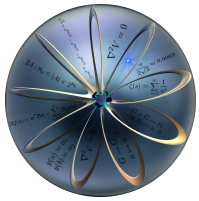

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$Hilb$ category of Hilbert spaces

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Defines	isomorphisms in $Hilb$
Defines	Hilbert space morphisms

Definition 0.1. The *category $\mathcal{H}ilb_f$ of finite-dimensional Hilbert spaces* is defined as the category whose objects are all finite-dimensional Hilbert spaces $\mathcal{H}_f$, and whose morphisms are linear maps between $\mathcal{H}_f$ spaces. The *isomorphisms* in $\mathcal{H}ilb_f$ are all isometric isomorphisms.

Furthermore, one also has the following, general definition for any Hilbert space.

Definition 0.2. The *category $\mathcal{H}ilb$ of Hilbert spaces* is defined as the category whose objects are all Hilbert spaces $\mathcal{H}$, and whose morphisms are linear maps between $\mathcal{H}$ spaces. The *isomorphisms* in $\mathcal{H}ilb$ are all isometric isomorphisms.

Remark 0.1. The category of $\mathcal{H}ilb$ Hilbert spaces has direct sums and is a Cartesian category.