Package 'HiMC'

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Title High-Throughput Mitochondrial Haplogroup Classification
Description Assign high-level mitochondrial haplogroups given SNP information from standard PLINK *.map* and *.ped* files.
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R topics documented:
generate_snp_data
getAllPaths
getClassifications
getFinalPathList
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```
generate_snp_data SNP Data Generator
```

Description

Takes in a plink map file and a plink ped file and creates a dataframe with headers

Usage

```
generate_snp_data(map_file, ped_file)
```

Arguments

map_file The name of the .map file. Should be tab delimited with no header.

ped_file The name of the .ped file. Should be space delimited with no header.

Examples

```
mapfile <- system.file("extdata", "HapMap_Mito_Seq_QC_2.map", package="HiMC")
pedfile <- system.file("extdata", "HapMap_Mito_Seq_QC_2.ped", package="HiMC")
generate_snp_data(mapfile, pedfile)</pre>
```

getAllPaths

Path Generator

Description

Internal function. Takes a SNP dataframe, a node, and current path, and returns all available paths.

Usage

```
getAllPaths(df, node, path)
```

Arguments

df	SNP dataframe
node	Node to be checked
path	Current path checked

4 getGroupFromPath

getClassifications getClassifications output generator

Description

Takes in a dataframe generated by "generate_snp_data" and returns each subject classified with full classification paths

Usage

```
getClassifications(source_df)
```

Arguments

source_df The snp_data generated dataframe

getFinalPathList getFinalPathList internal function

Description

Takes in a nested list of prettified paths and returns those of the greatest length

Usage

```
getFinalPathList(plist)
```

Arguments

plist

A nested list of prettified paths

 ${\tt getGroupFromPath} \qquad \textit{getFinalPathList internal function}$

Description

Takes in a list of paths and returns the final classification of that path

Usage

```
getGroupFromPath(string)
```

Arguments

string

The path in question

getPathList 5

getPathList

getPathList internal function

Description

Takes in a nested list of paths in dataframe format and returns a top-level path assignment

Usage

```
getPathList(df)
```

Arguments

df

The FASTMAP dataframe row

maybeNode-class

A class to represent a maybe-node.

Description

Union between classes NULL and node

missingSnps

validData boolean check

Description

Internal function. Takes in a dataframe and a node and returns true if the dataframe row is missing any SNPs for the node in question

Usage

```
missingSnps(df, node)
```

Arguments

df The FASTMAP dataframe row

node The node in question

node_a2

node-class

A class to represent a node.

Description

A class to represent a node.

Slots

```
name A character vector snps A list req A list children A list
```

node_a

 $A \ node \ node_a.$

Description

An instance of the node class.

Usage

```
node_a
```

Format

An object of class node of length 1.

node_a2

 $A\ node\ node_a2.$

Description

An instance of the node class.

Usage

node_a2

Format

node_b2 7

node_b2

A node node_b2.

Description

An instance of the node class.

Usage

node_b2

Format

An object of class node of length 1.

node_b4bde

A node node_b4bde.

Description

An instance of the node class.

Usage

node_b4bde

Format

An object of class node of length 1.

node_b5

A node node_b5.

Description

An instance of the node class.

Usage

node_b5

Format

8 node_d1

node_c

 $A \ node \ node_c.$

Description

An instance of the node class.

Usage

node_c

Format

An object of class node of length 1.

node_d

A node node_d.

Description

An instance of the node class.

Usage

node_d

Format

An object of class node of length 1.

node_d1

A node node_d1.

Description

An instance of the node class.

Usage

node_d1

Format

node_d2

node_d2

A node node_d2.

Description

An instance of the node class.

Usage

node_d2

Format

An object of class node of length 1.

node_d4

A node node_d4.

Description

An instance of the node class.

Usage

node_d4

Format

An object of class node of length 1.

node_h

A node node_h.

Description

An instance of the node class.

Usage

node_h

Format

10 node_h2a2a

node_h2

A node node_h2.

Description

An instance of the node class.

Usage

node_h2

Format

An object of class node of length 1.

node_h2a

A node node_h2a.

Description

An instance of the node class.

Usage

node_h2a

Format

An object of class node of length 1.

node_h2a2a

A node node_h2a2a.

Description

An instance of the node class.

Usage

node_h2a2a

Format

node_hv

node_hv

A node node_hv.

Description

An instance of the node class.

Usage

```
node_hv
```

Format

An object of class node of length 1.

node_i

A node node_i.

Description

An instance of the node class.

Usage

```
node_i
```

Format

An object of class node of length 1.

node_j

A node node_j.

Description

An instance of the node class.

Usage

node_j

Format

node_k

node_jt

A node node_jt.

Description

An instance of the node class.

Usage

```
node_jt
```

Format

An object of class node of length 1.

node_jt_alt

A node node_jt_alt.

Description

An instance of the node class.

Usage

Format

An object of class node of length 1.

node_k

A node node_k.

Description

An instance of the node class.

Usage

node_k

Format

node_k1

node_k1

A node node_k1.

Description

An instance of the node class.

Usage

node_k1

Format

An object of class node of length 1.

node_k_alt

A node node_k_alt.

Description

An instance of the node class.

Usage

```
node_k_alt
```

Format

An object of class node of length 1.

node_10

A node node_l0.

Description

An instance of the node class.

Usage

node_10

Format

14 node_12

node_11

A node node_l1.

Description

An instance of the node class.

Usage

node_l1

Format

An object of class node of length 1.

node_l1b

A node node_l1b.

Description

An instance of the node class.

Usage

node_l1b

Format

An object of class node of length 1.

node_12

A node node_l2.

Description

An instance of the node class.

Usage

node_12

Format

node_123456

node_123456

A node node_l23456.

Description

An instance of the node class.

Usage

```
node_123456
```

Format

An object of class node of length 1.

node_12346

A node node_l2346.

Description

An instance of the node class.

Usage

```
node_12346
```

Format

An object of class node of length 1.

node_13

A node node_l3.

Description

An instance of the node class.

Usage

node_13

Format

node_n

node_134

A node node_l34.

Description

An instance of the node class.

Usage

```
node_134
```

Format

An object of class node of length 1.

node_m

A node node_m.

Description

An instance of the node class.

Usage

```
node_m
```

Format

An object of class node of length 1.

node_n

A node node_n.

Description

An instance of the node class.

Usage

```
node_n
```

Format

node_n1a1 17

node_n1a1

 $A \ node \ node_n1a1.$

Description

An instance of the node class.

Usage

```
node_n1a1
```

Format

An object of class node of length 1.

node_n1a1b

 $A node node_n1a1b.$

Description

An instance of the node class.

Usage

```
node_n1a1b
```

Format

An object of class node of length 1.

node_n_alt

 $A \ node \ node_n_alt.$

Description

An instance of the node class.

Usage

```
node_n_alt
```

Format

node_t

node_r

A node node_r.

Description

An instance of the node class.

Usage

node_r

Format

An object of class node of length 1.

node_r_alt

A node node_r_alt.

Description

An instance of the node class.

Usage

```
node_r_alt
```

Format

An object of class node of length 1.

node_t

A node node_t.

Description

An instance of the node class.

Usage

node_t

Format

node_t1 19

node_t1

A node node_t1.

Description

An instance of the node class.

Usage

```
node_t1
```

Format

An object of class node of length 1.

node_u

A node node_u.

Description

An instance of the node class.

Usage

```
node_u
```

Format

An object of class node of length 1.

node_u8b

A node node_u8b.

Description

An instance of the node class.

Usage

```
node_u8b
```

Format

20 node_v

node_u8b_alt

 $A\ node\ node_u8b_alt.$

Description

An instance of the node class.

Usage

```
node_u8b_alt
```

Format

An object of class node of length 1.

node_u_alt

A node node_u_alt.

Description

An instance of the node class.

Usage

```
node_u_alt
```

Format

An object of class node of length 1.

node_v

A node node_v.

Description

An instance of the node class.

Usage

node_v

Format

node_w 21

node_w

A node node_w.

Description

An instance of the node class.

Usage

node_w

Format

An object of class node of length 1.

node_x

A node node_x.

Description

An instance of the node class.

Usage

node_x

Format

An object of class node of length 1.

node_x2

A node node_x2.

Description

An instance of the node class.

Usage

node_x2

Format

22 numSnps

numChildren

NumChildren

Description

Internal function. Takes in a node object and returns the total number of that node's children

Usage

```
numChildren(node_object)
```

Arguments

numReqs

NumRegs

Description

Internal function. Takes in a node object and returns the number of SNPs that it requires for validation

Usage

```
numReqs(node_object)
```

Arguments

numSnps

NumSnps

Description

Internal function. Takes in a node object and returns the number of SNPs that belong to it

Usage

```
numSnps(node_object)
```

Arguments

root 23

root A node root.

Description

An instance of the node class.

Usage

root

Format

An object of class node of length 1.

validData

validData boolean check

Description

Internal function. Takes in a dataframe and a node and returns true if the dataframe row has the required SNPs for the node

Usage

```
validData(df, node)
```

Arguments

df The FASTMAP dataframe row

node The node in question

validPath boolean check

Description

Internal function. Takes in a dataframe and a node and returns true if the dataframe row represents a valid path for the node

Usage

```
validPath(df, node)
```

Arguments

df The FASTMAP dataframe row

node The node in question

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