May 23, 2023

Using Beamer in RMarkdown: Change nested list item bullet type

I've recently gotten started with using Beamer in RMarkdown (RMD). Some of the Beamer advice is for those using Latex or other programs directly, so I thought I would share how to incorporate some minor template changes for things such as bullet points when working with Beamer in RMarkdown.

First, let's create a 3-level nested list in the RMD file itself:

````
---
title: "Nested List Blog Post"
author: "Catherine Moez"
date: "May 23, 2023"
output: beamer_presentation
---

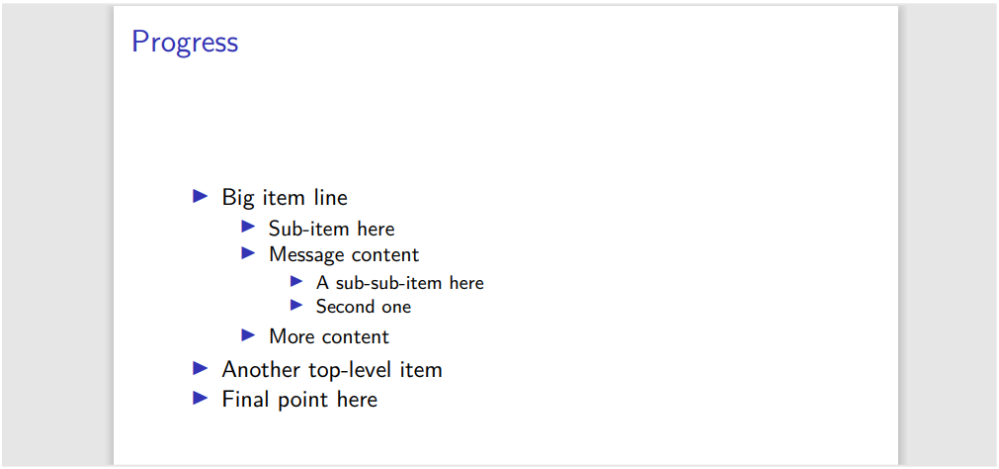
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = T)
# header-includes for extra top of doc latex code
#   - \setbeamertemplate{itemize subsubitem}{\scriptsize$\square$}
#   - \setbeamertemplate{itemize subsubitem}{\scriptsize$>>$} # any literal text or ltx symb
```

# Progress

- Big item line
    + Sub-item here
    + Message content
        + A sub-sub-item here
        + Second one
    + More content
- Another top-level item
- Final point here
````

Make sure to put 4 spaces before a sub-item's symbol, and 4+4 spaces before a sub-sub-item's symbol.

This outputs as all triangles:



To change the bullet point style:

We can make Latex commands to set the style, but we must put these in the RMD header section, under "header-includes:" as follows:

```
---
title: "Nested List Blog Post"
author: "Catherine Moez"
date: "May 23, 2023"
output: beamer_presentation
header-includes:
  - \setbeamertemplate{itemize subitem}{\scriptsize$\diamond$}
  - \setbeamertemplate{itemize subsubitem}{\scriptsize$\gg$}
---

```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = T)
# header-includes for extra top of doc latex code
#   - \setbeamertemplate{itemize subsubitem}{\scriptsize$\square$}
#   - \setbeamertemplate{itemize subsubitem}{\scriptsize$>>$} # any literal text or ltx symb
```

Progress

- Big item line
    + Sub-item here
    + Message content
        + A sub-sub-item here
        + Second one
    + More content
- Another top-level item
- Final point here
```

Or, if changing all three levels, we can specify a new style for 'item', 'subitem', and 'subsubitem':

```
title: "Nested List Blog Post"
author: "Catherine Moez"
date: "May 23, 2023"
output: beamer_presentation
header-includes:
  - \setbeamertemplate{itemize item}{\scriptsize$\Longrightarrow$}
  - \setbeamertemplate{itemize subitem}{\scriptsize$\diamond$}
  - \setbeamertemplate{itemize subsubitem}{\scriptsize$\gg$}

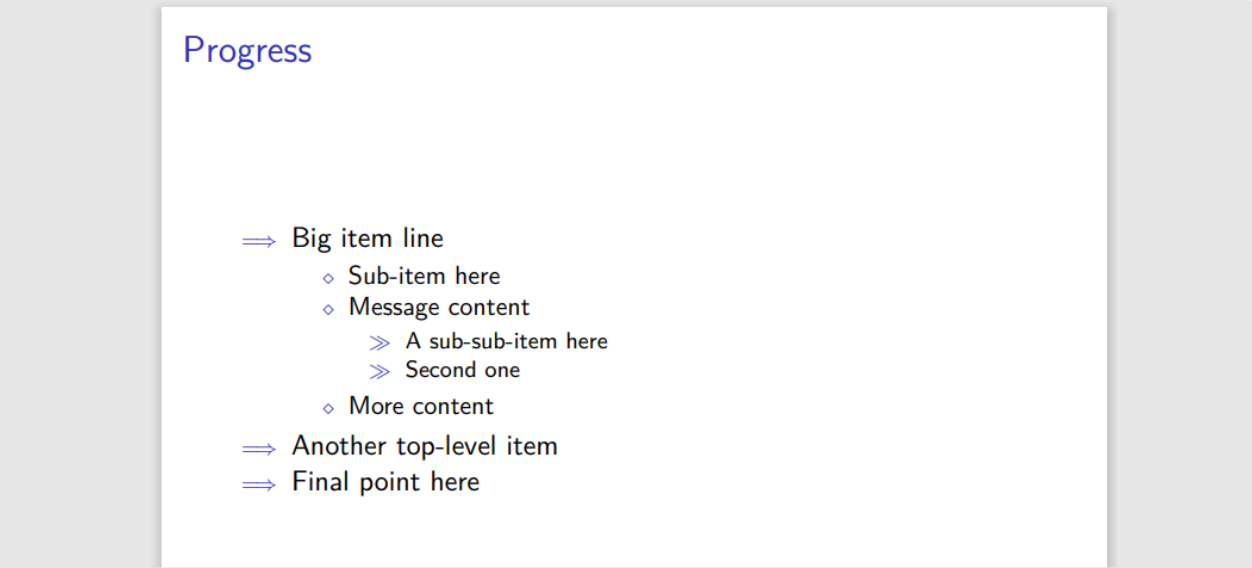
---

```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = T)
# header-includes for extra top of doc latex code
#   - \setbeamertemplate{itemize subsubitem}{\scriptsize$\square$}
#   - \setbeamertemplate{itemize subsubitem}{\scriptsize$>>$} # any literal text or ltx symbl
```

Progress

- Big item line
    + Sub-item here
    + Message content
        + A sub-sub-item here
        + Second one
    + More content
- Another top-level item
- Final point here
```

We then have the changed bullet style when knitting the document to PDF, or to another output format:



For more symbols, try substituting in “\square”, “\circle”, “\ball”, and so on, between the $ signs. The escape backslash is needed if using Latex symbols, but literal text you wish to use as a bullet point symbol (“X”, “o”, “>>”) can be inserted without a backslash.

Done!

Solution patched together from (https://latex-beamer.com/faq/bullet-style/) (Latex); (https://stackoverflow.com/questions/59741387/specify-innertheme-for-an-rmarkdown-beamer-presentation) (RMarkdown integration of Latex commands).

What are the options for the bullet point symbols?

Your options for the bullet point symbols are:

1. Frequent Beamer options seem to be: “\default”, “\triangle”, “\circle”, “\square”, and “\ball”. Insert these between the dollar sign symbols in the appropriate header line, where ‘’\bowtie”, “\gg”, and “\diamond” are shown above.
2. Any literal text within the dollar sign marks. Do not put the escape backslash.
3. Any special symbol possible in Latex, within the $$ boundaries and preceded with an escape backslash. A full list is here: (https://oeis.org/wiki/List_of_LaTeX_mathematical_symbols).
4. Additional Wingdings glyphs are found here: (https://tex.stackexchange.com/questions/535875/including-specific-glyph-from-wingdings), and the code for inserting them in Latex is from here: (https://latex-beamer.com/faq/bullet-style/); (https://latex-tutorial.com/bullet-styles/). You will need to insert the line “ - \usepackage:{pifont}” into the header lines to access the Wingding symbols – see end of document for examples. Wingding symbols have an escape slash, but no $ signs around them.

You can also take out the \scriptsize command; the second curly bracket entry should look like: {“\ball”}

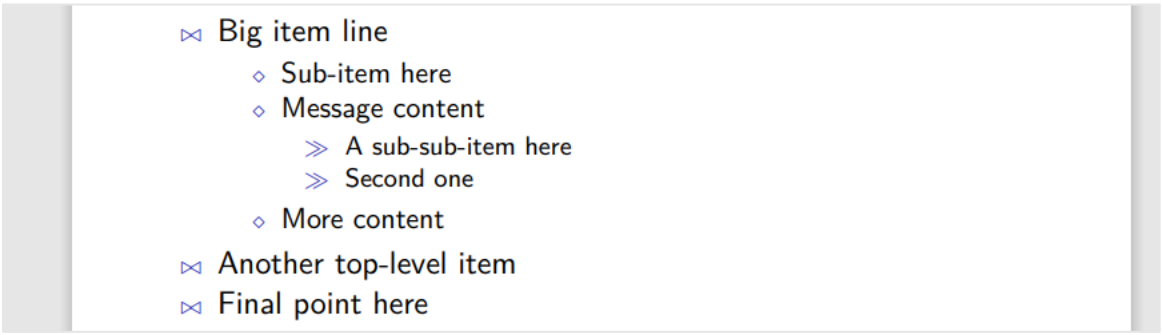
Some variations:

1. **With other Latex symbols:**

Code:

```
header-includes:
 - \setbeamertemplate{itemize item}{\scriptsize$\bowtie$}
 - \setbeamertemplate{itemize subitem}{\scriptsize$\diamond$}
 - \setbeamertemplate{itemize subsubitem}{\scriptsize$\gg$}
```

Result:

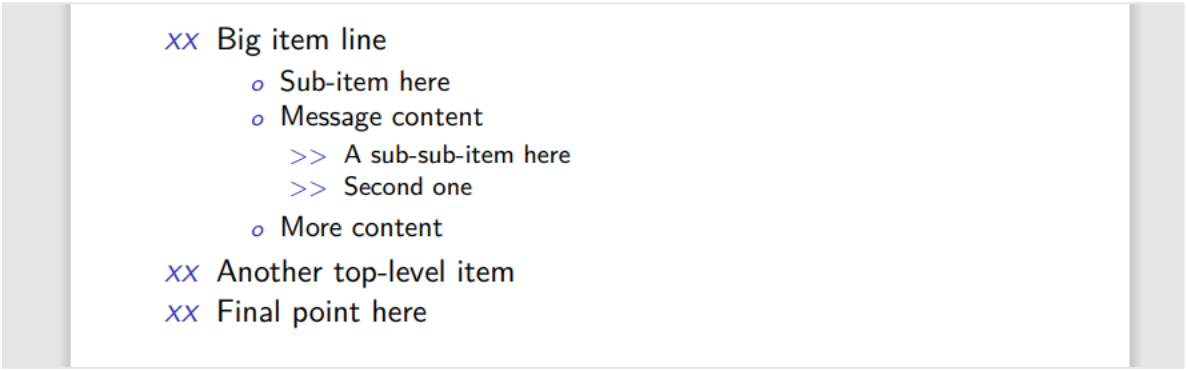


2. **With literal text as symbols**

Code:

```
header-includes:
 - \setbeamertemplate{itemize item}{\scriptsize$XX$}
 - \setbeamertemplate{itemize subitem}{\scriptsize$o$}
 - \setbeamertemplate{itemize subsubitem}{\scriptsize$>>$}
```

Result:



Please note that some colour and italicisation choices may be overwritten by your style theme.

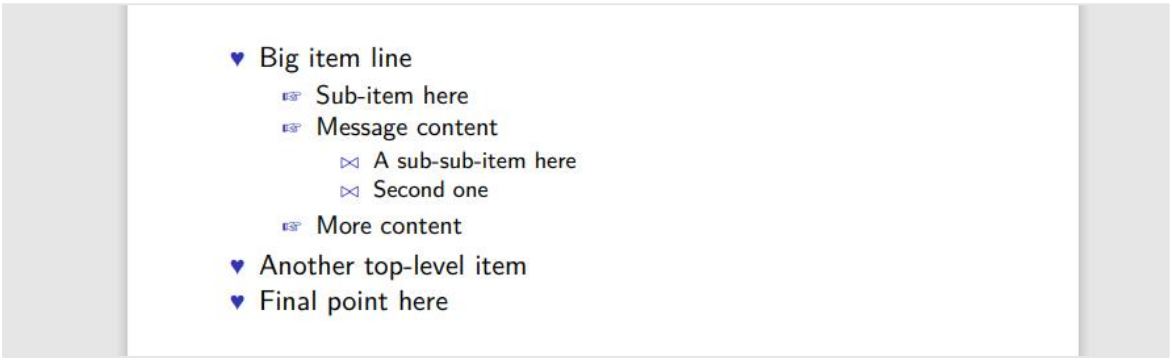
3. With Wingding symbols

R code:

```
header-includes:
  - \usepackage{pifont}
  - \setbeamertemplate{itemize item}{\scriptsize\ding{170}}
  - \setbeamertemplate{itemize subitem}{\scriptsize\ding{43}}
  - \setbeamertemplate{itemize subsubitem}{\scriptsize$\bowtie$}
```

(Note the newly added usepackage line, to access a Latex package. The last line is also not a Wingding character – the different symbol types can be mixed).

Result:

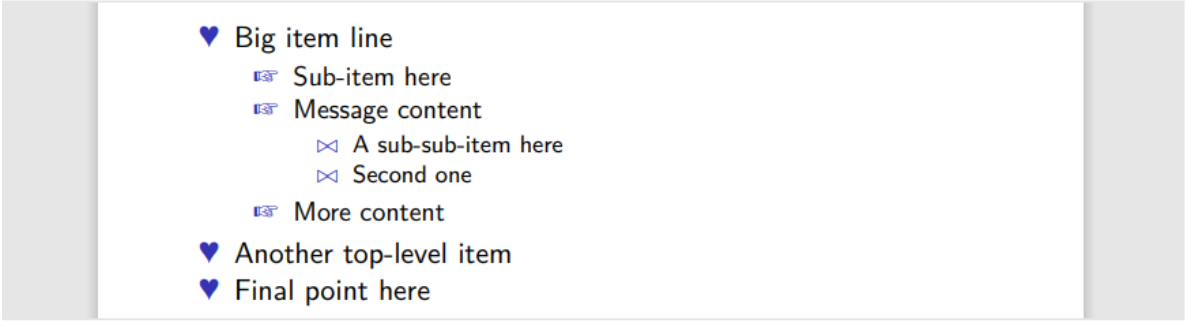


Or without the scriptsize command –

Code:

```
header-includes:
  - \usepackage{pifont}
  - \setbeamertemplate{itemize item}{\ding{170}}
  - \setbeamertemplate{itemize subitem}{\ding{43}}
  - \setbeamertemplate{itemize subsubitem}{$\bowtie$}
```

Result:



Enjoy!