Package 'GWASbyGLM'

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Type Package

Title Perform GWAS using GLM

Version 0.1.0

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Description
This package is used to perform GWAS using the General Linear Model (GLM) with phenotype data, marker data and covariates as an input.

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Encoding UTF-8

LazyData true

RoxygenNote 7.1.0

Dependency stats, graphics, utils

BuildVignettes true

R topics documented:

`import_data` *Function to import*

Description

This is the function to import data. The import data should have information about Phenotype (n by 1 form), Markers (n by m form) and Covariates (n by t form) with n the number of individuals in row, m number of markers in column and t number of covairates in column

Usage

```
import_data(filename)
```

Arguments

filename	Name and Location of the file to be imported in txt format

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manhattan_plot *Manhattan Plot*

Description

Function to generate manhattan plot for visual display of significant markers

Usage

```
manhattan_plot(data, cutoff, p, QTN.position = NULL)
```

Arguments

data	the individual and marker information
cutoff	threshold for identifying the significant SNPs
p	p-value of each markers
QTN.position	the position of the significant QTN

Value

plots and graphs

PC *Principle Component Analysis*

Description

Removes PCs that are linearly dependent with the given covariates and also user can specify how many PCs to chooose as co-factors

Usage

```
PC(PC_no, X, C)
```

Arguments

PC_no	User specified number of Principle Components (PCs)
X	Markers data in the form n by m with n number of individuals and m number of markers
C	Covariates matrix in the form n by t with n number of individuals and t number of coavariates

p_val_GLM *Function to return p-value for SNP*

Description

This is the function to calculate and return p-values for each SNPs after testing the association between the Phenotypes and SNP along with their Covairates

Usage

```
p_val_GLM(y, X, C = NULL)
```

Arguments

y	Phenotype matrix in the form n by 1 (n is number of individual in rows)
X	Marker data in matrix form n by m (n is number of individual in row and m is marker data in column)
C	Covariates matrix in the form n by t (n is number of individuals in row and t is number of covariates in column)

QQPlot_GWAS *QQ plot*

Description

Function to generate QQ-plot

Usage

```
QQPlot_GWAS(p)
```

Arguments

p	p-values of the markers

Value

qqplot

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