Package ‘mineSweepR’

December 2, 2023

Title Mine Sweeper Game

Version 0.1.1

Description This is the very popular mine sweeper game! The game requires you to find out tiles that contain mines through clues from unmasking neighboring tiles. Each tile that does not contain a mine shows the number of mines in its adjacent tiles. If you unmask all tiles that do not contain mines, you win the game; if you unmask any tile that contains a mine, you lose the game. For further game instructions, please run `help(run_game)` and check details. This game runs in X11-compatible devices with `grDevices::x11()`.

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Encoding UTF-8

RoxygenNote 7.2.0

Imports ComplexHeatmap, InteractiveComplexHeatmap, dplyr, grid, gsignal, mge, mmand, hms, rlang, pals

Collate 'utils.R' 'main.R' 'mineSweepR-package.R'

NeedsCompilation no

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run_game

Run mine sweeper game

Description

run_game runs mine sweeper game. It opens a window through x11. Please do not run multiple instances (windows) of the game. For game instructions, please check the details.

Usage

```run_game(n_mine = max(round(0.2 * n_row * n_col), 1L),
n_row = 10L,
n_col = 10L,
unmask_button = 0L,
flag_button = 2L,
digit_char = format(seq_len(8L), scientific = FALSE),
mine_char = "M",
flag_char = "F",
unmask_color = "#9F9F9F",
mask_color = "#3F3F3F",
hit_color = "#9F3F3F",
wrong_color = "#7F1F7F",
digit_color = pals::cols25(n = 8L),
mine_color = "black",
flag_color = "white",
window_title = "Mine Sweeper in R",
x11_args = list(),
time_prec = 3L,
restart_key = "r",
exit_key_press = 2L,
debug = FALSE)
```

Arguments

- `n_mine, n_row, n_col`
  Integers as numbers of mines/rows/columns in game panel, \(0 < n_{mines} < n_{row} \times n_{col}\).
- `unmask_button, flag_button`
  Integers as buttons to unmask/flag tiles. Usually, 0 for left mouse button (to unmask) and 2 for right mouse button (to flag).
- `digit_char, mine_char, flag_char`
  Characters to mark counts/mines/flags.
- `unmask_color, mask_color, hit_color, wrong_color`
  Strings as colors for unmasked tiles / masked tiles / mine-triggering tile / wrongly flagged tiles.
digit_color, mine_color, flag_color
  Strings as colors for digit_char/mine_char/flag_char on game panel.

window_title String as window title.

x11_args Named list of arguments passed on to x11, excluding title.

time_prec Integer as time precision (e.g. 0 for seconds or 3 for milliseconds).

restart_key Character as the key to restart game, used when you have won or lost a game.

exit_key_press Integer as the times of boss key presses (boss key is any key other than restart_key) required to close game window. This may come in handy in emergency (:D).

debug Logical, internal use only.

Details

Game instructions:

Goal All tiles start masked. If you unmask all tiles without mines, you win the game; if you unmask any tiles containing mines, you lose the game.

Unmask tiles You may click with unmask_button on any masked tile to unmask. The first tile unmasked cannot contain a mine. Timing starts when any tile is unmasked.

Find out mines Each unmasked tile tells you the number of mines in adjacent tiles, unless itself contains a mine. You may use these numbers to find out the adjacent tiles with mines.

Flag mines You may click with flag_button on an unmasked tile to flag it as a possible mine. Flagged tiles cannot be unmasked, unless you click on them with flag_button again to remove the flags.

Unmask adjacent tiles You may click with unmask_button on any unmasked tile to unmask adjacent unflagged tiles, after you have set up the number of flags that equals to the count of adjacent mines shown on this tile. If any unflagged adjacent tiles contain mines, one of them is triggered and you lose the game.

Game statistics After you win or lose a game, game statistics are recorded.

Restart game You may restart game with restart_key at any time. If you have not won or lost the game, it is not recorded in game statistics.

BOSS KEY! You may press boss key (any key other than restart_key) for ≥ exit_key_press times to close game window.

Value

A data.frame containing game statistics, invisibly, where each row is a game play. To look at game statistics, save the output of run_game() to a variable for later use or run print(run_game) to print.

Note

Change log:

• 0.1.0 Xiurui Zhu - Initiate the function.
Author(s)

Xiuirui Zhu

Examples

```r
if (interactive() == TRUE) {
  run_game()
}
```
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