

Package: ppgamer (via r-universe)

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Type Package

Title Players for Piecepack Games like Fuji-san

Version 0.2.0-1

Description Functions that provide players for piecepack games like a solver for ``Fuji-san".

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URL <https://github.com/piecepackr/ppgamer>,
<https://trevorldavis.com/R/ppgamer/>

BugReports <https://github.com/piecepackr/ppgamer/issues>

LazyLoad yes

Depends R (>= 3.4.0)

Imports dplyr, rlang, stringr, tibble,

Suggests igraph, piecepackr, ppcli, ppn (>= 0.1.0-2), testthat, withr, vdiff,

Remotes piecepackr/ppcli, piecepackr/ppn

Roxygen list(markdown = TRUE)

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Repository <https://piecepackr.r-universe.dev>

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solve_dominosa	<i>Solve Dominosa puzzle</i>
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Description

Solves a Dominosa (Domino Solitaire) puzzle given a grid of pip values.

Usage

```
solve_dominosa(pips)
```

Arguments

 pips A matrix of non-negative integer pip values, or a string with rows of integers separated by `" / "`. For a double-`n` domino set the grid must have $(n + 1)(n + 2)$ cells and each pip value $0:n$ must appear exactly $n + 2$ times.

Value

- A list with components:
 - `domino_ids` An integer matrix of the same dimensions as `pips` where cells belonging to the same domino share the same integer value.
 - `pips` The input `pips` matrix.
 - `ppn` A string of Portable Piecepack Notation for the solution.

See Also

<https://www.solitairelaboratory.com/puzzlelaboratory/DominoGG.html> and <https://puzzlebreaks.com/dominosa/> for more information about Dominosa.

Examples

```
pips <- matrix(c(0, 1, 0, 1, 3,
                3, 1, 0, 2, 2,
                3, 2, 1, 0, 3,
                2, 3, 1, 0, 2), nrow = 4L, byrow = TRUE)
s <- solve_dominosa(pips)
if (rlang::is_installed(c("piecepackr", "ppn"))) {
  g <- ppn::read_ppn(textConnection(s$ppn))[[1]]
  envir <- piecepackr::game_systems(round = TRUE)
  ppn::plot_move(g, open_device = FALSE, annotate = FALSE, envir = envir, scale = 0.95)
}
```

solve_fujisan	<i>Solve Fujisan game</i>
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Description

Solves a game of Fujisan (if possible).

Usage

```
solve_fujisan(
  coins = random_fujisan_coins(),
  dice = random_dice() - 1,
  pawns = "S12M/A12C"
)
```

Arguments

coins	A vector or matrix of Fujisan coin layout. Default is a random layout.
dice	A vector of Fujisan dice layout. Default is random dice. Usually not needed.
pawns	A FEN-like string of the pawns position. The four pawns S, M, C, and A are represented by their letter and empty spaces by a number. The two rows are separated by /. Default is "S12M/A12C" (all pawns at starting corners).

Value

A list with solution of Fujisan solution, its length, coin layout, dice (if needed), pawn position string, and portable piecepack notation.

Examples

```
puzzle2 <- matrix(c(4, 4, 4, 5, 2, 0, 2, 4, 0, 3, 1, 1,
                  1, 2, 5, 3, 3, 5, 3, 2, 5, 1, 0, 0), nrow = 2, byrow = TRUE)
s <- solve_fujisan(coins = puzzle2)
print(s$shortest_distance) # minimum number of moves to solve game
```

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