

# The notebeamer Package\*

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## 1 Introduction

The notebeamer package provides an easy way to print slides on note pages quickly, developed by expl3 based on tikz. It supports various compilation methods, such as pdf $\LaTeX$ , Xe $\LaTeX$ , Ap $\LaTeX$ , Lua $\LaTeX$ , etc.

## 2 Usage

To load this package, write the line

```
\usepackage{notebeamer}
```

---

```
\includebeamer [keyvals] {filename} [keyvals]
```

The `\includebeamer` command can create pages with note lines, and import the specific pages of the `.pdf` file on the left side of the note pages. The mandatory argument can set the `.pdf` file that will be inserted. The optional argument accepts the following keys

**color** =  $\langle str \rangle$  can set the note lines' color (Default: black), this key's name could be omitted.

**ratio** =  $\langle fp\ num \rangle$  can set imported slides' ratio and empty area's width (Default: 0.5).

**sep** =  $\langle dim \rangle$  can set the vertical space between slides (Default: 2ex).

**nup** =  $\langle int \rangle$  can set the number of slides on every page (Default: 3).

**pages** =  $\langle comma-separated\ list \rangle$  can select pages to insert. The list could contain ranges of page numbers. (Default: 1).

**lines** =  $\langle int \rangle$  can set the number of lines on every page.

**lineno** =  $\langle true | false \rangle$  can set whether to show the line numbers (Default: false).

**lhead**, **rhead** =  $\langle str \rangle$  can set the left / right header of the pages.

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\*<https://github.com/myhsia/notebeamer>, <https://ctan.org/pkg/notebeamer>

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### 3 Working Example

Macros like `\newgeometry`, and `\pagecolor`, etc., could be used for assistance.

```
\documentclass[a4paper]{article}

\usepackage{libertine, geometry, notebeamer}

\begin{document}

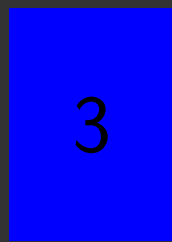
\newgeometry{margin = .75in}
\pagecolor{black!80}
\includebeamer
  [ nup = 4, pages = {2-4, 8-10}, lines = 32, ratio = .28,
    white!80, lhead = Chapter 1, lineno, rhead = Page~\thepage
  ] { example-image-a4-numbered.pdf }

\pagecolor{white}
\includebeamer
  [ nup = 5, pages = 1-5, lines = 32, ratio = .48,
    lhead = Chapter 1, lineno, rhead = Page~\thepage
  ] { example-image-duck.pdf }

\includebeamer
  [ nup = 2, pages = -, lines = 32, ratio = .54,
    lhead = Chapter 1, rhead = Page~\thepage
  ] { example-image-a4.pdf }

\end{document}
```

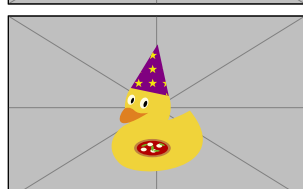
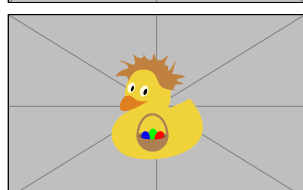
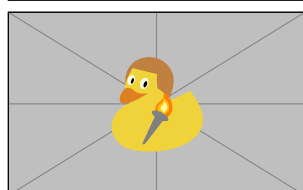
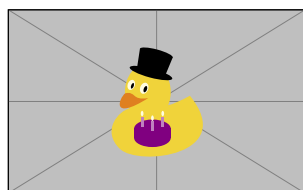
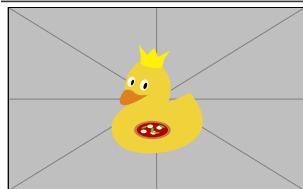
The effect of the above example is exhibited on the next page.



Handwriting practice lines with numbers 1 through 32 on the right side.



Handwriting practice lines with numbers 1 through 32 on the right side.



Handwriting practice lines with numbers 1 through 32 on the right side.

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Handwriting practice lines with numbers 1 through 32 on the right side.

## 4 The Source Code

```
1 <*package>
2 <@@=ntbm>
3 \def \ntbm@date {2026-02-07}
4 \def \ntbm@version {v4.6A}
5 \ProvidesExplPackage {notebeamer} {\ntbm@date} {\ntbm@version}
6 {Package for printing slides on note pages}
7 \cs_if_exist:NF \graphics_include:nn { \RequirePackage{l3graphics} }
8 \RequirePackage{tikz, tikzpagenodes}
```

### 4.1 User's Interface

`\includebeamer` Define the `\includebeamer` command.

```
9 \NewDocumentCommand \includebeamer { 0{} m 0{} }
10 {
11   \group_begin:
12   \keys_set:nn { notebeamer / includebeamer } { #1, #3 }
13   \__ntbm_include_aux:n {#2}
14   \group_end:
15 }
```

Key-value definitions for the `\includebeamer` command.

```
\l__ntbm_include_pos_tl
\l__ntbm_include_color_tl
\l__ntbm_include_pages_tl
\l__ntbm_include_nup_int
\l__ntbm_include_lines_int
\l__ntbm_include_ratio_fp
\l__ntbm_include_sep_dim
\l__ntbm_include_lhead_tl
\l__ntbm_include_rhead_tl
16 \keys_define:nn { notebeamer / includebeamer }
17 {
18   pos .tl_set:N = \l__ntbm_include_pos_tl,
19   pos .initial:n = left,
20   color .tl_set:N = \l__ntbm_include_color_tl,
21   color .initial:n = black,
22   pages .tl_set:N = \l__ntbm_include_pages_tl,
23   pages .initial:n = 1,
24   nup .int_set:N = \l__ntbm_include_nup_int,
25   nup .initial:n = 3,
26   lines .int_set:N = \l__ntbm_include_lines_int,
27   lineno .bool_set:N = \l__ntbm_include_lineno_bool,
28   lineno .initial:n = false,
29   lineno .default:n = true,
30   ratio .fp_set:N = \l__ntbm_include_ratio_fp,
31   ratio .initial:n = .5,
32   sep .dim_set:N = \l__ntbm_include_sep_dim,
33   sep .initial:n = 2ex,
34   lhead .tl_set:N = \l__ntbm_include_lhead_tl,
35   rhead .tl_set:N = \l__ntbm_include_rhead_tl,
36   unknown .code:n = \tl_if_novalue:nF {#1}
37   { \tl_set_eq:NN \l__ntbm_include_color_tl \l_keys_key_tl }
38 }
```

*(End of definition for `\includebeamer` and others. This function is documented on page 1.)*

### 4.2 Internal Auxiliary

`\l__ntbm_nup_dim` Store the heights and widths of the logical pages in a specific nup.

```
\l__ntbm_include_ratio_dim
39 \dim_new:N \l__ntbm_nup_dim
40 \dim_new:N \l__ntbm_include_ratio_dim
```

*(End of definition for \l\_ntbm\_nup\_dim and \l\_ntbm\_include\_ratio\_dim)*

```

\l_ntbm_pages_total_int Store the number of total physical pages and residue logical pages.
\l_ntbm_pages_residue_int
41 \int_new:N \l_ntbm_pages_total_int
42 \int_new:N \l_ntbm_pages_residue_int

(End of definition for \l_ntbm_pages_total_int and \l_ntbm_pages_residue_int.)

\l_ntbm_tmpa_clist Store the results of \__ntbm_range_to_list:nN.
43 \clist_new:N \l_ntbm_tmpa_clist

(End of definition for \l_ntbm_tmpa_clist.)

\__ntbm_include_aux:n Define the auxiliary command for \includebeamer.
44 \cs_new_protected_nopar:Npn \__ntbm_include_aux:n #1
45 {
46   \graphics_get_pagecount:nN {#1} \l_ntbm_include_filepages_int
47   \dim_set:Nn \l_ntbm_nup_dim { \textheight/\l_ntbm_include_nup_int }
48   \dim_set:Nn \l_ntbm_include_ratio_dim
49     { \fp_use:N \l_ntbm_include_ratio_fp \textwidth }
50   \tl_if_eq:NnTF \l_ntbm_include_pages_tl { - }
51     {
52       \__ntbm_range_to_list:nN
53         { 1 - \l_ntbm_include_filepages_int } \l_ntbm_tmpa_clist
54     }
55     {
56       \exp_args:NV \__ntbm_range_to_list:nN
57         { \l_ntbm_include_pages_tl } \l_ntbm_tmpa_clist
58     }
59   \int_set:Nn \l_ntbm_pages_total_int
60     {
61       \fp_eval:n
62         { ceil
63           ( \clist_count:N \l_ntbm_tmpa_clist/
64             \l_ntbm_include_nup_int, 0
65           ) - 1
66         }
67     }
68   \int_set:Nn \l_ntbm_pages_residue_int
69     {
70       \int_eval:n
71         {
72           \clist_count:N \l_ntbm_tmpa_clist -
73           \l_ntbm_include_nup_int * \l_ntbm_pages_total_int
74         }
75     }
76   \int_step_inline:nn { \int_use:N \l_ntbm_pages_total_int }
77     {
78       \clearpage
79       \__ntbm_empty_note_aux:
80       \int_step_inline:nn { \l_ntbm_include_nup_int }
81         {
82           \tikz [ remember~picture, overlay ]
83             \node [ xshift = \l_ntbm_include_ratio_dim/2,
84                   yshift = \fp_eval:n { -###1 + .5 } \l_ntbm_nup_dim
85                   ] at (current-page~text~area.north~west)

```

```

86         {
87             \includegraphics
88             [ height = \dim_eval:n
89               { \l__ntbm_nup_dim - \l__ntbm_include_sep_dim },
90               page = \clist_item:Nn \l__ntbm_tmpa_clist
91                 { #####1 + \l__ntbm_include_nup_int * ( ##1 - 1 ) }
92             ] {#1}
93         };
94     }
95     \clearpage
96 }
97 \__ntbm_empty_note_aux:
98 \int_step_inline:nn { \int_use:N \l__ntbm_pages_residue_int }
99 {
100     \tikz [ remember~picture, overlay ]
101     \node [ xshift = \l__ntbm_include_ratio_dim/2,
102            yshift = \fp_eval:n {( -##1 + .5 )} \l__ntbm_nup_dim
103            ] at (current~page~text~area.north~west)
104     {
105         \includegraphics
106         [ height = \dim_eval:n
107           { \l__ntbm_nup_dim - \l__ntbm_include_sep_dim },
108           page = \clist_item:Nn \l__ntbm_tmpa_clist
109             {
110               \l__ntbm_include_nup_int *
111               \l__ntbm_pages_total_int + ##1
112             }
113         ] {#1}
114     };
115 }
116 \clearpage
117 }

```

(End of definition for `\__ntbm_include_aux:n`)

`\__ntbm_empty_note_aux:` Define the auxiliary command for creating empty note line page.

```

118 \cs_new_protected_nopar:Nn \__ntbm_empty_note_aux:
119 {
120     \begin { tikzpicture } [ remember~picture, overlay ]
121     \draw [ very~thick, \l__ntbm_include_color_tl, opacity = .8 ]
122         (current~page~text~area.north~west) --
123         (current~page~text~area.north~east)
124     node [ at~start, above~right, font = \Large \bfseries ]
125         { \l__ntbm_include_lhead_tl }
126     node [ above~left, font = \Large \bfseries ]
127         { \l__ntbm_include_rhead_tl };
128     \draw [ very~thick, \l__ntbm_include_color_tl, opacity = .8 ]
129         (current~page~text~area.south~west) --
130         (current~page~text~area.south~east);
131     \int_step_inline:nn { \l__ntbm_include_lines_int - 1 }
132     {
133         \draw [ thick, \l__ntbm_include_color_tl, opacity = .6 ]
134             ([xshift = \l__ntbm_include_ratio_dim,
135              yshift = -\textheight/\l__ntbm_include_lines_int * ##1

```

```

136     ]current~page~text~area.north~west) --++
137     (\dim_eval:n { \textwidth - \l__ntbm_include_ratio_dim },0);
138     \bool_if:nT \l__ntbm_include_lineno_bool
139     {
140         \node [ font = \footnotesize, \l__ntbm_include_color_tl,
141             opacity = .4, right ] at
142             ([xshift = \textwidth,
143             yshift = -\textheight/\l__ntbm_include_lines_int * (##1 - .5)
144             ]current~page~text~area.north~west)
145             { \int_eval:n { ##1 } };
146     }
147 }
148 \node [ font = \footnotesize, \l__ntbm_include_color_tl,
149     opacity = .4, right ] at
150     ([xshift = \textwidth,
151     yshift = -\textheight + \textheight/\l__ntbm_include_lines_int * .5
152     ]current~page~text~area.north~west)
153     { \int_eval:n { \l__ntbm_include_lines_int } };
154 \end { tikzpicture }
155 \pagestyle { empty }
156 }

```

(End of definition for \\_\_ntbm\_empty\_note\_aux:.)

\l\_\_ntbm\_tmpa\_seq Store the results of 2D array segmentation.

\l\_\_ntbm\_tmpb\_seq 157 \seq\_new:N \l\_\_ntbm\_tmpa\_seq

158 \seq\_new:N \l\_\_ntbm\_tmpb\_seq

(End of definition for \l\_\_ntbm\_tmpa\_seq and \l\_\_ntbm\_tmpb\_seq)

\\_\_ntbm\_range\_to\_list:nN Convert the combination of number and number range to a list.

```

159 \cs_new_protected_nopar:Npn \__ntbm_range_to_list:nN #1#2
160 {
161     \clist_clear:N #2
162     \seq_set_split:Nnn \l__ntbm_tmpa_seq { , } {#1}
163     \seq_map_inline:Nn \l__ntbm_tmpa_seq
164     {
165         \tl_if_in:nnTF {##1} { - }
166         {
167             \seq_set_split:Nnn \l__ntbm_tmpb_seq { - } {##1}
168             \int_step_inline:nnn
169             { \seq_item:Nn \l__ntbm_tmpb_seq { 1 } }
170             { \seq_item:Nn \l__ntbm_tmpb_seq { 2 } }
171             { \clist_put_right:Nn #2 {###1} }
172         } { \clist_put_right:Nn #2 {##1} }
173     }
174 }

```

(End of definition for \\_\_ntbm\_range\_to\_list:nN)

175 </package>



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