`keisennote` Package Documentation

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Version 1.2.0 (2025/12/30)

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1 Acknowledgements / Credit

This package is based on the code from VoD's Qiita article, with some improvements. The original author has kindly granted permission to release this as a LaTeX package.

2 Installation

Place `keisennote.sty` in a directory where LaTeX can find it. Dependencies: `xcolor`, `tikz`, `zref`, `zref-savepos`, `fp`, `kvoptions`.

3 Package options

Set global defaults at load time using key-value style.

Option name	Default value	Description
`linewidth`	`.5truept`	Width of the ruled lines.
`radius`	`.7truept`	Radius of dots on the lines.
`distance`	`6truemm`	Distance between lines (and dots).
`triangle`	`.7truept`	Scale of the center triangular markers.

4 Commands

All commands below accept an optional argument in `pgfkeys` format: `[color=..., show number=..., step=...]`.

4.1 Notebook Style (`\notefill`, `\note`)

Input

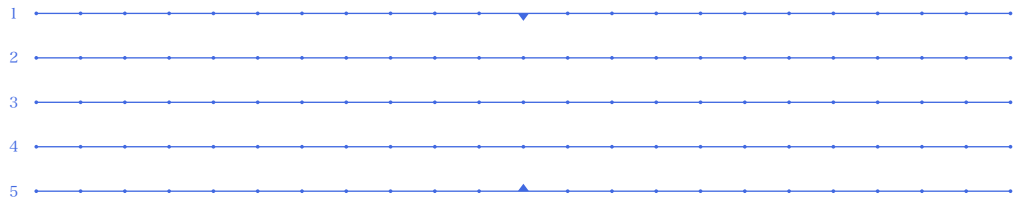
```
\notefill[options]
\note{<lines>}[options]
```

`\notefill` automatically fills the remaining vertical space. `\note` draws a block with the specified number of lines.

Example with Line Numbers:

Input

```
\note{5}[color=RoyalBlue, show number=true, step=1]
```



4.2 Grid Style (`\masumefill`, `\masume`)

Input

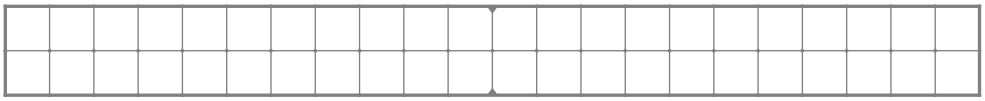
```
\masumefill*[options]
\masume*{<lines>}[options]
```

The starred version (`*`) draws a thick outer frame around the grid.

Example with Frame:

Input

```
\masume*{3}[color=Gray]
```



5 Dynamic Parameter Adjustment

You can change the parameters in the middle of the document.

`\SetNoteLineWidth[dim]` Sets the line width.
`\SetNoteDotRadius[dim]` Sets the dot radius.
`\SetNoteLineDistance[dim]` Sets the line spacing.
`\SetNoteTriangleSize[dim]` Sets the marker size.

If the optional argument is omitted, the parameter is reset to its package default.

6 Technical Notes

- **Multiple Compilations:** Commands like `\notefill` use `zref-savepos` to determine the available space. You must compile the document **at least twice** to ensure the lines are drawn correctly.
- **Line Numbers:** The `show number` option displays the line count. For `\note`, it counts down to 1. For `\notefill`, it calculates the total capacity of the space.

7 Examples

7.1 Full Page Notebook Fill

Input

```
\notefill[color=lightgray, show number=true]
```

(See the next page for the result.)

8 License

Released under the MIT License.

9 Version History

- **v1.0.0 – v1.0.4a** — Initial versions, added grid commands and package options.
- **v1.2.0 (2025/12/30)** — Added `pgfkeys` support for command options, improved `\masume*` border logic, and changed license.

10 Source Code

```
\ProvidesPackage{keisennote}[2025/12/30, v1.2.0]

\RequirePackage[dvipsnames, svgnames, x11names]{xcolor}
\RequirePackage{zref, zref-savepos, fp}
\RequirePackage{tikz}

\RequirePackage{kvoptions}

\SetupKeyvalOptions{
  family=kn,
  prefix=kn@
}

\newdimen\noteLineWidth@kn
\newdimen\noteDotsRadius@kn
\newdimen\noteLineDistance@kn
\newdimen\noteTriangle@mag@kn

% パッケージオプションの宣言
\DeclareStringOption[.5truept]{linewidth}% 線の太さ
\DeclareStringOption[.7truept]{radius}% ドットの大きさ
\DeclareStringOption[6truemm]{distance}% ドットの間隔
\DeclareStringOption[.7truept]{triangle}% 三角形の大きさ
\ProcessKeyvalOptions*


% オプションの反映
\setlength{\noteLineWidth@kn}{\kn@linewidth}
\setlength{\noteDotsRadius@kn}{\kn@radius}
\setlength{\noteLineDistance@kn}{\kn@distance}
\setlength{\noteTriangle@mag@kn}{\kn@triangle}
```

```
% 途中でパラメータ変更ができるように
\NewDocumentCommand{\SetNoteLineWidth}{O{.5truept}}{%
  \setlength{\noteLineWidth@kn}{#1}
}
\NewDocumentCommand{\SetNoteDotRadius}{O{.8truept}}{%
  \setlength{\noteDotsRadius@kn}{#1}
}
\NewDocumentCommand{\SetNoteLineDistance}{O{6truemm}}{%
  \setlength{\noteLineDistance@kn}{#1}
}
\NewDocumentCommand{\SetNoteTriangleSize}{O{.5pt}}{%
  \setlength{\noteTriangle@mag@kn}{#1}
}

% 内部レジスタ
\newdimen\VDNT@currentXPos
\newdimen\VDNT@currentYPos
\newdimen\VDNT@Xinterval
\newdimen\VDNT@Yinterval
\newdimen\VDNT@notegoal
\def\VDNT@xscaler{.996}

% \notefillで用いる座標管理用カウンタの準備
\def\VDNT@pkgname{vodnote}
\global\newcount\VDNT@uniqe


% 行間算出
\newcount\kn@linecount@internal
\newcommand{\cal@kn@internal}{%
  \FPeval\VDNT@dotsNum{round(round(((\the)\@tempcnta/(\the)\@tempcntb)/2:0)*2:0)}%
  \VDNT@Xinterval\dimexpr(\linewidth)/\VDNT@dotsNum\relax%
  \VDNT@Yinterval\VDNT@Xinterval%
}


% \notefill の定義
% \notefill用内部マクロ
\newcommand{\savepos@kn@internal@notefill}{%
  \zsaveposy{\VDNT@pkgname.\the\VDNT@uniqe.TopPos}% 上端の座標取得
  \leavevmode\vfill\leavevmode% 下まで移動→座標記憶
  \zsaveposy{\VDNT@pkgname.\the\VDNT@uniqe.BottomPos}% 下端の座標取得
}
\newcommand{\cal@kn@internal@notefill}{%
  \VDNT@notegoal=\dimexpr
    \zposy{\VDNT@pkgname.\the\VDNT@uniqe.TopPos}sp
    -\zposy{\VDNT@pkgname.\the\VDNT@uniqe.BottomPos}sp
  \relax%
}
```

```
\newif\ifVDNT@shownumber
\pgfkeys{
  /VDNT/.is family, /VDNT,
  color/.estore in = \VDNT@color,
  step/.estore in = \VDNT@step,
  show number/.is if = VDNT@shownumber,
  default/.style = {color=white!70!black, step=5}
}

\NewDocumentCommand{\notefill}{ O{} }{%
  \par\bgroup%
  \pgfkeys{/VDNT, default, #1}%
  \parindent\z@%
  \@tempcnta\linewidth% 総横幅
  \@tempcntb\noteLineDistance@kn% 単位横幅
  \cal@kn@internal%
  \savepos@kn@internal@notefill%
  \cal@kn@internal@notefill%
  %%%行数算出
  \pgfmathtruncatemacro{\VDNT@totalLines}{floor(\VDNT@notegoal / \VDNT@Yinterval)}%
  %%%
  % ノート罫線描画本体
  \noindent\smash{%
    \begin{tikzpicture}[xscale=\VDNT@xscaler]
      \VDNT@currentYPos\z@
      %%%
      \kn@linecount@internal=\VDNT@totalLines\relax % 初期値を総行数に設定
      \advance\kn@linecount@internal by \@ne\relax %
      %%%
      % 上端の三角
      \coordinate (TopMarkerTip) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@currentYPos+\
           noteTriangle@mag@kn*4pt);
      \fill[\VDNT@color] (TopMarkerTip) -- ++(\noteTriangle@mag@kn*3pt,-\noteTriangle@mag@kn
           *4pt) -- ++(-\noteTriangle@mag@kn*6pt,0) -- cycle;
      % 罫線とドットのループ描画
      \@whiledim\VDNT@currentYPos<\VDNT@notegoal\do{%
        % 横線の左端(L)と右端(R)
        \coordinate (L) at (0, \VDNT@currentYPos);
        \coordinate (R) at (\linewidth, \VDNT@currentYPos);
        % --- 行番号の描画 ---
        \ifVDNT@shownumber
          \pgfmathtruncatemacro{\rem@notefill}{mod(\kn@linecount@internal,\VDNT@step)}
          \ifnum\rem@notefill=0
            \node[anchor=east, font=\scriptsize, text=\VDNT@color, overlay] at ([xshift=-\
                 f@size/2pt]L) {\the\kn@linecount@internal};
          \fi
        \fi
        % --------------------
        % 罫線を引く
        \draw[\VDNT@color, line width=\noteLineWidth@kn] (L) -- (R);
```

```
      % ループ内のドット描画部分
      \foreach \k in{0,1,...,\VDNT@dotsNum}{%
        \pgfmathtruncatemacro{\VDNT@halfNum}{\VDNT@dotsNum/2}%
        \def\do@draw@dot{1}% 描画フラグを立てる
        % 「現在の行が最初」かつ「kが真ん中」ならフラグを折る
        \ifdim\VDNT@currentYPos=0pt\relax
          \ifnum\k=\VDNT@halfNum \def\do@draw@dot{0}\fi
        \fi
        % 「現在の行が最後（次がない）」かつ「kが真ん中」ならフラグを折る
        % \VDNT@notegoal との比較で行う
        \VDNT@currentXPos=\dimexpr\VDNT@currentYPos+\VDNT@Yinterval\relax
        \ifdim\VDNT@currentXPos<\VDNT@notegoal\else
          \ifnum\k=\VDNT@halfNum \def\do@draw@dot{0}\fi
        \fi
        \ifnum\do@draw@dot=1\relax
          \coordinate (Dot) at (\the\dimexpr\VDNT@Xinterval*\k\relax, \VDNT@currentYPos);
          \fill[\VDNT@color] (Dot) circle [radius=\noteDotsRadius@kn];
        \fi
      }
      % 次の行へ移動
      \advance\VDNT@currentYPos\VDNT@Yinterval\relax
      %%%カウントダウン
      \advance\kn@linecount@internal by -\@ne\relax
      %%%
    }
    % 下端の三角
    % 座標を定義：(中心X, 最後の行Y - 4pt)
    \coordinate (BottomMarkerTip) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@currentYPos-\
        VDNT@Yinterval-\noteTriangle@mag@kn*4pt);
    \fill[\VDNT@color] (BottomMarkerTip) -- ++(\noteTriangle@mag@kn*3pt,\
        noteTriangle@mag@kn*4pt) -- ++(-\noteTriangle@mag@kn*6pt,0) -- cycle;
  \end{tikzpicture}%
 }%
 \egroup%
 \global\advance\VDNT@uniqe\@ne% 描画番号を進める
 \par%
}

\NewDocumentCommand{\masumefill}{ s O{} }{%
 \par\bgroup%
 \pgfkeys{/VDNT, default, #2}%
 \parindent\z@%
 \@tempcnta\linewidth% 総横幅
 \@tempcntb\noteLineDistance@kn% 単位横幅
 \cal@kn@internal%
 \savepos@kn@internal@notefill%
 \cal@kn@internal@notefill%
 %%%行数算出
 \pgfmathtruncatemacro{\VDNT@totalLines}{floor(\VDNT@notegoal / \VDNT@Yinterval)}%
 %%%
```

```
% ノート罫線描画本体
\noindent\smash{%
  \begin{tikzpicture}[xscale=\VDNT@xscaler]
    \VDNT@currentYPos\z@
    %%%
    \kn@linecount@internal=\VDNT@totalLines\relax % 初期値を総行数に設定
    \advance\kn@linecount@internal by \@ne\relax %
    %%%
    % 上端の三角
    \coordinate (TopMarkerTip) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@currentYPos+\
        noteTriangle@mag@kn*4pt);
    \fill[\VDNT@color] (TopMarkerTip) -- ++(\noteTriangle@mag@kn*3pt,-\noteTriangle@mag@kn
        *4pt) -- ++(-\noteTriangle@mag@kn*6pt,0) -- cycle;
    % 罫線とドットのループ描画
    \@whiledim\VDNT@currentYPos<\VDNT@notegoal\do{%
      % 横線の左端(L)と右端(R)
      \coordinate (L) at (0, \VDNT@currentYPos);
      \coordinate (R) at (\linewidth, \VDNT@currentYPos);
      % --- 行番号の描画 ---
      \ifVDNT@shownumber
        \pgfmathtruncatemacro{\rem@notefill}{mod(\kn@linecount@internal,\VDNT@step)}
        \ifnum\rem@notefill=0
          \node[anchor=east, font=\scriptsize, text=\VDNT@color, overlay] at ([xshift=-\
              f@size/2pt]L) {\the\kn@linecount@internal};
        \fi
      \fi
      % --------------------
      % 罫線を引く
      \draw[\VDNT@color, line width=\noteLineWidth@kn] (L) -- (R);
      % ループ内のドット描画部分
      \foreach \k in{0,1,...,\VDNT@dotsNum}{%
        \pgfmathtruncatemacro{\VDNT@halfNum}{\VDNT@dotsNum/2}%
        \def\do@draw@dot{1}% 描画フラグを立てる
        % 「現在の行が最初」かつ「kが真ん中」ならフラグを折る
        \ifdim\VDNT@currentYPos=0pt\relax
          \ifnum\k=\VDNT@halfNum \def\do@draw@dot{0}\fi
        \fi
        % 「現在の行が最後（次がない）」かつ「kが真ん中」ならフラグを折る
        % \VDNT@notegoal との比較で行う
        \VDNT@currentXPos=\dimexpr\VDNT@currentYPos+\VDNT@Yinterval\relax
        \ifdim\VDNT@currentXPos<\VDNT@notegoal\else
          \ifnum\k=\VDNT@halfNum \def\do@draw@dot{0}\fi
        \fi
        % ------------------
        \coordinate (VBottom) at (\the\dimexpr\VDNT@Xinterval*\k\relax, \VDNT@currentYPos);
        \VDNT@currentXPos=\dimexpr\VDNT@currentYPos+\VDNT@Yinterval\relax
        \ifdim\VDNT@currentXPos<\VDNT@notegoal\relax
          \draw[\VDNT@color, line width=\noteLineWidth@kn] (VBottom) -- ++(0, \
              VDNT@Yinterval);
        \fi
```

```
        % ------------------
        \ifnum\do@draw@dot=1\relax
          \coordinate (Dot) at (\the\dimexpr\VDNT@Xinterval*\k\relax, \VDNT@currentYPos);
          \fill[\VDNT@color] (Dot) circle [radius=\noteDotsRadius@kn];
        \fi
      }
      % 次の行へ移動
      \advance\VDNT@currentYPos\VDNT@Yinterval\relax
      %%%カウントダウン
      \advance\kn@linecount@internal by -\@ne\relax
      %%%
    }
    % 外枠描画
    \IfBooleanT{#1}{%
      \draw[\VDNT@color, line width=\noteLineWidth@kn*2.5] (0,0) rectangle (\linewidth, \the
          \dimexpr\VDNT@currentYPos-\VDNT@Yinterval\relax);
    }%
    % 下端の三角
    % 座標を定義：(中心X, 最後の行Y - 4pt)
    \coordinate (BottomMarkerTip) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@currentYPos-\
        VDNT@Yinterval-\noteTriangle@mag@kn*4pt);
    \fill[\VDNT@color] (BottomMarkerTip) -- ++(\noteTriangle@mag@kn*3pt,\
        noteTriangle@mag@kn*4pt) -- ++(-\noteTriangle@mag@kn*6pt,0) -- cycle;
  \end{tikzpicture}%
 }%
 \egroup%
 \global\advance\VDNT@uniqe\@ne% 描画番号を進める
 \par%
}


% \note の定義（２以上の整数を引数に）
\NewDocumentCommand{\note}{ m O{} }{%
 \par\bgroup%
 \pgfkeys{/VDNT, default, #2}%
 \@tempcnta\linewidth%
 \@tempcntb\noteLineDistance@kn%
 \cal@kn@internal%
 \noindent%
 \begin{tikzpicture}[xscale=\VDNT@xscaler]
  \VDNT@currentYPos\z@
  %%%
  \kn@linecount@internal=#1\relax
  %%%
  \coordinate (TopMarker) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@Yinterval+\
      noteTriangle@mag@kn*4pt);
  \fill[\VDNT@color] (TopMarker) -- ++(\noteTriangle@mag@kn*3pt, -\noteTriangle@mag@kn*4pt)
      -- ++(-\noteTriangle@mag@kn*6pt, 0) -- cycle;
  \foreach \i in {1, 2, ..., #1} {%
    \xdef\tempY{\the\dimexpr\VDNT@Yinterval*\i\relax}
```

```
      \coordinate (LineL) at (0, \tempY);
      \coordinate (LineR) at (\linewidth, \tempY);
      % --- 行番号の描画 ---
      \ifVDNT@shownumber
        \pgfmathtruncatemacro{\VDNT@currentnum}{#1 - \i + 1 }
        \pgfmathtruncatemacro{\rem@notefill}{mod(\VDNT@currentnum,\VDNT@step)}
        \ifnum\rem@notefill=0
          \node[anchor=east, font=\scriptsize, text=\VDNT@color, overlay] at ([xshift=-\f@size
               /2pt]LineL) {\VDNT@currentnum};
        \fi
      \fi
      % --------------------
      \draw[\VDNT@color, line width=\noteLineWidth@kn] (LineL) -- (LineR);
      \foreach \k in {0, 1, ..., \VDNT@dotsNum} {%
        \pgfmathtruncatemacro{\VDNT@halfNum}{\VDNT@dotsNum/2}%
        \def\skipdot{0}%
        \ifnum\i=1 \ifnum\k=\VDNT@halfNum \def\skipdot{1}\fi\fi
        \ifnum\i=#1 \ifnum\k=\VDNT@halfNum \def\skipdot{1}\fi\fi
        \ifnum\skipdot=0
          \coordinate (DotPos) at (\the\dimexpr\VDNT@Xinterval*\k\relax, \tempY);
          \fill[\VDNT@color] (DotPos) circle [radius=\noteDotsRadius@kn];
        \fi
      }%
      % 最後に使ったY座標を記録
      \ifnum\i=#1 \global\VDNT@currentYPos=\tempY\relax \fi
    }%
    \coordinate (BottomMarker) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@currentYPos-\
         noteTriangle@mag@kn*4pt);
    \fill[\VDNT@color] (BottomMarker) -- ++(\noteTriangle@mag@kn*3pt, \noteTriangle@mag@kn*4
         pt) -- ++(-\noteTriangle@mag@kn*6pt, 0) -- cycle;
  \end{tikzpicture}%
  \egroup%
  \par%
}

\NewDocumentCommand{\masume}{ s m O{} }{%
  \par\bgroup%
  \pgfkeys{/VDNT, default, #3}%
  \@tempcnta\linewidth%
  \@tempcntb\noteLineDistance@kn%
  \cal@kn@internal%
  \noindent%
  \begin{tikzpicture}[xscale=\VDNT@xscaler]
    \VDNT@currentYPos\z@
    %%%
    \kn@linecount@internal=#1\relax
    %%%
    \coordinate (TopMarker) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@Yinterval+\
         noteTriangle@mag@kn*4pt);
    \fill[\VDNT@color] (TopMarker) -- ++(\noteTriangle@mag@kn*3pt, -\noteTriangle@mag@kn*4pt)
```

```
        -- ++(-\noteTriangle@mag@kn*6pt, 0) -- cycle;
    \foreach \i in {1, 2, ..., #2} {%
      \xdef\tempY{\the\dimexpr\VDNT@Yinterval*\i\relax}
      \coordinate (LineL) at (0, \tempY);
      \coordinate (LineR) at (\linewidth, \tempY);
      % --- 行番号の描画 ---
      \ifVDNT@shownumber
        \pgfmathtruncatemacro{\VDNT@currentnum}{#2 - \i + 1 }
        \pgfmathtruncatemacro{\rem@notefill}{mod(\VDNT@currentnum,\VDNT@step)}
        \ifnum\rem@notefill=0
          \node[anchor=east, font=\scriptsize, text=\VDNT@color, overlay] at ([xshift=-\f@size
              /2pt]LineL) {\VDNT@currentnum};
        \fi
      \fi
      % --------------------
      \draw[\VDNT@color, line width=\noteLineWidth@kn] (LineL) -- (LineR);
      \foreach \k in {0, 1, ..., \VDNT@dotsNum} {%
        \pgfmathtruncatemacro{\VDNT@halfNum}{\VDNT@dotsNum/2}%
        \def\skipdot{0}%
        \ifnum\i=1 \ifnum\k=\VDNT@halfNum \def\skipdot{1}\fi\fi
        \ifnum\i=#2 \ifnum\k=\VDNT@halfNum \def\skipdot{1}\fi\fi
        % ------------------
        \ifnum\i<#2\relax
          \draw[\VDNT@color, line width=\noteLineWidth@kn] (\the\dimexpr\VDNT@Xinterval*\k\
              relax, \tempY) -- ++(0, \VDNT@Yinterval);
        \fi
        % ------------------
        \ifnum\skipdot=0
          \coordinate (DotPos) at (\the\dimexpr\VDNT@Xinterval*\k\relax, \tempY);
          \fill[\VDNT@color] (DotPos) circle [radius=\noteDotsRadius@kn];
        \fi
      }%
      % 最後に使ったY座標を記録しておく（下の三角用）
      \ifnum\i=#2 \global\VDNT@currentYPos=\tempY\relax \fi
    }%
    \IfBooleanT{#1}{%
      \draw[\VDNT@color, line width=\noteLineWidth@kn*2.5] (0, \the\VDNT@Yinterval) rectangle
          (\linewidth, \VDNT@currentYPos);
    }%
    \coordinate (BottomMarker) at (\VDNT@Xinterval*\VDNT@dotsNum/2, \VDNT@currentYPos-\
        noteTriangle@mag@kn*4pt);
    \fill[\VDNT@color] (BottomMarker) -- ++(\noteTriangle@mag@kn*3pt, \noteTriangle@mag@kn*4
        pt) -- ++(-\noteTriangle@mag@kn*6pt, 0) -- cycle;
  \end{tikzpicture}%
  \egroup%
  \par%
}

\endinput
```