

Simple Forestogramme Example

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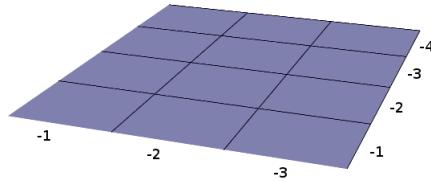
Abstract

The abstract text goes here.

1 Introduction

The Merge matrix gives information on wich two rows or two columns that needs to be merge. The Height vector set the new height for each merge and the Rowcol vector tell if it is a row or a column merge. Let's take these three matrix for an example, coming from a 3×4 matrix of data. The cardinal of the vector *height* and *Rowcol* is always $(numberofrow-1)+(numberofcolumn-1)$, wich also represent the number of merge.

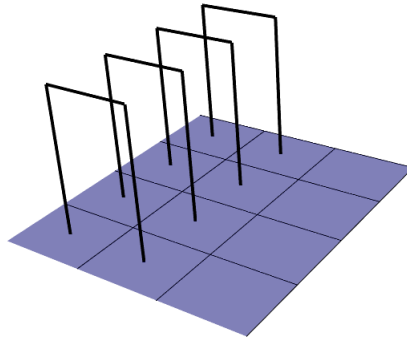
$$Merge = \begin{pmatrix} -1 & -2 \\ -1 & -2 \\ 1 & -3 \\ 2 & -4 \\ 1 & -3 \end{pmatrix} Height = \begin{pmatrix} 1 \\ 1.3 \\ 4 \\ 7 \\ 10 \end{pmatrix} Rowcol = \begin{pmatrix} r \\ c \\ c \\ c \\ r \end{pmatrix}$$



2 Step by step construction

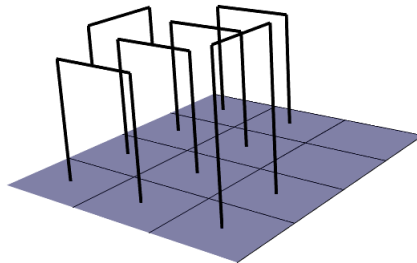
2.1 Step 1

$$Merge = \begin{pmatrix} -1 & -2 \end{pmatrix} Height = \begin{pmatrix} 1 \end{pmatrix} Rowcol = \begin{pmatrix} r \end{pmatrix}$$



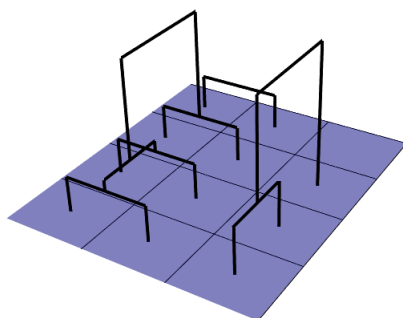
2.2 Step 2

$$Merge = \begin{pmatrix} -1 & -2 \end{pmatrix} Height = \begin{pmatrix} 1.3 \end{pmatrix} Rowcol = \begin{pmatrix} c \end{pmatrix}$$



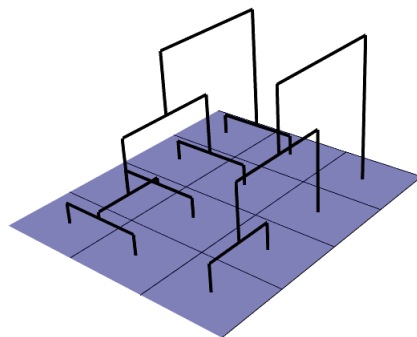
2.3 Step 3

$$Merge = \begin{pmatrix} 1 & -3 \end{pmatrix} Height = \begin{pmatrix} 4 \end{pmatrix} Rowcol = \begin{pmatrix} c \end{pmatrix}$$



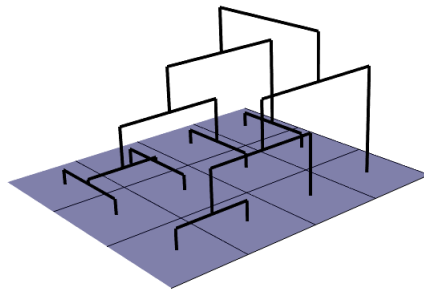
2.4 Step 4

$$Merge = \begin{pmatrix} 2 & -4 \end{pmatrix} Height = \begin{pmatrix} 7 \end{pmatrix} Rowcol = \begin{pmatrix} c \end{pmatrix}$$



2.5 Step 5

$$Merge = \begin{pmatrix} 1 & -3 \end{pmatrix} Height = \begin{pmatrix} 10 \end{pmatrix} Rowcol = \begin{pmatrix} r \end{pmatrix}$$



3 Implementation in R

```
1 library(rgl)
2 source('Function.R')
3
4 # Matrix size.
5 size = c(3, 4)
6
7 # Example tree drawing.
8 values = c(-1, -2, -1, -2, 1, -3, 2, -4, 1, -3)
9 merges = MergeMatrix(size, values)
10 heights = c(1, 1.3, 4, 7, 10)
11 rowcols = c(0, 1, 1, 1, 0)
12
13 # Plot forestogramme.
14 Forestogramme(size, merges, heights, rowcols)
```

4 Render forestogramme with rgl package

5 Conclusion

Write your conclusion here.