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 $\varcurlyvee$, $\underline{+}$ and $\bigcurlywedge$), process algebra ($\interleave$, $\Box$ and $\lightning$), domain theory ($\bigsqcap$), linear logic ($\binampersand$ and $\bindnasrepma$), multisets ($\Lbag x \Rbag$, $\uplus$, and $\subseteq$) and many more. It also fixes some 'features' with previous symbols ($\varoplus$ used not to be circular, now you can use $\oplus$ instead) and adds obvious variants of others (such as $\mapsfrom$, $\Mapsto$ and $\Mapsfrom$). It is all wrapped up in a LATEX 2_ε 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 '$\mapsfrom$', '$\Mapsto$' and '$\Mapsfrom$' should be defined, which is useful if you use a TEX implementation with limited memory.

2 Symbols

The following operators are defined:

$\Ydown$ \Ydown	$\Yleft$ \Yleft	$\Yright$ \Yright
$\Yup$ \Yup	$\baro$ \baro	$\bbslash$ \bbslash
$\binampersand$ \binampersand	$\bindnasrepma$ \bindnasrepma	$\boxast$ \boxast
$\boxbar$ \boxbar	$\boxbox$ \boxbox	$\boxbslash$ \boxbslash
$\boxcircle$ \boxcircle	$\boxdot$ \boxdot	$\boxempty$ \boxempty
$\boxslash$ \boxslash	$\curlyveedownarrow$ \curlyveedownarrow	$\curlyveeuparrow$ \curlyveeuparrow
$\curlywedgedownarrow$ \curlywedgedownarrow	$\curlywedgeuparrow$ \curlywedgeuparrow	$\fatbslash$ \fatbslash
$\fatsemi$ \fatsemi	$\fatslash$ \fatslash	$\interleave$ \interleave
$\leftslice$ \leftslice	$\merge$ \merge	$\minuso$ \minuso
$\moo$ \moo	$\nplus$ \nplus	$\obar$ \obar
$\oblong$ \oblong	$\obslash$ \obslash	$\ogreaterthan$ \ogreaterthan
$\olessthan$ \olessthan	$\ovee$ \ovee	$\owedge$ \owedge
$\rightslice$ \rightslice	$\sslash$ \sslash	$\talloblong$ \talloblong
$\varbigcirc$ \varbigcirc	$\varcurlyvee$ \varcurlyvee	$\varcurlywedge$ \varcurlywedge
$\varoast$ \varoast	$\varobar$ \varobar	$\varobslash$ \varobslash
$\varocircle$ \varocircle	$\varodot$ \varodot	$\varogreaterthan$ \varogreaterthan
$\varolessthan$ \varolessthan	$\varominus$ \varominus	$\varoplus$ \varoplus
$\varoslash$ \varoslash	$\varotimes$ \varotimes	$\varovee$ \varovee
$\varowedge$ \varowedge	$\vartimes$ \vartimes	

The following large operators are defined:

$\bigbox$ \bigbox	$\bigcurlyvee$ \bigcurlyvee	$\bigcurlywedge$ \bigcurlywedge
$\biginterleave$ \biginterleave	$\bignplus$ \bignplus	$\bigparallel$ \bigparallel
$\bigsqcap$ \bigsqcap	$\bigtriangledown$ \bigtriangledown	$\bigtriangleup$ \bigtriangleup

The following relations are defined:

$\inplus$ \inplus	$\niplus$ \niplus	$\ntrianglelefteqslant$ \ntrianglelefteqslant
$\ntrianglerighteqslant$ \ntrianglerighteqslant	$\subsetplus$ \subsetplus	$\subsetpluseq$ \subsetpluseq
$\supsetplus$ \supsetplus	$\supsetpluseq$ \supsetpluseq	$\trianglelefteqslant$ \trianglelefteqslant
$\trianglerighteqslant$ \trianglerighteqslant		

The following arrows are defined:

$\Longmapsfrom$ \Longmapsfrom	$\Longmapsto$ \Longmapsto	$\Mapsfrom$ \Mapsfrom
$\Mapsto$ \Mapsto	$\leftarrowtriangle$ \leftarrowtriangle	$\leftrightarroweq$ \leftrightarroweq
$\leftrightarrowtriangle$ \leftrightarrowtriangle	$\lightning$ \lightning	$\longmapsfrom$ \longmapsfrom
$\mapsfrom$ \mapsfrom	$\nnearrow$ \nnearrow	$\nnwarrow$ \nnwarrow
$\rightarrowtriangle$ \rightarrowtriangle	$\rrparenthesis$ \rrparenthesis	$\shortdownarrow$ \shortdownarrow
$\shortleftarrow$ \shortleftarrow	$\shortrightarrow$ \shortrightarrow	$\shortuparrow$ \shortuparrow
$\ssearrow$ \ssearrow	$\sswarrow$ \sswarrow	

The following delimiters are defined:

$\Lbag$ \Lbag	$\Rbag$ \Rbag	$\lbag$ \lbag
$\llbracket$ \llbracket	$\llceil$ \llceil	$\llfloor$ \llfloor
$\llparenthesis$ \llparenthesis	$\rbag$ \rbag	$\rrbracket$ \rrbracket
$\rrceil$ \rrceil	$\rrfloor$ \rrfloor	

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

$$\llbracket \mathcal{P} \rrbracket \qquad \left\llbracket \bigsqcap \mathcal{P} \right\rrbracket \qquad \left\llbracket \bigsqcap_{i \in I}^{a \oplus b} P_i \right\rrbracket \qquad \left\llbracket \begin{array}{c} a \\ b \\ c \end{array} \right\rrbracket \qquad \left\llbracket \begin{array}{c} a \\ b \\ c \\ d \\ e \\ f \end{array} \right\rrbracket$$

The following special characters are used in building others:

$\Arrownot$ \Arrownot	$\Mapsfromchar$ \Mapsfromchar	$\Mapstochar$ \Mapstochar
$\arrownot$ \arrownot	$\mapsfromchar$ \mapsfromchar	

For example, if you type `$\Arrownot\Rightarrow$` you get $\Arrownot\Rightarrow$, and if you type `$\arrownot\rightarrowtriangle$` you get $\arrownot\rightarrowtriangle$.

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