pattern-writing 0.1

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1 Introduction

This is a LaTeXstyle to help writing pattern languages [Wik].

2 Code

2.1 Option Processing

index
noindex
graph
nograph

The style accepts two pair of options.

index/noindex controls if a index will be generated

graph/nograph controls if it will be possible to generate and use a graph

The default is index and graph

```
1 \newif\if@showindex\@showindextrue%
2 \newif\if@showgraph\@showgraphtrue%
3 \newif\if@graphstarted\@graphstartedfalse%
```

```
4 %
5 \DeclareOption{index}{\@showindextrue}%
6 \DeclareOption{noindex}{\@showindexfalse}%
7 \DeclareOption{graph}{\@showgraphtrue}%
8 \DeclareOption{nograph}{\@showgraphfalse}%
9 %
10 \ProcessOptions\relax%
```

2.2   Required Packages

pattern-writing requires xparse to use NewDocumentCommand and other syntax, requires xcolor to color anti-patterns, makeidx to control the index of patterns and tikz and sub-packages to draw the graph

```
11 \RequirePackage{xparse}%
12 \RequirePackage{xcolor}%
13 \if@showindex%
14 \RequirePackage{makeidx}%
15 \fi%
16 \if@showgraph%
17 \RequirePackage{pgf,tikz}%
18 \usetikzlibrary {graphs}
19 %%\usetikzlibrary {graphs.standard}
20 \usetikzlibrary{graphdrawing}
21 \usegdlibrary{circular,trees,force,layered}
22 \fi%
23 %%%%%%%% Support to graph
24 %
25 % \subsection{Graph Support}
26 %  With we use graph, some settings muste be enalbe
27 %
28 \if@showgraph%
29 \def\p@filename{graph.tikz}%
30 \def\p@CurrentPattern{ZERO}%
31 \def\p@GraphLayout{spring layout, node distance = 80mm}
32 \NewDocumentCommand{\psetfilename}{m}{%
33     \def\p@filename{#1}%
34 }%
```

\pstartgraph   This macro starts the processing of declarations to create the graph https://tex.stack-exchange.com/questions/115932/on-the-basics-of-writing-to-reading-from-auxiliary-files-aux-toc-etc

```
35 \NewDocumentCommand{\pstartgraph}{}{%
36     \newwrite\p@fileh%
37     \immediate\openout\p@fileh=\p@filename%
38     % tryed tikz, problem with accents
39     \immediate\write\p@fileh{\unexpanded{\resizebox{\textwidth}{!}}\@charlb\unexpanded{\begin{t
40     \@graphstartedtrue
```

```latex
41 }%
42 \begin\NewDocumentCommand{\pstopgraph}{}{%
43     \immediate\write\p@fileh{\@charrb \unexpanded{;\end{tikzpicture}}\@charrb}%
44     \immediate\closeout\p@fileh%
45     \@graphstartedfalse
46 }%

47 \NewDocumentCommand{\setPatternGraphLayout}{m}{%
48     \def\p@GraphLayout{#1}%
49 }%
50 \NewDocumentCommand{\pgetgraph}{}{%
51     \IfFileExists{\p@filename}%
52     {\input{\p@filename}}%
53     {}%
54 }%
55 \NewDocumentCommand{\pnode}{m}{%
56     \if@graphstarted
57     \immediate\write\p@fileh{"#1";}%
58     \def\p@CurrentPattern{#1}%
59     \fi
60 }%
61 \NewDocumentCommand{\pedge}{om}{%
62     \if@graphstarted
63     \IfNoValueTF{#1}
64     {\immediate\write\p@fileh{"\p@CurrentPattern" -- "#2";}}%
65     {\immediate\write\p@fileh{"#1" -- "#2";}}%
66     \fi
67 }%
68 \else  % Nada
69 \def\p@filename{graph.tikz}%
70 \def\p@currentPattern{ZERO}%
71 \NewDocumentCommand{\psetfilename}{m}{}%
72 \NewDocumentCommand{\pstartgraph}{}{}%
73 \NewDocumentCommand{\pstopgraph}{}{}%
74 \NewDocumentCommand{\pgetgraph}{}{\includegraphics[width=\textwidth]{example-
   image-a}}%
75 \NewDocumentCommand{\psetcurrentpattern}{m}{%
76 }%
77 \NewDocumentCommand{\pgetcurrentpattern}{}{%
78 }%
79 \NewDocumentCommand{\pnode}{m}{}%
80 \NewDocumentCommand{\pedge}{om}{}%
81 \NewDocumentCommand{\setPatternGraphLayout}{m}{}%
82 \fi
```

2.3 Patterns

\pattern   This macro declares a pattern (as a subsection).

```
83 \NewDocumentCommand{\pattern}{m}{\subsection{#1}\label{sec:#1}%
84     \if@showindex%
85     \index{#1|textbf}%
86     \fi%
87     \if@showgraph%
88     \pnode{#1}
89     \fi
90 }%
```

\patternref This macro makes a reference to a pattern, possibly changing the text in its option

```
91 \NewDocumentCommand{\patternref}{om}{%
92     \IfNoValueTF{#1}%
93     {\hyperref[sec:#2]{\textbf{#2}}}%
94     {\hyperref[sec:#2]{\textbf{#1}}}%
95     \if@showindex%
96     \index{#2}%
97     \fi%
98     \if@showgraph%
99     \pedge{#2}
100    \fi
101 }%
```

2.4   Anti-Patterns

\antipattern This macro declares anti-pattern (as red text).

```
102 \NewDocumentCommand{\antipattern}{m}{\textcolor{red}{#1}%
103     \label{sec:#1}%
104     \if@showindex%
105     \index{\textcolor{red}{#1}|textbf}%
106     \fi%
107 }%
```

\antipatternref This macro makes a reference to an anti-pattern, also in red text

```
108 \NewDocumentCommand{\antipatternref}{om}{%
109     \IfNoValueTF{#1}%
110     {\hyperref[sec:#2]{\textcolor{red}{\textbf{#2}}}}%
111     {\hyperref[sec:#2]{\textcolor{red}{\textbf{#1}}}}%
112     \if@showindex%
113     \index{\textcolor{red}{#2}}%
114     \fi%
115 }%
```

2.5   Pattern Writing Styles

```
116 \NewDocumentCommand{\portland}{mm}{\textbf{SE~}%
```

```
117    #1%
118    \textbf{~ENTÃO~} #2}%
119 %
120 \NewDocumentCommand{\coplien}{mmmmmm}{%
121    \textbf{Problema}: #1 \par
122    \textbf{Contexto}: #2\par
123    \textbf{Forças}: #3 \par
124    \textbf{Solução}: #4 \par
125    \textbf{Raciocínio}: #5 \par
126    \textbf{Contexto Resultante}: #6 \par
127 }%
128 \if@showindex%
129 \makeindex%
130 \fi%
```

References

[Wik]   C2 Wiki. *Pattern Definition Thread*. URL: https://wiki.c2.com/?PatternDefinitionThread (visited on 10/22/2021).