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
\bbbb	$\mathbb{B}$	\bbbm	$\mathbb{M}$
\bbbc	$\mathbb{C}$	\bbbn	$\mathbb{N}$
\bbbd	$\mathbb{D}$	\bbbo	$\mathbb{O}$
\bbbe	$\mathbb{E}$	\bbbp	$\mathbb{P}$
\bbbf	$\mathbb{F}$	\bbbq	$\mathbb{Q}$
\bbbg	$\mathbb{G}$	\bbbr	$\mathbb{R}$
\bbbh	$\mathbb{H}$	\bbbs	$\mathbb{S}$
\bbbi	$\mathbb{I}$	\bbbz	$\mathbb{Z}$
\bbbk	$\mathbb{K}$	\bbbzero	$\mathbb{O}$
\bbbl	$\mathbb{L}$	\bbbone	$\mathbb{1}$

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}}
```

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```latex
10 \newcommand\bbbk{\NCC@bbb{K}}
11 \newcommand\bbbl{\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{O}{.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{O{\NCC@bbbr{.05}{.3}{.9}{.06}%
23   \NCC@bbbr{.05}{.6}{.9}{.06}}}}}}
24 \newcommand\bbbone{\mathrm{1\NCC@bbbz{l{\kern -0.88\wd\z@}}}}
```

Define base commands:

```latex
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{$\m@th#1{\mathrm{#2}}$}#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⟩
```