The pgfkeysearch Package
A Search Extension for pgfkeys
Version 1.2

Alceu Frigeri*

April 2025

Abstract

The command \pgfkeysvalueof, unlike other \pgfkeys commands, doesn't have a *.unknown* handler, or offers the option to search for a key. That's exactly the aim of this, by having a way to find a key in a given path (or collection of paths).

1 Searching for a key

\pgfkeysearchvalueof	\pgfkeysearchvalueof {⟨path-list⟩} {⟨key⟩} {⟨macro⟩}
\pgfkeysearch	\pgfkeysearch {⟨path-list⟩} {⟨key⟩} {⟨macro⟩}
\pgfkeysearchvalueof*TF*	\pgfkeysearchvalueof*TF* {⟨path-list⟩} {⟨key⟩} {⟨macro⟩} {⟨if-found⟩} {⟨if-not⟩}
\pgfkeysearch*TF*	\pgfkeysearch*TF* {⟨path-list⟩} {⟨key⟩} {⟨macro⟩} {⟨if-found⟩} {⟨if-not⟩}

update: 2024/01/11

⟨path-list⟩ is a comma separated list (clist) of paths (can be a single one). ⟨key⟩ is the desired key and ⟨macro⟩ is the macro/command that will receive (store) the key value (if one was found). For instance, given a path /A/B/C/D it will look first at /A/B/C/D/⟨key⟩, them /A/B/C/⟨key⟩, and so on, until /A/⟨key⟩, stopping at the first hit, returning the value found in the ⟨macro⟩. The branch version will also execute either ⟨if-found⟩ or ⟨if-not⟩.

Note: \pgfkeysearch and \pgfkeysearchvalueof are aliases to each other. Same with \pgfkeysearchvalueof*TF* and \pgfkeysearch*TF*.

Note: These commands aren't expandable, that's the reason to have them storing the key value in a macro and not just placing the found value in the input stream.

LaTeX Code:

```
\pgfkeys{/tikz/A/.cd,
 keyA/.initial={keyA at /tikz/A},
 keyB/.initial={keyB at /tikz/A},
 B/.cd,
 keyA/.initial={keyA at /tikz/A/B},
 keyC/.initial={keyC at /tikz/A/B},
 C/.cd,
 keyX/.initial={keyX at /tikz/A/B/C} }
\pgfkeysearchvalueof{/tikz/A/B/C}{keyA}{\VALkeyA}
\pgfkeysearchvalueof{/tikz/A/B/C}{keyB}{\VALkeyB}
\pgfkeysearchvalueof{/tikz/A/B/C}{keyC}{\VALkeyC}
\pgfkeysearchvalueof{/tikz/A/B/C}{keyX}{\VALkeyX}
I got for keyA: \textbf{\VALkeyA} \par
I got for keyB: \textbf{\VALkeyB} \par
I got for keyC: \textbf{\VALkeyC} \par
I got for keyX: \textbf{\VALkeyX} \par
```

LaTeX Result:

I got for keyA: **keyA at /tikz/A/B**
I got for keyB: **keyB at /tikz/A**
I got for keyC: **keyC at /tikz/A/B**
I got for keyX: **keyX at /tikz/A/B/C**

*https://github.com/alceu-frigeri/pgfkeysearch

2 Expl3 Base Commands

\pgfkeysearch_multipath_keysearch:nnnTF
\pgfkeysearch_keysearch:nnnTF

\pgfkeysearch_multipath_keysearch:nnnTF {⟨path-list⟩} {⟨key⟩} {⟨macro⟩} {⟨if-found⟩} {⟨if-not⟩}
\pgfkeysearch_keysearch:nnnTF {⟨single-path⟩} {⟨key⟩} {⟨macro⟩} {⟨if-found⟩} {⟨if-not⟩}

These are the *Expl3* version of it, for package writers. In fact, \pgfkeysearchvalueof, \pgfkeysearch, \pgfkeysearchvalueofTF and \pgfkeysearchTF are just wrappers to \pgfkeysearch_multipath_keysearch:nnnTF. The \pgfkeysearch_keysearch:nnnTF is the single path version and it's slightly faster than the more generic multi-path version (for a single path search, of course), given that \pgfkeysearch_multipath_keysearch:nnnTF calls \pgfkeysearch_keysearch:nnnTF for each path in ⟨path-list⟩.