixed-point construction axiom
\[
lang = \text{nil}, "\text{"}; \text{lang}; \text{"}"
\]
and associated fixed-point induction axiom.

(a) Informally, what is the language described?
§ The language of matching brackets.

(b) Write an equivalent, nonrecursive definition of the language. Hint: start with § and use a predicate that counts occurrences of characters in a text.
§ Define
\[
\begin{align*}
brackets &= "\text{"}, \text{"}\) \\
strings &= \ast \text{brackets} \\
occ &= \langle c:\text{brackets} \to \langle s:\text{strings} \to \varnothing \, \ldots \, \varnothing, s=c \rangle \rangle
\end{align*}
\]
Then the language is
\[
\langle s:\text{strings} \to \text{occ} \, \langle \, s = \text{occ} \, \text{"}\rangle \, s \land \forall i:0,\ldots,\text{occ} \, \langle \, \text{"} \rangle \rangle
\]