

The `datax` package*

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1 Motivation

`datax` allows you to export data from your scripts, and import them as `siunitx` commands. This is analogous to how the author uses `graphicx` to programmatically generate graphics and include in a document.

2 Installation

Place `datax.sty` in a place where `LATEX` can find it (often `~/texmf/tex/latex/datax/datax.sty`). Run `texhash` if needed.

3 Usage

The package is loaded with `\usepackage[dataxfile=<data.tex>]{datax}`, which reads the file specified as *<dataxfile>*.

`\datax` From then on data can be inserted as `\datax{<tag>}`. If the file `data.tex` contains references to a string *s*, a number *x* and a physical constant *c*, then the macro produces this output:

Input	Output
<code>\datax{s}</code>	A literal string
<code>\datax{x}</code>	2.4
<code>\datax{c}</code>	$3 \times 10^8 \text{ m s}^{-1}$
<code>\datax{undefined}</code>	??

4 Interactions

Technically, `datax` only needs a data file consisting of a number of assignments: `\pgfkeyssetvalue{/datax/<tag>}{<value>}` but of course the entire point of the package is automation. For this, you need an interaction plugin for your script

*This document corresponds to `datax` v1.1, dated 2020/11/17.

language. If your language is not listed below, you might need to write this plugin for yourself, or request it.

Language	Plugin	Comments
julia	Datax.jl	By the current author
Matlab	Datax.m	By the current author

5 Implementation

```

1 \pgfkeys{ %
2 /packageoptions/dataxfile/.initial=data.tex, %
3 }
4 \ProcessPgfPackageOptions{/packageoptions}
5
6 \pgfkeys{ %
7 /datax/.is family, datax, %
8 .unknown/.code={ %
9 \pgfkeyssetvalue{ %
10 \pgfkeyscurrentpath/\pgfkeyscurrentname %
11 }{ %
12 #1 %
13 } %
14 }, %
15 }
16
17 \def\dataxfile{./\pgfkeysvalueof{/packageoptions/dataxfile}}
18 \InputIfFileExists{%
19 \dataxfile
20 }{}{
21 \PackageWarning{datax}{Cannot read file '\dataxfile'}
22 }

\datax Include datum from the specified data file.
23 \newcommand{\datax}[1]{
24 \pgfkeysifdefined{/datax/#1}{ %
25 \pgfkeysvalueof{/datax/#1} %
26 }{ %
27 \PackageWarning{datax}{Data value '#1' undefined}\textbf{??} %
28 } %
29 }
```