1 Boxes

1.1 HBoxes

HBox:

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⇒ ⟨`to`⟩ ≠ ⟨`width`⟩; spaces behave like a weaker `\hfil`; subtle spacing difference between ⟨`to`⟩ and ⟨`width`⟩ if <⟨`actual width`⟩; box content aligned at the bottom

In Paragraphs:

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1.2 VBoxes

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VBoxes:

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\hbox{

$\vbox$ in H

\vbox{
Box Content
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⇒ ⟨to⟩ ≠ ⟨height⟩; top-aligned, but paragraphs have \vfil above.

1.3 VTops

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VTop with To and Height and Depth:

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Para in \vtop in Para

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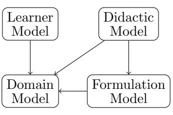

Figure 1: Test

VTops:

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id. Sed facilisis eget enim in varius.
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\hbox{ \vtop{
Box Content
}

$`\vtop`$ in H

\hbox{\vtop{ }
Box Content
}

`\vtop` with Depth/Height in H

\vtop{ \vtop{
Box Content Box Content
} }

\hbox{ \vtop{ }
Box Content
}

1.4 VCenter

$`\vcenter`$ in H

\vcenter{
\hbox{Box Content}
}

$`\vcenter`$

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⇒ `\vcenter` is not a box with modifiable dimensions, apparently?

Para in `\vcenter` in Para

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1.5 Interactions

`\v*` in H

\vbox{ \vtop{ \vbox{ \vtop{
Box ContentBox ContentBox ContentBox Content
} } } }

\vcenter{
\hbox{ Box Content}
}

1.6 Peskiness

TEX LATEXBla$_{\text{foo}}$Bla$_{\text{foo}}$Bla$_{\text{foo}}$Bla$_{\text{foo}}$

2 Skips, Fills and Kerns

`\hfil`, `\hfill`, `\hss`

\hbox{Foo} `\hss`
`\hss` \hbox{Foo} `\hss`
`\hss` \hbox{Foo} `\hss`
\hbox{Foo} `\hfil`
`\hss` \hbox{Foo} `\hfil`
`\hfill` \hbox{Foo} `\hss`
`\hfill` \hbox{Foo} `\hfil`
`\hfill` \hbox{Foo}

⇒ `\hfil`=`\hss`; `\hfill`>`\hfil`

`\vfil`, `\vfill`, `\vss`

\vbox{ `\vss`
Foo \vbox{
} Foo
`\vss` }
`\vss` `\vss` `\vfill`
\vbox{ \vbox{
Foo Foo
} }
`\vss` `\vfil` `\vfill`
`\vss` \vbox{
\vbox{ Foo
Foo }
\hbox{ } `\vfil` }

⇒ Analogously: `\vfil`=`\vss`; `\vfill`>`\vfil`

`\hskip`, `\mskip`, `\hkern`, `\mkern`

\hbox{`\hskip 20pt` foo `\hskip 40pt`}
\hbox{`\mskip 36mu` foo `\mskip 72mu`}
\hbox{`\kern  20pt` foo `\kern  40pt`}
\hbox{`\mkern 36mu` foo `\mkern 72mu`}

`\vskip`, `\kern`

\vbox{ \vbox{
`\vskip 20pt` `\kern 20pt`

foo foo

`\vskip 40pt` `\kern 20pt`
\hbox{} } }

Negative Skips

- `\hskip` Foo
- `\mskip` Foo
- `\vskip` \vtop{
  Foo
  }

  \vbox{
  Foo
- `\vskip` }
- ... \vbox{
  Foo\vbox{
- `\vskip` }Foo
  }
- ...

3 `\[v|h]rule`

`\hrule` in `\vbox` in `\hbox`

\vbox{
\hbox{ } }

`\hrule` in `\vbox` with height in `\hbox`

\vbox{

}

\hbox{ }

`\vrule` in `\hbox`

\hbox{ }

\hbox{ foo |foo}
|\vbox{ |
|\hbox{}|
\hbox{|} |}

`\vrule` in Para without parameters

Here |bla

Here

`\vrule` in Para

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`\hrule` in `\vbox`

\vbox{
}

4 Math

$ in Para

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius. $\alpha + \int_{t=1}^{\infty} \sum_{x=0}^{N} f(t,x)^t_x \alpha + \int_{t=1}^{\infty} \left\{ \sum_{x=0}^{N} f(t,x)^t_x \right.$ Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.

$$ in Para

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.

$$\alpha + \int_{t=1}^{\infty} \sum_{x=0}^{N} f(t,x)^t_x \alpha + \int_{t=1}^{\infty} \left\{ \sum_{x=0}^{N} f(t,x)^t_x \right.$$

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`\[...\]` in Para

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.

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$$\alpha + \int_{t=1}^{\infty} \sum_{x=0}^{N} f(t,x)^t_x \alpha + \int_{t=1}^{\infty} \left\{ \sum_{x=0}^{N} f(t,x)^t_x \right.$$

$ in V

$\alpha + \int_{t=1}^{\infty} \sum_{x=0}^{N} f(t,x)^t_x \alpha + \int_{t=1}^{\infty} \left\{ \sum_{x=0}^{N} f(t,x)^t_x \right.$

$\alpha + \int_{t=1}^{\infty} \sum_{x=0}^{N} f(t,x)^t_x \alpha + \int_{t=1}^{\infty} \left\{ \sum_{x=0}^{N} f(t,x)^t_x \right.$

`\[` in V

$$\alpha + \int_{t=1}^{\infty} \sum_{x=0}^{N} f(t,x)^t_x \alpha + \int_{t=1}^{\infty} \left\{ \sum_{x=0}^{N} f(t,x)^t_x \right.$$

Composed Symbols

$$\Longrightarrow \qquad A \perp_C B$$

Symbol classes

mathbin	$a \mathbin{x} a$
mathrel	$a \mathrel{x} a$
mathop	$a \mathop{x} a$
mathord	axa
mathpunct	$a \mathpunct{x} a$
mathinner	$a \mathinner{x} a$
mathopen	$a \mathopen{x} a$
mathclose	$a \mathclose{x} a$

$$a == b$$

$$a == b$$

$$a == b$$

`\vphantom`

$$\left\{ \right\} 2^{2^2}$$

`\scaling`

$$\max \left\{ \frac{A}{B} \right\} := \begin{cases} A & \text{if } B <: A, \\ B & \text{if } A <: B, \\ \text{undefined} & \text{otherwise.} \end{cases}$$

$$\max \left\{ \; \frac{A}{B} \; \right\} := \begin{cases} A & \text{if } B <: A, \\ B & \text{if } A <: B, \\ \text{undefined} & \text{otherwise.} \end{cases}$$

5 Other foo

anderer test foo
bla bla TEX bla bla
bla bla LATEX bla bla

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- Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.
- Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.
  - Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.
  - Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.[2]
  - Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.

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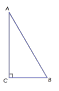

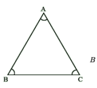

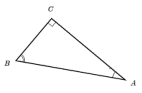

Example Box

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```
\newtcolorbox{exampleborderbox}{
 empty,
 title={Example Box},
 attach boxed title to top left,
   minipage boxed title,
 boxed title style={empty,size=minimal,toprule=0pt,top=1pt,
   left=3mm,overlay={}},
 coltitle=blue,fonttitle=\bfseries,
 parbox=false,boxsep=0pt,left=3mm,right=0mm,top=2pt,breakable,
   pad at break=0mm, before upper=\csname @totalleftmargin\endcsname0pt,
 overlay unbroken={\draw[blue,line width=2pt]
   ([xshift=-0pt]title.north west) -- ([xshift=-0pt]frame.south west); },
 overlay first={\draw[blue,line width=2pt]
   ([xshift=-0pt]title.north west) -- ([xshift=-0pt]frame.south west); },
 overlay middle={\draw[blue,line width=2pt]
   ([xshift=-0pt]frame.north west) -- ([xshift=-0pt]frame.south west); },
 overlay last={\draw[blue,line width=2pt]
   ([xshift=-0pt]frame.north west) -- ([xshift=-0pt]frame.south west); },
 outer arc=4pt%
}
```

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6 Tables

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cell{ first }	cell{ second }
cell{ third }	cell{ fourth }

Tag der mündlichen Prüfung:	18.10.2019
Vorsitzender der Promotionsorgans:	Prof. Dr.-Ing. Andreas Paul Fröba
Gutachter:	Prof. Dr. Michael Kohlhase
	assoz. Prof. Dr. Claudio Sacerdoti Coen

	Humanly	**Rational**
Thinking	"*The exciting new effort to make computers think ... machines with human-like minds*" [?]	"*The formalization of mental faculties in terms of computational models*" [?]
Acting	"*The art of creating machines that perform actions requiring intelligence when performed by people*" [?]	"*The branch of CS concerned with the automation of appropriate behavior in complex situations*" [?]

7 Other Stuff

---

[1] Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.

[2] Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque sed diam ex. Nam pretium sagittis lacus, et consequat lacus interdum in. In molestie porttitor purus, ac euismod quam cursus id. Sed facilisis eget enim in varius.