

# Streamlining the booktabs package

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## 1 Introduction

The `booktabstabular` package provides wrapper environments around `tabular` and `tabular*` that insert `\toprule` at the beginning, `\bottomrule` at the end, and locally remap the legacy `\hline` and `\cline` commands to their booktabs equivalents `\midrule` and `\cmidrule`. It also provides commands to temporarily override the standard `tabular` and `tabular*` environments so that existing documents can opt into this behaviour without rewriting each table.

## 2 Interface

`booktabstabular` (*env.*) The `booktabstabular` environment is a drop-in wrapper for `tabular`. It accepts the same arguments as `tabular`: an optional position specifier `[t]` or `[b]`, followed by the column specification.

`booktabstabular*` (*env.*) The `booktabstabular*` environment is a drop-in wrapper for `tabular*`. It accepts the width, an optional position specifier, and the column specification.

`\overridetabular` After calling `\overridetabular`, the public `tabular` and `tabular*` environments are rebound to the wrapper environments provided by this package. Note that many classes, including the standard classes, use a `tabular` to typeset the list of authors, if you don't want that to be affected, you should call `\overridetabular` after `\maketitle` or use the `overridetabular` package option.

`\restoretabular` The command `\restoretabular` restores the original definitions of `tabular` and `tabular*`.

`overridetabular` option Passing the package option `overridetabular` to `\usepackage` has almost the same effect as calling `\overridetabular` after loading the package. The difference is that the package option automatically disables the override around `\maketitle` to avoid affecting the title page, while the command does not.

### 2.1 Example

A typical opt-in workflow is:

```
\usepackage[overridetabular]{booktabstabular}

\begin{tabular}{lll}
  First & Second & Third \\
\hline % mapped to \midrule
  Alpha & Beta & Gamma
\end{tabular}
```

Alternatively, the wrapper environments can be used directly:

```
\begin{booktabstabular}{lll}
  First & Second & Third \\
  \hline
  Alpha & Beta & Gamma
\end{booktabstabular}
```

Both should yield the following output: 

First	Second	Third
Alpha	Beta	Gamma

 As you

can see, `\toprule` and `\bottomrule` are automatically inserted, and `\hline` is remapped to `\midrule`, so the table is typeset according to booktabs guidelines. The same applies to `tabular*` when using the `booktabstabular*` environment or the overridden `tabular*` name.

```
\begin{booktabstabular*}{\textwidth}{l@{\extracolsep{\fill}}l}
  First & Second \\
  \hline
  Alpha & Beta
\end{booktabstabular*}
```

which produces the slightly wider table 

First	Second
Alpha	Beta

.

## 2.2 Notes

This package deliberately does not insert any intermediate rule such as `\midrule` automatically; that remains the author's responsibility.

The end wrapper inserts `\bottomrule` at the legal alignment boundary, so the final row may be written either with or without a trailing `\\`.

The package does not attempt to remap the legacy `\hline` and `\cline` outside of the wrapper environments, so they will continue to work as normal in documents that only use the wrappers for a subset of tables.

The package affects only `tabular` and `tabular*`. It does not modify `array`, `longtable`, or any other alignment environment.

## 3 Implementation

First load `booktabs`, and record the package identity.

```
1 (*package)
2 \NeedsTeXFormat{LaTeX2e}[2023-06-01]
3 \RequirePackage{booktabs}
4 \ProvidesPackage{booktabstabular}
5 [2026/03/08 v1.0.0 tabular/tabular* with booktabs rules]
```

### 3.1 Environments

`origtabular` (*env.*) Save copies of the original `tabular` and `tabular*` environments. They are used internally but also made available for users who want to call the original versions if they have overridden the standard names.

```
6 \NewEnvironmentCopy{origtabular}{tabular}
7 \NewEnvironmentCopy{origtabular*}{tabular*}
```

Mirror the kernel's current `\endtabular`, but insert `\bottomrule` after the implicit final `\crcr`. The control sequence names avoid `@` so that they can safely be used in environment definitions without additional category-code changes.

```
8 \def\booktabstabular@endtabular{%
9   \crcr
10  \bottomrule
11  \egroup
12  \egroup
13  $\egroup
14 }
15 \let\booktabstabular@endtabularstar\booktabstabular@endtabular
```

Map legacy horizontal rules to booktabs-style rules inside the wrappers.

```
16 \def\booktabstabular@rulesetup{%
17   \let\hline\midrule
18   \let\cline\cmidrule
19 }
```

`booktabstabular` (*env.*) The `booktabstabular` environment mirrors the argument signature of `tabular`: an optional position argument followed by the preamble. It calls the copied begin macro directly rather than nesting a separate environment, which keeps LaTeX's environment stack balanced when the custom end code is used.

```
20 \NewDocumentEnvironment{booktabstabular}{o m}
21  {%
22   \begingroup
23   \booktabstabular@rulesetup
24   \IfNoValueTF{#1}
25     {\origtabular{#2}}
26     {\origtabular[#1]{#2}}%
27   \toprule
28   }
29  {%
30   \booktabstabular@endtabular
31   \endgroup
32  }
```

`booktabstabular*` (*env.*) The `booktabstabular*` environment mirrors `tabular*`: width, optional position, and preamble, again using the copied begin macro directly.

```
33 \NewDocumentEnvironment{booktabstabular*}{m o m}
34  {%
35   \begingroup
36   \booktabstabular@rulesetup
37   \IfNoValueTF{#2}
38     {\UseName{origtabular*}{#1}{#3}}
39     {\UseName{origtabular*}{#1}{#2}{#3}}%
```

```

40   \toprule
41 }
42 {%
43   \booktabstabular@endtabularstar
44   \endgroup
45 }

```

### 3.2 Public commands

`\overridetabular` Finally, provide public commands to switch the standard environment names to the wrapped versions and to restore the originals.

```

46 \NewDocumentCommand{\overridetabular}{}{
47   \RenewEnvironmentCopy{tabular}{booktabstabular}%
48   \RenewEnvironmentCopy{tabular*}{booktabstabular*}%
49 }
50 \NewDocumentCommand{\restoretabular}{}{
51   \RenewEnvironmentCopy{tabular}{origtabular}%
52   \RenewEnvironmentCopy{tabular*}{origtabular*}%
53 }

```

### 3.3 Options

We offer an option to automatically override the standard `tabular` and `tabular*` environments. This is disabled by default, but can be enabled by passing the `overridetabular` option to `\usepackage`.

```

54 \newif\ifbooktabstabularoverride%
55 \DeclareOption{overridetabular}{\booktabstabularoverridetrue}
56 \ProcessOptions\relax
57 \ifbooktabstabularoverride
58   \AddToHook{cmd/maketitle/before}{\restoretabular}
59   \AddToHook{cmd/maketitle/after}{\overridetabular}
60   \overridetabular
61 \fi
62 </package>

```