

The `nccbbb` package*

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1 User Interface

`\bbb...` The package implements the following poor black board bold math symbols:

Command	Symbol	Command	Symbol
<code>\bbbb</code>	B	<code>\bbbm</code>	M
<code>\bbbc</code>	C	<code>\bbbn</code>	N
<code>\bbbd</code>	D	<code>\bbbo</code>	O
<code>\bbbe</code>	E	<code>\bbbp</code>	P
<code>\bbbf</code>	F	<code>\bbbq</code>	Q
<code>\bbbg</code>	G	<code>\bbbr</code>	R
<code>\bbbh</code>	H	<code>\bbbs</code>	S
<code>\bbbi</code>	I	<code>\bbbz</code>	Z
<code>\bbbk</code>	K	<code>\bbbzero</code>	0
<code>\bbb1</code>	1	<code>\bbbone</code>	1

It was designed to provide the compatibility with old macros of `NCC-LATEX`. We recommend use the `\mathbb` command from the `amsfonts` package instead.

2 The Implementation

Declare commands of the user interface:

```
1 \*package
2 \newcommand\bbbb{\NCC@bbb{B}}
3 \newcommand\bbbc{\NCC@bbbz{C{\NCC@bbbr{.03}{.35}{.9}{.1}}}}
4 \newcommand\bbbd{\NCC@bbb{D}}
5 \newcommand\bbbe{\NCC@bbb{E}}
6 \newcommand\bbbf{\NCC@bbb{F}}
7 \newcommand\bbbg{\NCC@bbbz{G{\NCC@bbbr{.05}{.3}{.88}{.09}}}}
8 \newcommand\bbbh{\NCC@bbb{H}}
9 \newcommand\bbbi{\NCC@bbb{I}}
```

*This file has version number v1.1, last revised 2004/11/24.

```

10 \newcommand\bbbk{\NCC@bbb{K}}
11 \newcommand\bbb1{\NCC@bbb{L}}
12 \newcommand\bbbm{\NCC@bbbi{M}}
13 \newcommand\bbbn{\NCC@bbbi{N}}
14 \newcommand\bbbo{\NCC@bbbz{O{\NCC@bbbr{.05}{.3}{.9}{.09}}}}
15 \newcommand\bbbp{\NCC@bbb{P}}
16 \newcommand\bbbq{\NCC@bbbz{Q{\NCC@bbbr{.05}{.3}{.9}{.09}}}}
17 \newcommand\bbbr{\NCC@bbb{R}}
18 \newcommand\bbbs{\NCC@bbbz{S{\NCC@bbbr{.5}{.3}{.45}{.07}}%
19 \NCC@bbbr{0}{.55}{.5}{.07}}}}
20 \newcommand\bbbz{\NCC@bbbz{\mathsf Z}{\@tempdima\wd\z@\wd\z@ 0.33\@tempdima}}%
21 \mathsf Z}}
22 \newcommand\bbbzero{\NCC@bbbz{0{\NCC@bbbr{.05}{.3}{.9}{.06}}%
23 \NCC@bbbr{.05}{.6}{.9}{.06}}}}
24 \newcommand\bbbone{\mathrm{1}\NCC@bbbz{1{\kern -0.88\wd\z@}}}}

Define base commands:
25 \def\NCC@bbb#1{\mathrm{I}\mskip -3.5mu#1}}
26 \def\NCC@bbbi#1{\mathrm{I}\NCC@bbbz{\mskip -3.5mu I}{\wd\z@\z@}}%
27 \mskip -3mu#1}}
28 \def\NCC@bbbz{\mathpalette\NCC@bbbz@}
29 \def\NCC@bbbz@#1#2{\NCC@bbbz@{#1}#2}
30 \def\NCC@bbbz@#1#2#3{\setbox\z@\hbox{\math@th#1{\mathrm{#2}}}\#3\box\z@}
31 \def\NCC@bbbr#1#2#3#4{\raise #1\ht\z@\hbox to \z@{\kern #2\wd\z@
32 \vrule \@height #3\ht\z@ \@width #4\wd\z@\hss}}
33 </package>

```