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 \texttt{amssymb.sty}.

It provides a number of new symbols, including ones for derivation of functional programming (such as $\gamma$, $\pm$ and $\triangleleft$), process algebra ($\parallel$, $\square$ and $\downarrow$), domain theory ($\mid$), linear logic ($\&$, $\otimes$ and $\otimes$), multisets ($\{x\}$, $\cup$, and $\oplus$) and many more. It also fixes some ‘features’ with previous symbols ($\oplus$ used not to be circular, now you can use $\circ$ instead) and adds obvious variants of others (such as $\leftrightarrow$, $\Rightarrow$ and $\Leftrightarrow$). It is all wrapped up in a \LaTeX{} package called \texttt{stmaryrd}, which can be used by saying:

\begin{verbatim}
\usepackage{stmaryrd}
\end{verbatim}

This package understands a large number of options:

- \texttt{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.
- \texttt{only} says that only the symbols listed in the option list should be defined. For example:

\begin{verbatim}
\usepackage[only,\texttt{mapsfrom},Mapsto,\texttt{Mapsfrom}]{stmaryrd}
\end{verbatim}

says that only the symbols $\texttt{\rightarrow}$, $\texttt{\Rightarrow}$ and $\texttt{\leftrightarrow}$ should be defined, which is useful if you use a \TeX{} implementation with limited memory.

2 Symbols

The following operators are defined:

\begin{verbatim}
\Ydown \Yup \binampersand \boxbar \boxcircle \Yleft \Yright \varoplus \varotimes \binamalg \boxdot \boxempty
\end{verbatim}
The following large operators are defined:

\[ \bigbox \quad \bigcurlyvee \quad \bigcurlywedge \quad \biginterleave \quad \bignplus \quad \bigparallel \quad \bigsqcap \quad \bigtriangledown \quad \bigtriangleup \]

The following relations are defined:

\[ \inplus \quad \niplus \quad \trianglelefteqslant \quad \trianglerighteqslant \quad \subsetplus \quad \subsetpluseq \quad \supsetplus \quad \supsetpluseq \quad \trianglelefteqslant \quad \trianglerighteqslant \]

The following arrows are defined:

\[ \Longmapsfrom \quad \Longmapsto \quad \Mapsfrom \quad \longmapsfrom \quad \mapsfrom \quad \nearrow \quad \rightarrowtriangle \quad \rrparenthesis \quad \shortrightarrow \quad \shortuparrow \quad \ssrarrow \quad \sswarrow \]

The following delimiters are defined:

\[ \leftbag \quad \rightbag \quad \llbracket \quad \llceil \quad \llfloor \quad \llparenthesis \quad \rbag \quad \rrbracket \quad \rrceil \quad \rrfloor \quad \\]

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

\[
[\mathcal{P}] \quad [\mathcal{P}]_{i \in I} \quad a \oplus b \quad a \quad b \quad c \quad \]

The following special characters are used in building others:
For example, if you type $\Arrownot\Rightarrow$ you get $\Rightarrow$, and if you type $\arrownot\rightarrowtriangle$ you get $\rightarrowtriangle$.

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