The musikui package v1

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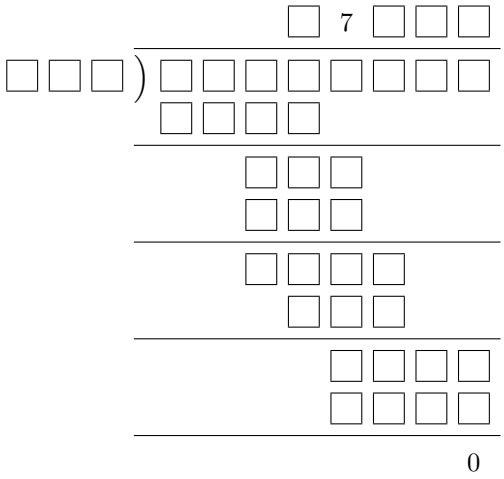
This package is for easy expression of arithmetical restorations with LaTeX.



The package is maintained on GitHub:

- `https://github.com/puripuri2100/musikui.sty`

1 Package read

Read using `\usepackage` command. There is no option.

```
\usepackage{musikui}
```

2 Dependent package

graphics package

3 License

4 Provide command

4.1 Commands related to composition

`\kake{`⟨multiplicand⟩`}{`⟨multiplier⟩`}{`⟨product⟩`}`
`\wari{`⟨dividend⟩`}{`⟨divide⟩`}{`⟨quotient⟩`}`
`\musi{`⟨holes⟩`}{`⟨distance from the right end⟩`}`
`\sen`
`\bubunsen{`⟨length⟩`}{`⟨distance from the right end⟩`}`

4.2 Commands related to holes

`\eaten{`⟨numbers etc.⟩`}`
`\noneaten{`⟨numbers etc.⟩`}`
`\halfeaten{`⟨numbers etc.⟩`}`
`\halfnoneaten{`⟨numbers etc.⟩`}`
`\hhalfeaten{`⟨numbers etc.⟩`}`
`\hhalfnoneaten{`⟨numbers etc.⟩`}`

5 The role of each command

The role of each command is shown in Table 1.

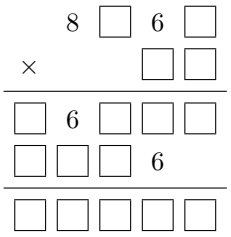
Table 1:

`\kake`	Outputs ⟨multiplicand⟩,⟨multiplier⟩ and ⟨product⟩ of multiplication arithmetical restorations calculation.
`\wari`	Outputs ⟨dividend⟩,⟨divide⟩ and ⟨quotient⟩ of division arithmetical restorations calculation.
`\musi`	Outputs ⟨holes⟩,⟨distance from the right end⟩.
`\sen`	line
`\bubunsen`	Line of the specified length
`\eaten`	normal hole
`\noneaten`	hole without a line
`\halfeaten`	Half the width hole of `\eaten`.
`\halfnoneaten`	Hole without a line with half width of `\eaten`.
`\hhalfeaten`	Two holes with `\harleaten` side by side.
`\hhalfnoneaten`	`\hhalfeaten` line without a hole

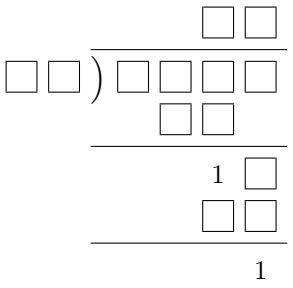
6 Notation

Use one musikui environment per an arithmetical restorations. For the representation part of the hole, a hole and a hole (or a number) are connected by "`&`". After using `\kake` or `\wari`, you just line `\musi` and `\sen` like the hole counting you want to express. An example of division and multiplication is given below.

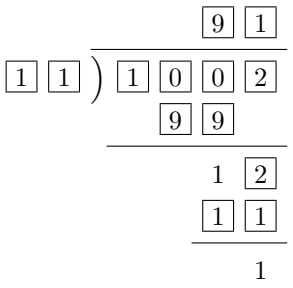
```
\begin{musikui}
\kake{8&\eaten&6&\eaten}
{\eaten&\eaten}
{\eaten&\eaten&\eaten&\eaten&\eaten}
\musi{\eaten&6&\eaten&\eaten&\eaten}{0}
\musi{\eaten&\eaten&\eaten&6}{1}
\sen
\end{musikui}
```



```
\begin{musikui}
\wari{\eaten&\eaten&\eaten&\eaten}
{\eaten&\eaten}
{\eaten&\eaten}
\musi{\eaten&\eaten}{1}
\sen
\musi{1&\eaten}{0}
\musi{\eaten&\eaten}{0}
\sen
\musi{1}{0}
\end{musikui}
```



```
\begin{musikui}
\wari{\eaten{1}&\eaten{0}&\eaten{0}&\eaten{2}}
{\eaten{1}&\eaten{1}}
{\eaten{9}&\eaten{1}}
\musi{\eaten{9}&\eaten{9}}{1}
\bubunsen{4}{0}
\musi{1&\eaten{2}}{0}
\musi{\eaten{1}&\eaten{1}}{0}
\bubunsen{2}{0}
\musi{1}{0}
\end{musikui}
```



7 Customize

You can change the value of arithmetical restorations using `\renewcommand*`.

`\renewcommand*{`⟨command name⟩`}{`⟨value⟩`}`

The values whose roles and default values can be changed are shown in Table 3.

Table 3:

Command name	Role	Default value
`\musiwidth`	hole width	1.2em
`\musiheight`	hole height	0.96em
`\musidepth`	hole depth	0.24em
`\musihgap`	distance between hole and hole	0.4em
`\musivgap`	distance between hole and line	0.4em
`\musirule`	line width	0.4pt

`\musiopsymbol`	multiplication sign	`$\times$`
`\musiwarikakko`	divide symbol	`\Big)`