

The St Mary's Road symbol font

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1 Introduction

This is a brief guide to the St Mary's Road symbol font, a new symbol font for \TeX and \LaTeX . It is designed to live with the American Mathematical Society's fonts, contained in `amssymb.sty`.

It provides a number of new symbols, including ones for derivation of functional programming (such as Υ , \pm and \mathbb{M}), process algebra (\llbracket , \square and \downarrow), domain theory (\sqcap), linear logic ($\&$ and \wp), multisets ($\langle x \rangle$, \oplus , and $\underline{\oplus}$) and many more. It also fixes some 'features' with previous symbols (\oplus used not to be circular, now you can use \oplus instead) and adds obvious variants of others (such as \leftarrow , \Rightarrow and \Leftrightarrow). It is all wrapped up in a $\text{\LaTeX} 2_{\epsilon}$ package called `stmaryrd`, which can be used by saying:

```
\usepackage{stmaryrd}
```

This package understands a large number of options:

- `heavycircles` says that all of the circular operators such as `\oplus` and `\otimes` should by default be heavy, and that `\varoplus` and `\varotimes` should refer to the light ones.
- `only` says that only the symbols listed in the option list should be defined. For example:

```
\usepackage[only,mapsfrom,Mapsto,Mapsfrom]{stmaryrd}
```

says that only the symbols ' \leftarrow ', ' \Rightarrow ' and ' \Leftrightarrow ' should be defined, which is useful if you use a \TeX implementation with limited memory.

2 Symbols

The following operators are defined:

Υ <code>\Ydown</code>	\leftarrow <code>\Yleft</code>	\rightarrow <code>\Yright</code>
\Uparrow <code>\Yup</code>	Φ <code>\baro</code>	\parallel <code>\bbslash</code>
$\&$ <code>\binampersand</code>	\wp <code>\bindnasrepma</code>	\boxast <code>\boxast</code>
\boxbar <code>\boxbar</code>	\boxbox <code>\boxbox</code>	\boxtimes <code>\boxtimes</code>
\boxcirc <code>\boxcircle</code>	\boxdot <code>\boxdot</code>	\boxempty <code>\boxempty</code>
\boxslash <code>\boxslash</code>	$\curlyvee\downarrow$ <code>\Ycurlyveedownarrow</code>	$\curlyvee\uparrow$ <code>\Ycurlyveeuparrow</code>
\curlywedgedownarrow <code>\curlywedgedownarrow</code>	\curlywedgeuparrow <code>\curlywedgeuparrow</code>	\fatbslash <code>\fatbslash</code>
\S <code>\fatsemi</code>	\fatparallel <code>\fatparallel</code>	\interleave <code>\interleave</code>
\triangleleft <code>\leftslice</code>	\mathbb{M} <code>\merge</code>	\ominus <code>\minuso</code>
\pm <code>\moo</code>	\oplus <code>\nplus</code>	\oslash <code>\obar</code>
\square <code>\oblong</code>	\oslash <code>\obslash</code>	\bigcirc <code>\ogreaterthan</code>

\leq <code>\lessthan</code>	\vee <code>\ovee</code>	\wedge <code>\owedge</code>
\triangleright <code>\rightslice</code>	$//$ <code>\sslash</code>	\parallel <code>\talloblong</code>
\bigcirc <code>\varbigcirc</code>	\curlyvee <code>\varcurlyvee</code>	\curlywedge <code>\varcurlywedge</code>
\oplus <code>\varoast</code>	$\bar{\bigcirc}$ <code>\varobar</code>	\oslash <code>\varobslash</code>
\odot <code>\varocircle</code>	\odot <code>\varodot</code>	\bigcirc <code>\varogreaterthan</code>
\leq <code>\varolessthan</code>	\ominus <code>\varominus</code>	\oplus <code>\varoplus</code>
\oslash <code>\varoslash</code>	\otimes <code>\varotimes</code>	\vee <code>\varovee</code>
\wedge <code>\varowedge</code>	\times <code>\vartimes</code>	

The following large operators are defined:

\Box <code>\bigbox</code>	\curlyvee <code>\bigcurlyvee</code>	\curlywedge <code>\bigcurlywedge</code>
\parallel <code>\biginterleave</code>	\oplus <code>\bignplus</code>	\parallel <code>\bigparallel</code>
\sqcap <code>\bigsqcap</code>	∇ <code>\bigtriangledown</code>	\triangleup <code>\bigtriangleup</code>

The following relations are defined:

\in <code>\inplus</code>	\ni <code>\niplus</code>	\trianglelefteq <code>\ntrianglelefteqslant</code>
\rtrianglelefteq <code>\ntrianglerighteqslant</code>	\subseteq <code>\subsetplus</code>	\subseteq <code>\subsetpluseq</code>
\supseteq <code>\supsetplus</code>	\supseteq <code>\supsetpluseq</code>	\trianglelefteq <code>\trianglelefteqslant</code>
\rtrianglerighteq <code>\trianglerighteqslant</code>		

The following arrows are defined:

\Longleftarrow <code>\Longmapsfrom</code>	\Longrightarrow <code>\Longmapsto</code>	\Leftrightarrow <code>\Mapsfrom</code>
\mapsto <code>\Mapsto</code>	\leftarrowtriangle <code>\leftarrowtriangle</code>	\leftrightharpoonup <code>\leftrightharpoonup</code>
$\leftrightharpoonuptriangle$ <code>\leftrightharpoonuptriangle</code>	\lightning <code>\lightning</code>	\longmapsfrom <code>\longmapsfrom</code>
\mapsfrom <code>\mapsfrom</code>	\nearrow <code>\nnearrow</code>	\nwarrow <code>\nnwarrow</code>
\rightarrowtriangle <code>\rightarrowtriangle</code>	\rrparenthesis <code>\rrparenthesis</code>	\shortdownarrow <code>\shortdownarrow</code>
\shortleftarrow <code>\shortleftarrow</code>	\rightarrow <code>\shortrightarrow</code>	\shortuparrow <code>\shortuparrow</code>
\searrow <code>\ssearrow</code>	\swarrow <code>\sswarrow</code>	

The following delimiters are defined:

$\{$ <code>\Lbag</code>	$\}$ <code>\Rbag</code>	$\}$ <code>\lbag</code>
\llbracket <code>\llbracket</code>	\lceil <code>\llceil</code>	\lfloor <code>\llfloor</code>
\llparenthesis <code>\llparenthesis</code>	\rrbracket <code>\rrbracket</code>	\rrbracket <code>\rrbracket</code>
\rrceil <code>\rrceil</code>	\rrfloor <code>\rrfloor</code>	

Note that `\llbracket` and `\rrbracket` are ‘growing’ delimiters that can be used with `\left` and `\right`:

$$\llbracket \mathcal{P} \rrbracket \quad \llbracket \Box \mathcal{P} \rrbracket \quad \left[\bigoplus_{i \in I} P_i \right] \quad \left[\begin{array}{c} a \\ b \\ c \end{array} \right] \quad \left[\begin{array}{c} a \\ b \\ c \end{array} \right]$$

The following special characters are used in building others:

\nrightarrow <code>\Arrownot</code>	\mapsto <code>\Mapsfromchar</code>	\mapsto <code>\Mapstochar</code>
\nrightarrow <code>\arrownot</code>	\mapsto <code>\mapsfromchar</code>	

For example, if you type `\Arrownot\rightarrow` you get \nrightarrow , and if you type `\arrownot\rightarrowtriangle` you get \nrightarrowtriangle .

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