Package: vcd2df (via r-universe)

October 16, 2026

Title Value Change Dump to Data Frame

Version 1.0.1

Description Provides the 'vcd2df' function, which loads a IEEE 1364-1995/2001 VCD (.vcd) file, specified as a parameter of type string containing exactly a file path, and returns an R dataframe containing values over time. A VCD file captures the register values at discrete timepoints from a simulated trace of execution of a hardware design in Verilog or VHDL. The returned dataframe contains a row for each register, by name, and a column for each time point, specified VCD-style using octothorpe-prefixed multiples of the timescale as strings. The only non-trivial implementation details are that (1) VCD 'x' and 'z' non-numerical values are encoded as negative value -1 (as otherwise all bit values are positive) and (2) registers with repeated names in distinct modules are ignored, rather than duplicated, as we anticipate these registers to have the same values. Read more in arXiv preprint: 'vcd2df' -- Leveraging Data Science Insights for Hardware Security Research <doi:10.48550/arXiv.2505.06470>.

URL https://github.com/vcd2df/r

BugReports https://github.com/vcd2df/r/issues

License GPL-3

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

VignetteBuilder quarto

Suggests quarto

Repository https://vcd2df.r-universe.dev

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RemoteUrl https://github.com/vcd2df/r

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Contents

vcd2df 2

Index **3**

`vcd2df` *Read a value change dump (VCD) file and convert it to a data frame.*

Description

Read a value change dump (VCD) file and convert it to a data frame.

Usage

```
vcd2df(f_name)
```

Arguments

`f_name`	The path of a VCD (value change dump) file.

Value

A data frame with the values of the variables at each time point.

Examples

```
library(vcd2df)
f_name <- tempfile()
vcd <- 'https://github.com/vcd2df/vcd_ex/raw/refs/heads/main/nerv.vcd'
download.file(url = vcd, destfile = f_name)
df <- vcd2df(f_name)
```

Index

vcd2df, 2