The `regexmath` Package

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2023/02/21

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1 Examples

```
\ReMConfigNew{default}
\ReMConfigSetCurrent{default}
```

Example 1: Embolden vector symbols in inline equations

```
\ReMDisable % disable regexmath for config change
\ReMConfigClearRe % clear regex in current config

% suppose in our notation system, letters A, x, b, c represent vectors
%   while others are scalars
\ReMConfigAddRe{([Axbc])}{\c{boldsymbol}{\1}}
% in replacement text, \c{} constructs a command with given name;
%   \1 stands for the first capture group

\ReMEnable % enable regexmath

We have a linear system $Ax=b$ and another scalar equation $Cy=d$.
Suppose $ux+vb=c$.
```

We have a linear system $\boldsymbol{A}\boldsymbol{x} = \boldsymbol{b}$ and another scalar equation $Cy = d$. Suppose $u\boldsymbol{x} + v\boldsymbol{b} = \boldsymbol{c}$.

Example 2: Embolden vector symbols in display equations

```
\ReMDisable % disable regexmath for config change
\ReMConfigClearRe % clear regex in current config

% add the set of display environments where regexmath should be enabled
\ReMConfigAddDispEnvs{align*,gather*} % only add two unnumbered envs

% using the same setup as Example 1
\ReMConfigAddRe{([Axbc])}{\c{boldsymbol}{\1}}

\ReMEnable % enable regexmath

This is a linear system
\begin{align*}
    Ax + sc &= \lambda b,\\
    c &= kb.
\end{align*}
This is the same linear system
\begin{gather*}
    Ax + sc = \lambda b,\\
    c = kb.
\end{gather*}
% numbered environments are unchanged
Below is just some equations
\begin{align}
    Ax + sc &= \lambda b,\\
    c &= kb.
\end{align}
The same set of equations
\begin{gather}
    Ax + sc = \lambda b,\\
    c = kb.
\end{gather}
```

This is a linear system

$$\begin{aligned} \boldsymbol{Ax} + s\boldsymbol{c} &= \lambda \boldsymbol{b}, \\ \boldsymbol{c} &= k\boldsymbol{b}. \end{aligned}$$

This is the same linear system

$$\begin{aligned} \boldsymbol{Ax} + s\boldsymbol{c} &= \lambda \boldsymbol{b}, \\ \boldsymbol{c} &= k\boldsymbol{b}. \end{aligned}$$

Below is just some equations

$$\begin{aligned} Ax + sc &= \lambda b, && (1) \\ c &= kb. && (2) \end{aligned}$$

The same set of equations

$$\begin{aligned} Ax + sc &= \lambda b, && (3) \\ c &= kb. && (4) \end{aligned}$$

Example 3: Simplified matrices

```
\ReMDisable % disable regexmath for config change
\ReMConfigClearRe % clear regex in current config

% define simplified vector notations
\ReMConfigAddRe{\[\[]}{\c{begin}{bmatrix}}
\ReMConfigAddRe{\]\]}{\c{end}{bmatrix}}
\ReMConfigAddRe{\|\(}{\c{begin}{vmatrix}}
\ReMConfigAddRe{\|\)}{\c{end}{vmatrix}}
% embolden all letters
\ReMConfigAddRe{([A-Za-z])}{\c{boldsymbol}{\1}}

\ReMEnable % enable regexmath

% we have added two display environments (align*,gather*) to the config in Example 2
\begin{align*}
    |(
        [[C \\ I]] & \mathbf{0}\\
        \mathbf{0} & [[ I \\ [B+(Ax+c)] ]]
    |)
\end{align*}
```

$$\left|\begin{bmatrix}\boldsymbol{C}\\ \boldsymbol{I}\end{bmatrix} \quad \mathbf{0} \right.$$
$$\left. \mathbf{0} \quad \begin{bmatrix}\boldsymbol{I}\\ [\boldsymbol{B}+(\boldsymbol{A}\boldsymbol{x}+\boldsymbol{c})]\end{bmatrix}\right|$$