

# Demonstration on the usage and configuration of “cleveref-forward”

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## 1 With the default configuration

### 1.1 Theorem-like environments

**LEMMA 1.1.** (Used by **THEOREM 1.2.**)

*Some preliminary result (see the equation (2)).*

**THEOREM 1.2.** *Text.*

*Proof.* Some proof that involves the **LEMMA 1.1** and the equations (1), (2) and (3) in the next section. Here, `\restorelabel` makes sure that this proof environment is being recognized as the theorem itself. 

### 1.2 Equations

By default, the forward referencing information is placed immediately after the equation.

$$e^{i\pi} + 1 = 0. \tag{1}$$

(Used by **THEOREM 1.2** on page 1.)

However, with this method, for multilined equations with multiple references, only the last reference will be shown:

$$1 = 0 + 1 \tag{2}$$

$$2 = 1 + 1 \tag{3}$$

(Used by **THEOREM 1.2.**)

This can be overcome if you are willing to place the text message in the margin, see the section on customization.

### 1.3 Other types

It can also be used for some other types, such as items in enumerate list, as long as `cleveref` is properly configured for that type.

## 2 Specify a default option

If you wish to apply the mode `used on`, or `used by`, or `used by and on` to all `\cref` (and `\labelcref`, etc.), you can use the package option `default=<mode>`. Then you don't need to write it everywhere. And if you wish to manually change this `<mode>` somewhere, you can still specify it as the command option; and if you don't want the message to display for some references, you may also use the option `no use` on the corresponding `\label` to disable the related messages.

### 3 Customizations

Here is how you change the appearing text:

---

```
\SetUsedOnMessageText{Appears on~#1.}
\SetUsedByMessageText{Appears in~#1.}
\SetUsedByAndOnMessageText{Appears in~#1 on~#2.}
```

---

And here is an example of setting the message style with the package `todonotes`:

---

```
\SetForwardReferenceStyle
{%
  \todo[%
    inline,
    size=\scriptsize,
    color=blue!40,
    backgroundcolor=white,
    textcolor=blue!50!cyan,
    bordercolor=blue!50!cyan,
    noprepend]{%
    \textup{#1}}%
  }%
}
\SetForwardReferenceStyleOutsideMath
{%
  \todo[%
    inline,
    size=\scriptsize,
    caption={}, % <-- needed, otherwise there would be errors
    color=blue!40,
    backgroundcolor=white,
    textcolor=blue!50!cyan,
    bordercolor=blue!50!cyan,
    noprepend]{%
    \textup{#1}}%
  }%
}
```

---

We use the same example:

**LEMMA 3.1.**

Appears in **THEOREM 3.2.**

*Some preliminary result (see the equation (5)).*

**THEOREM 3.2.** *Text.*

*Proof.* Some proof that involves the **LEMMA 3.1** and the equations (4), (5) and (6). ■

$$e^{i\pi} + 1 = 0. \tag{4}$$

Appears in THEOREM 3.2 on page 2.

$$1 = 0 + 1 \tag{5}$$

$$2 = 1 + 1 \tag{6}$$

Appears in THEOREM 3.2.

As you might have noticed, `\SetForwardReferenceStyleOutsideMath` is for setting the style of those messages that appear outside the equations.

There is also a `\SetForwardReferenceStyleInsideMath`, which triggers the message immediately at where you placed the label. This way it is only plausible to put the message inside the margin. For example, with the package `marginnote` loaded, you may configure:

```
\SetForwardReferenceStyle
{
  \marginnote{\normalfont#1}%
}
\SetForwardReferenceStyleInsideMath
{
  \marginnote{\normalfont#1}%
}
```

The result would be somewhat like the following (assuming that your document has margins set wide enough):

**LEMMA 3.3.** *Some preliminary result (see the equation (8)).* Appears in **THEOREM 3.4.**

**THEOREM 3.4.** *Text.*

*Proof.* Some proof that involves the **LEMMA 3.3** and the equations (7), (8) and (9). ■

$$e^{i\pi} + 1 = 0. \tag{7} \text{ Appears in THEOREM 3.4 on page 3.}$$

$$1 = 0 + 1 \tag{8} \text{ Appears in LEMMA 3.3 and THEOREM 3.4.}$$

$$2 = 1 + 1 \tag{9} \text{ Appears in THEOREM 3.4.}$$

#### ATTENTION

Please pay attention to the usage of #1 and #2 in the configurations.

By the way, here is the default setting for the style:

```
\SetForwardReferenceStyle
{
  \emph{#1} \[.3\baselineskip]%
}
\SetForwardReferenceStyleOutsideMath
{
  \begin{flushright}%
  \emph{#1}%
  \end{flushright}%
  \vspace{.15\baselineskip}%
}
```

## 4 Besides writing in English

When writing in some European languages, it is possible to specify the definite article and/or declension in the optional argument of `\cref` to ensure that the grammar is correct, provided that you have enabled the package option `crefthe`.

### 4.1 Example in French

**LEMME 4.1.** *Quelques résultats préliminaires (voir l'équation (11)).* (Apparaît dans le théorème 4.2.)

**THÉORÈME 4.2.** *Texte.*

*Démonstration.* Quelques lignes de preuves résultant du lemme 4.1 et des équations (10), (11) et (12). ■

$$e^{i\pi} + 1 = 0. \quad (10) \quad (\text{Apparaît dans le théorème 4.2 en page 4.})$$

$$1 = 0 + 1 \quad (11) \quad (\text{Apparaît dans le lemme 4.1 et le théorème 4.2.})$$

$$2 = 1 + 1 \quad (12) \quad (\text{Apparaît dans le théorème 4.2.})$$

### 4.2 Example in German

**LEMMA 4.3.** *Einige vorläufige Ergebnisse (siehe Gleichung (14)).* (Wird vom Satz 4.4.)

**SATZ 4.4.** *Text.*

*Beweis.* Einige Beweise, die das Lemma 4.3 und die Gleichungen (13), (14) und (15). ■

$$e^{i\pi} + 1 = 0. \quad (13) \quad (\text{Wird vom Satz 4.4 auf Seite 4.})$$

$$1 = 0 + 1 \quad (14) \quad (\text{Wird vom Lemma 4.3 und dem Satz 4.4.})$$

$$2 = 1 + 1 \quad (15) \quad (\text{Wird vom Satz 4.4.})$$

### 4.3 Example in Italian

**LEMMA 4.5.** *Alcuni risultati preliminari (vedi l'equazione (17)).* (Appare nel teorema 4.6.)

**TEOREMA 4.6.** *Testo.*

*Dimostrazione.* Alcune linee di prova derivanti dal lemma 4.5 e dalle equazioni (16), (17) e (18). ■

$$e^{i\pi} + 1 = 0. \quad (16) \quad (\text{Appare nel teorema 4.6 a pagina 5.})$$

$$1 = 0 + 1 \quad (17) \quad (\text{Appare nel lemma 4.5 e nel teorema 4.6.})$$

$$2 = 1 + 1 \quad (18) \quad (\text{Appare nel teorema 4.6.})$$

### 4.4 Example in Spanish

**LEMA 4.7.** *Algunos resultados preliminares (véase la ecuación (20)).* (Aparece en el teorema 4.8.)

**TEOREMA 4.8.** *Texto.*

*Demostración.* Algunas líneas de demostración resultantes del lema 4.7 y las ecuaciones (19), (20) y (21). ■

$$e^{i\pi} + 1 = 0. \quad (19) \quad (\text{Aparece en el teorema 4.8 en la página 5.})$$

$$1 = 0 + 1 \quad (20) \quad (\text{Aparece en el lema 4.7 y el teorema 4.8.})$$

$$2 = 1 + 1 \quad (21) \quad (\text{Aparece en el teorema 4.8.})$$

### 4.5 Regarding the customization

If you wish to change the content of the messages in such cases, you might need to be careful about the definite article and declension involved. For example, in German, if you wish to change the text to “Erscheint in ... auf ...” (*Appears in ... on ...*), you need to write:

```
\SetUsedOnMessageText{Erscheint auf~#1.}
\SetUsedByMessageText{Erscheint #1.}
\SetUsedByAndOnMessageText{Erscheint #1 auf~#2.}
\SetForwardReferenceRefForm{\crefthe[in,dot.]}
\SetForwardReferencePagerefForm{\cpagerefthe[noun]}
```

which set the `\cref` command to use the definite article “in” and the declension “Dativ”, and hide the definite article when using `\cpageref`.