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Kan extensions for double categories

Two dimensional category theory is category theory based on Cat, the category of categories. One of the insights provided by double category theory is that Cat should be considered as a double category with functors and profunctors as arrows. Thus it is important to understand its completeness properties. Of course the whole story of limits must include Kan extensions, which are parametrized limits. We show that companions and conjoints (kinds of adjoints between horizontal and vertical arrows) are special cases of Kan extensions, and that these together with limits are sufficient for constructing Kan extensions along double functors satisfying a double Conduche condition. This is the best that can be expected as the right adjoint for "pulling back" along a functor appears as a special case.