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Herbrand structure

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For a language  $\mathcal{L}$ , define the *Herbrand universe* to be the set of closed terms (alternatively ground terms) of  $L$ .

A structure  $\mathfrak{M}$  for  $\mathcal{L}$  is a *Herbrand structure* if the domain of  $\mathfrak{M}$  is the Herbrand universe of  $\mathcal{L}$ . This fixes the domain of  $\mathfrak{M}$ , and so each Herbrand structure can be identified with its interpretation, leading to the alternative nomenclature of *Herbrand interpretation*.

A *Herbrand model* of a theory  $T$  is a Herbrand structure which is a model of  $T$ .