Package citations and references

Problem

In the book I refer to the *first* use of a package in the text with the package name in bold and citation: `**lattice**` `package [@R-lattice]`; thereafter, I just use **lattice**. All packages used in the book have their BibTeX references in `bib/packages.bib`, and the keys are all of the form `R-pkgname`.

I would prefer to have the package name appear in (a) a distinctive font, (b) in color if possible, (c) be able to generate the citations as needed, (d) and automatically generate index entries.

I'd like be able to do this in the text via an inline expression of the form "r pkg(package)". This should work for both HTML and PDF output. How can I do this?

LaTex / Rnw solution

In a previous book, written as `.Rnw`, I could do this with LaTeX macros, `\pkg{}`, `ixp{}`. Package names are printed in the font `\textsf{}`, a sans-serif font; monospaced (typewriter) would be `\texttt{}` (Color would also have been easy.)

```
% R packages:  indexed under both package name and packages!
\newcommand{\ixp}[1]{%
   \index{#1@\textsf{#1} package}%
   \index{package!#1@\textsf{#1}}%
    }

% data sets:
\newcommand{\ixd}[1]{%
        \index{data sets!#1}}

% R package citations
\def\pkg#1{\textsf{#1}\ixp{#1}\citex{#1}\xspace}
\def\citex#1{\expandafter\ifx\csname cit:#1\endcsname\relax
```

```
        \expandafter\gdef\csname cit:#1\endcsname{}%
        ~\citep{#1}%
    \else
        \nocite{#1}%
    \fi
}
```

```r
source(here::here("R", "common.R"))
```

Colored text

In [How to use colored text in Quarto figure captions](#) I discuss using colored text for both HTML and PDF output, using this function:

```r
colorize <- function(text, color) {
  if (missing(color)) color <- text
  if (knitr::is_latex_output()) {
    sprintf("\\textcolor{%s}{%s}", color, text)
  } else if (knitr::is_html_output()) {
    sprintf("<span style='color: %s;'>%s</span>", color, text)
  } else text
}
```

So, in normal text, I can use `colorize()` to print text in red, blue, green, …

Packages

Here's what I have so far. I don't know how to change the font or color of the package name in the text.

Trying to change the color of the `pkgname` doesn't work in HTML or in PDF, probably because the `paste0("`", pkgname,"`")` just treats the text inside as is. Is there a way to use a distinctive font without this?

```r
pkg <- function(package, cite=FALSE, color="brown") {
  pkgname <- if(is.null(color)) package else colorize(package, color)
  ref <- paste0("`", pkgname, "`")
  if (cite) ref <- paste0(ref, " [@R-", package, "]")
  if (knitr::is_latex_output()) {
```

```
    ref <- paste0(ref, "\\index{`",package, "`}\\index{package!`", package, "`}")
      }

  ref
}
```

So, I can now refer to `\textcolor{brown}{ggplot2}` (Wickham et al. 2023) which I like better than `\textcolor{brown}{lattice}` (Sarkar 2024). But I don't want a citation for `\textcolor{brown}{car}`, so I used `cite=FALSE`.

References

Sarkar, Deepayan. 2024. *Lattice: Trellis Graphics for R*. https://lattice.r-forge.r-project.org/.

Wickham, Hadley, Winston Chang, Lionel Henry, Thomas Lin Pedersen, Kohske Takahashi, Claus Wilke, Kara Woo, Hiroaki Yutani, and Dewey Dunnington. 2023. *Ggplot2: Create Elegant Data Visualisations Using the Grammar of Graphics*. https://CRAN.R-project.org/package=ggplot2.