

The mkessler-categories package

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Abstract

This is a ready-to-use package providing symbols of mathematical categories with automatic indexing.
It is certainly plausible that you prefer to name your categories slightly differently than the author.

1 General notice

This package is based on the mkessler-symbindex package. We thus use `imakeindex` to generate the index file.

2 Functionality

<code>\category</code>	<code>\category{<category>}</code>
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Makes the given argument `<category>` behave like a math operator and prints its name in bold.

This is just to ensure a unified style for printing categories, if you don't like it, redefine this macro.

<code>\DeclareCategory</code>	<code>\DeclareCategory[<key=value list>]{<category>}</code>
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Has the same syntax as `\DeclareSymbol` from the mkessler-symbindex package, but adds the key `group = categories`.

<code>\DeclareSimpleCategory</code>	<code>\DeclareSimpleCategory[<key=value list>]{<category>}[<description>]</code>
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Declares a “simple” category, i.e. the category `\<category>` is declared and will expand to “`\category{<category>}`” when expanded.

The optional `<description>` is shown in the index when present.

<code>\MakeCategoryIndex</code>	Prints the index of categories.
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3 Language integration

This package uses `translator` to translate the package descriptions. Currently, only English and German are supported.

4 Default categories

The package also provides default categories. These are shown in [Table 1](#).

You can view their appearance in the index and their descriptions in the index of this documentation. Unfortunately, the index is not (yet) compatible with the `13doc` class which is used for this documentation, so ignore everything before the “@” characters.

Macro	Result
<code>\Top</code>	Top
<code>\hTop</code>	hTop
<code>\Set</code>	Set
<code>\CHaus</code>	CHaus
<code>\Grp</code>	Grp
<code>\Ab</code>	Ab
<code>\CRing</code>	CRing
<code>\Ring</code>	Ring
<code>\Vect</code>	Vect
<code>\Cat</code>	Cat
<code>\Mod</code>	Mod
<code>\Alg</code>	Alg
<code>\Field</code>	Field
<code>\AffVar</code>	AffVar
<code>\Sch</code>	Sch
<code>\GrAb</code>	GrAb
<code>\OrdCat</code>	Δ

Table 1: caption

Index

A		F	
<code>Ab@Ab</code> , Abelian groups and homomorphisms	2	<code>\Field</code>	2
<code>\AffVar</code>	2	<code>Field@Field</code> , Fields and field extensions	2
<code>AffVar@AffVar_k</code> , Affine Varieties over k	2	G	
<code>\Alg</code>	2	<code>\GrAb</code>	2
<code>Alg@Alg_k</code> , k -algebras and homomorphisms	2	<code>GrAb@GrAb</code> , Graded abelian groups and homomorphisms	2
C		<code>Grp@Grp</code> , Groups and homomorphisms	2
<code>\Cat</code>	2	H	
<code>Cat@Cat</code> , Small categories and functors	2	<code>hTop@hTop</code> , Spaces and homotopy classes of continuous maps . . .	2
<code>CHaus@CHaus</code> , Compact hausdorff spaces and continuous maps . .	2	M	
<code>CRing@CRing</code> , Commutative rings and homomorphisms	2	<code>\Mod</code>	2

Mod@**Mod**_{*R*}, Left *R*-modules and
homomorphisms 2

O

\OrdCat 2
Ordinal@**Δ**, Finite ordinal numbers and
order-preserving maps 2

R

\Ring 2
Ring@**Ring**, Rings and
homomorphisms 2

S

\Sch 2
Sch@**Sch**, Schemes and
homomorphisms 2
Set@**Set**, Sets and functions 2

T

Top@**Top**, spaces and continuous
maps 2

V

\Vect 2
Vect@**Vect**_{*k*}, *k*-vector spaces and linear
maps 2