

Package ‘debrowser’

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Type Package

Title Interactive Differential Expression Analysis Browser

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Description Bioinformatics platform containing interactive plots and tables for differential gene and region expression studies. Allows visualizing expression data much more deeply in an interactive and faster way. By changing the parameters, users can easily discover different parts of the data that like never have been done before. Manually creating and looking these plots takes time. With DEBrowser users can prepare plots without writing any code. Differential expression, PCA and clustering analysis are made on site and the results are shown in various plots such as scatter, bar, box, volcano, ma plots and Heatmaps.

Depends R (>= 3.5.0),

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LazyData true

Imports shiny, jsonlite, shinyjs, shinydashboard, shinyBS, pathview, gplots, DT, ggplot2, RColorBrewer, annotate, AnnotationDbi, DESeq2, DOSE, igraph, grDevices, graphics, stats, utils, GenomicRanges, IRanges, S4Vectors, SummarizedExperiment, stringi, reshape2, baySeq, d3heatmap, org.Hs.eg.db, org.Mm.eg.db, limma, edgeR, clusterProfiler, V8, methods, sva, RCurl, googleAuthR, enrichplot, colourpicker, plotly, heatmaply, Harman

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VignetteBuilder knitr, R.rsp

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actionButton	<i>Buttons including Action Buttons and Event Buttons</i>
--------------	---

Description

Creates an action button whose value is initially zero, and increments by one each time it is pressed.

Usage

```
actionButton(inputId, label, styleclass = "", size = "",
             block = FALSE, icon = NULL, css.class = "", ...)
```

Arguments

inputId	Specifies the input slot that will be used to access the value.
label	The contents of the button—usually a text label, but you could also use any other HTML, like an image.
styleclass	The Bootstrap styling class of the button—options are primary, info, success, warning, danger, inverse, link or blank
size	The size of the button—options are large, small, mini
block	Whether the button should fill the block
icon	Display an icon for the button
css.class	Any additional CSS class one wishes to add to the action button
...	Other argument to feed into shiny::actionButton

Examples

```
actionButton("goDE", "Go to DE Analysis")
```

addDataCols	<i>addDataCols</i>
-------------	--------------------

Description

add additional data columns to de results

Usage

```
addDataCols(data = NULL, de_res = NULL, cols = NULL, conds = NULL)
```

Arguments

data,	loaded dataset
de_res,	de results
cols,	columns
conds,	inputconds

Value

data

Examples

```
x <- addDataCols()
```

addID	<i>addID</i>
-------	--------------

Description

Adds an id to the data frame being used.

Usage

```
addID(data = NULL)
```

Arguments

data, loaded dataset

Value

data

Examples

```
x <- addID()
```

all2all	<i>all2all</i>
---------	----------------

Description

Prepares all2all scatter plots for given datasets.

Usage

```
all2all(data, cex = 2)
```

Arguments

data, data that have the sample names in the header.
cex text size

Value

all2all scatter plots

Examples

```
plot<-all2all(mtcars)
```

```
all2allControlsUI      all2allControlsUI
```

Description

Generates the controls in the left menu for an all2all plot

Usage

```
all2allControlsUI(id)
```

Arguments

```
id,                namespace id
```

Value

returns the controls for left menu

Note

```
all2allControlsUI
```

Examples

```
x <- all2allControlsUI("bar")
```

```
applyFilters          applyFilters
```

Description

Applies filters based on user selected parameters to be displayed within the DEBrowser.

Usage

```
applyFilters(filt_data = NULL, cols = NULL, conds = NULL,
             input = NULL)
```

Arguments

```
filt_data,        loaded dataset
cols,             selected samples
conds,           selected conditions
input,           input parameters
```


Value

data

Examples

```
x <- applyFilters()
```

applyFiltersNew	<i>applyFiltersNew</i>
-----------------	------------------------

Description

Apply filters based on foldChange cutoff and padj value. This function adds a "Legend" column with "Up", "Down" or "NS" values for visualization.

Usage

```
applyFiltersNew(data = NULL, input = NULL)
```

Arguments

data,	loaded dataset
input,	input parameters

Value

data

Examples

```
x <- applyFiltersNew()
```

applyFiltersToMergedComparison	<i>applyFiltersToMergedComparison</i>
--------------------------------	---------------------------------------

Description

Gathers the merged comparison data to be used within the DEBrowser.

Usage

```
applyFiltersToMergedComparison(merged = NULL, nc = NULL,  
input = NULL)
```

Arguments

<code>merged,</code>	merged data
<code>nc,</code>	the number of comparisons
<code>input,</code>	input params

Value

data

Examples

```
x <- applyFiltersToMergedComparison()
```

`barMainPlotControlsUI` *barMainPlotControlsUI*

Description

Generates the controls in the left menu for a bar main plot

Usage

```
barMainPlotControlsUI(id)
```

Arguments

<code>id,</code>	namespace id
------------------	--------------

Value

returns the controls for left menu

Note

`barMainPlotControlsUI`

Examples

```
x <- barMainPlotControlsUI("bar")
```

batchEffectUI	<i>batchEffectUI</i> Creates a panel to coorrect batch effect
---------------	---

Description

batchEffectUI Creates a panel to coorrect batch effect

Usage

```
batchEffectUI(id)
```

Arguments

id, namespace id

Value

panel

Examples

```
x <- batchEffectUI("batcheffect")
```

batchMethod	<i>batchMethod</i>
-------------	--------------------

Description

select batch effect method

Usage

```
batchMethod(id)
```

Arguments

id, namespace id

Value

radio control

Note

batchMethod

Examples

```
x <- batchMethod("batch")
```

BoxMainPlotControlsUI *BoxMainPlotControlsUI*

Description

Generates the controls in the left menu for a Box main plot

Usage

```
BoxMainPlotControlsUI(id)
```

Arguments

id, namespace id

Value

returns the controls for left menu

Note

BoxMainPlotControlsUI

Examples

```
x <- BoxMainPlotControlsUI("box")
```

changeClusterOrder *changeClusterOrder*

Description

change order of K-means clusters

Usage

```
changeClusterOrder(order = NULL, cld = NULL)
```

Arguments

order, order
cld, data

Value

heatmap plot area

Note

changeClusterOrder

Examples

```
x <- changeClusterOrder()
```

clusterData	<i>clusterData</i>
-------------	--------------------

Description

Gathers the Cluster analysis data to be used within the GO Term plots.

Usage

```
clusterData(dat = NULL)
```

Arguments

dat, the data to cluster

Value

clustered data

Note

clusterData

Examples

```
mycluster <- clusterData()
```

clustFunParamsUI	<i>clustFunParamsUI</i>
------------------	-------------------------

Description

get cluster function parameter control

Usage

```
clustFunParamsUI()
```

Value

cluster params

Note

clustFunParamsUI

Examples

```
x <- clustFunParamsUI()
```

compareClust	<i>compareClust</i>
--------------	---------------------

Description

Compares the clustered data to be displayed within the GO Term plots.

Usage

```
compareClust(dat = NULL, ont = "CC", org = "org.Hs.eg.db",  
             fun = "enrichGO", title = "Ontology Distribution Comparison",  
             pvalueCutoff = 0.01)
```

Arguments

dat,	data to compare clusters
ont,	the ontology to use
org,	the organism used
fun,	fun
title,	title of the comparison
pvalueCutoff,	pvalueCutoff

Value

compared cluster

Note

compareClust

Examples

```
x <- compareClust()
```

condSelectUI	<i>condSelectUI Creates a panel to select samples for each condition</i>
--------------	--

Description

condSelectUI Creates a panel to select samples for each condition

Usage

```
condSelectUI()
```

Value

panel

Examples

```
x <- condSelectUI()
```

correctCombat	<i>Correct Batch Effect using Combat in sva package</i>
---------------	---

Description

Batch effect correction

Usage

```
correctCombat(input = NULL, idata = NULL, metadata = NULL)
```

Arguments

input,	input values
idata,	data
metadata,	metadata

Value

data

Examples

```
x<-correctCombat ()
```

correctHarman	<i>Correct Batch Effect using Harman</i>
---------------	--

Description

Batch effect correction

Usage

```
correctHarman(input = NULL, idata = NULL, metadata = NULL)
```

Arguments

input,	input values
idata,	data
metadata,	metadata

Value

data

Examples

```
x<-correctHarman ()
```

customColorsUI	<i>customColorsUI</i>
----------------	-----------------------

Description

get Custom Color controls

Usage

```
customColorsUI(id)
```

Arguments

id, namespace ID

Value

color range

Note

getColRng

Examples

```
x <- customColorsUI("heatmap")
```

cutOffSelectionUI	<i>cutOffSelectionUI</i>
-------------------	--------------------------

Description

Gathers the cut off selection for DE analysis

Usage

```
cutOffSelectionUI(id)
```

Arguments

id, namespace id

Value

returns the left menu according to the selected tab;

Note

```
cutOffSelectionUI
```

Examples

```
x <- cutOffSelectionUI("cutoff")
```

dataLCFUI	<i>dataLCFUI Creates a panel to filter low count genes and regions</i>
-----------	--

Description

dataLCFUI Creates a panel to filter low count genes and regions

Usage

```
dataLCFUI(id)
```

Arguments

```
id, namespace id
```

Value

panel

Examples

```
x <- dataLCFUI("lcf")
```

dataLoadUI	<i>dataLoadUI</i>
------------	-------------------

Description

Creates a panel to upload the data

Usage

```
dataLoadUI(id)
```

Arguments

```
id, namespace id
```

Value

panel

Examples

```
x <- dataLoadUI("load")
```

 debrowserall2all *debrowserall2all*

Description

Module for a bar plot that can be used in data prep, main plots low count removal modules or any desired module

Usage

```
debrowserall2all(input, output, session, data = NULL, cex = 2)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values
cex,	the size of the dots

Value

all2all plot

Examples

```
x <- debrowserall2all()
```

 debrowserbarmainplot *debrowserbarmainplot*

Description

Module for a bar plot that can be used in data prep, main plots low count removal modules or any desired module

Usage

```
debrowserbarmainplot(input, output, session, data = NULL, conds = NULL,
  cols = NULL, key = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values
conds,	conditions
cols,	columns
key,	the gene or region name

Value

density plot

Examples

```
x <- debrowserbarmainplot()
```

debrowserbatcheffect *debrowserbatcheffect*

Description

Module to correct batch effect

Usage

```
debrowserbatcheffect(input, output, session, ldata = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
ldata,	loaded data

Value

main plot
panel

Examples

```
x <- debrowserbatcheffect()
```

debrowserboxmainplot *debrowserboxmainplot*

Description

Module for a box plot that can be used in DEanalysis main part and used heatmaps

Usage

```
debrowserboxmainplot(input = NULL, output = NULL, session = NULL,  
data = NULL, conds = NULL, cols = NULL, key = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values
conds,	conditions
cols,	columns
key,	the gene or region name

Value

density plot

Examples

```
x <- debrowserboxmainplot()
```

debrowsercondselect *debrowsercondselect*

Description

Condition selection This is not a module. Module construction didn't used here, just use it as functions not in a module.

Usage

```
debrowsercondselect(input = NULL, output = NULL, session = NULL,
  data = NULL, metadata = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	count data
metadata,	metadata

Value

main plot
panel

Examples

```
x <- debrowsercondselect()
```

 debrowserdataload *debrowserdataload*

Description

Module to load count data and metadata

Usage

```
debrowserdataload(input = NULL, output = NULL, session = NULL,
  nextpagebutton = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
nextpagebutton,	the name of the next page button after loading the data

Value

main plot
panel

Examples

```
x <- debrowserdataload()
```

 debrowserdeanalysis *debrowserdeanalysis*

Description

Module to perform and visualize DE results.

Usage

```
debrowserdeanalysis(input = NULL, output = NULL, session = NULL,
  data = NULL, columns = NULL, conds = NULL, params = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values
columns,	columns
conds,	conditions
params,	de parameters

Value

DE panel

Examples

```
x <- debrowserdeanalysis()
```

debrowserdensityplot *debrowserdensityplot*

Description

Module for a density plot that can be used in data prep and low count removal modules

Usage

```
debrowserdensityplot(input = NULL, output = NULL, session = NULL,  
data = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values

Value

density plot

Examples

```
x <- debrowserdensityplot()
```

debrowserheatmap *debrowserheatmap*

Description

Heatmap module to create interactive heatmaps and get selected list from a heatmap

Usage

```
debrowserheatmap(input, output, session, expdata = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
expdata,	a matrix that includes expression values

Value

heatmapply plot

Examples

```
x <- debrowserheatmap()
```

debrowserhistogram *debrowserhistogram*

Description

Module for a histogram that can be used in data prep and low count removal modules

Usage

```
debrowserhistogram(input = NULL, output = NULL, session = NULL,  
data = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values

Value

histogram

Examples

```
x <- debrowserhistogram()
```

debrowserIQRplot *debrowserIQRplot*

Description

Module for an IQR plot that can be used in data prep and low count removal modules

Usage

```
debrowserIQRplot(input = NULL, output = NULL, session = NULL,  
data = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values

Value

IQR

Examples

```
x <- debrowserIQRplot()
```

debrowserlowcountfilter
debrowserlowcountfilter

Description

Module to filter low count genes/regions

Usage

```
debrowserlowcountfilter(input = NULL, output = NULL, session = NULL,  
ldata = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
ldata,	loaded data

Value

main plot
panel

Examples

```
x <- debrowserlowcountfilter()
```

debrowsermainplot *debrowsermainplot*

Description

Module for a scatter, volcano and ma plots that are going to be used as a mainplot in debrowser

Usage

```
debrowsermainplot(input = NULL, output = NULL, session = NULL,  
data = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values

Value

main plot
panel

Examples

```
x <- debrowsermainplot()
```

debrowserpcaplot *debrowserpcaplot*

Description

Module for a pca plot with its loadings as a mainplot in debrowser

Usage

```
debrowserpcaplot(input = NULL, output = NULL, session = NULL,
  pcadata = NULL, metadata = NULL)
```

Arguments

input,	input variables
output,	output objects
session,	session
pcadata,	a matrix that includes expression values
metadata,	metadata to color the plots

Value

main plot
panel

Examples

```
x <- debrowserpcaplot()
```

dendControlsUI *dendControlsUI*

Description

get distance metric parameters

Usage

```
dendControlsUI(id, dendtype = "Row")
```

Arguments

id,	module ID
dendtype,	Row or Col

Value

controls

Note

dendControlsUI

Examples

```
x <- dendControlsUI("heatmap")
```

densityPlotControlsUI *densityPlotControlsUI*

Description

Generates the controls in the left menu for a densityPlot

Usage

```
densityPlotControlsUI(id)
```

Arguments

id, namespace id

Value

returns the left menu

Note

densityPlotControlsUI

Examples

```
x <- densityPlotControlsUI("density")
```

deServer *deServer*

Description

Sets up shinyServer to be able to run DEBrowser interactively.

Usage

```
deServer(input, output, session)
```

Arguments

input, input params from UI
output, output params to UI
session, session variable

Value

the panel for main plots;

Note

deServer

Examples

```
deServer
```

deUI

deUI

Description

Creates a shinyUI to be able to run DEBrowser interactively.

Usage

```
deUI()
```

Value

the panel for main plots;

Note

deUI

Examples

```
x<-deUI()
```

distFunParamsUI

distFunParamsUI

Description

get distance metric parameters

Usage

```
distFunParamsUI()
```

Value

funParams

Note

```
distFunParamsUI
```

Examples

```
x <- distFunParamsUI()
```

drawPCAExplained	<i>Creates a more detailed plot using the PCA results from the selected dataset.</i>
------------------	--

Description

Creates a more detailed plot using the PCA results from the selected dataset.

Usage

```
drawPCAExplained(explainedData = NULL)
```

Arguments

```
explainedData,  
selected data
```

Value

explained plot

Examples

```
x <- drawPCAExplained()
```

fileTypes	<i>fileTypes</i>
-----------	------------------

Description

Returns fileTypes that are going to be used in creating fileUpload UI

Usage

```
fileTypes()
```

Value

file types

Note

fileTypes

Examples

```
x <- fileTypeS()
```

fileUploadBox	<i>fileUploadBox</i>
---------------	----------------------

Description

File upload module

Usage

```
fileUploadBox(id = NULL, inputId = NULL, label = NULL)
```

Arguments

id,	namespace id
inputId,	input file ID
label,	label

Value

radio control

Note

fileUploadBox

Examples

```
x <- fileUploadBox("meta", "metadata", "Metadata")
```

generateTestData	<i>generateTestData</i>
------------------	-------------------------

Description

This generates a test data that is suitable to main plots in debrowser

Usage

```
generateTestData(dat = NULL)
```

Arguments

dat,	DESeq results will be generated for loaded data
------	---

Value

testData

Examples

```
x <- generateTestData()
```

`getAfterLoadMsg` *getAfterLoadMsg*

Description

Generates and displays the message to be shown after loading data within the DEBrowser.

Usage

```
getAfterLoadMsg()
```

Value

return After Load Msg

Note

```
getAfterLoadMsg
```

Examples

```
x <- getAfterLoadMsg()
```

`getAll2AllPlotUI` *getAll2AllPlotUI*

Description

all2all plots UI.

Usage

```
getAll2AllPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for all2all plots;

Note

```
getAll2AllPlotUI
```

Examples

```
x <- getAll2AllPlotUI("bar")
```

getBarMainPlot	<i>getBarMainPlot</i>
----------------	-----------------------

Description

Makes Density plots

Usage

```
getBarMainPlot(data = NULL, conds = NULL, cols = NULL, key = NULL,
  title = "", input = NULL)
```

Arguments

data,	count or normalized data
conds,	conds
cols,	cols
key,	key
title,	title
input,	input

Examples

```
getBarMainPlot()
```

getBarMainPlotUI	<i>getBarMainPlotUI</i>
------------------	-------------------------

Description

main bar plots UI.

Usage

```
getBarMainPlotUI(id)
```

Arguments

id,	namespace id
-----	--------------

Value

the panel for Density plots;

Note

getBarMainPlotUI

Examples

```
x <- getBarMainPlotUI("bar")
```

getBoxMainPlot *getBoxMainPlot*

Description

Makes Density plots

Usage

```
getBoxMainPlot(data = NULL, conds = NULL, cols = NULL, key = NULL,  
                title = "", input = NULL)
```

Arguments

data,	count or normalized data
conds,	conds
cols,	cols
key,	key
title,	title
input,	input

Examples

```
getBoxMainPlot()
```

getBoxMainPlotUI	<i>getBoxMainPlotUI</i>
------------------	-------------------------

Description

main Box plots UI.

Usage

```
getBoxMainPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for Density plots;

Note

getBoxMainPlotUI

Examples

```
x <- getBoxMainPlotUI("box")
```

getBSTableUI	<i>getBSTableUI prepares a Modal to put a table</i>
--------------	---

Description

getBSTableUI prepares a Modal to put a table

Usage

```
getBSTableUI(name = NULL, label = NULL, trigger = NULL,
  size = "large", modal = NULL)
```

Arguments

name, name
 label, label
 trigger, trigger button for the modal
 size, size of the modal
 modal, modal yes/no

Value

the modal

Examples

```
x<- getBSTableUI()
```

getColors

getColors

Description

get colors for the domains

Usage

```
getColors(domains = NULL)
```

Arguments

domains, domains to be colored

Value

colors

Examples

```
x<-getColors()
```

getColorShapeSelection

getColorShapeSelection

Description

Generates the fill and shape selection boxes for PCA plots. metadata file has to be loaded in this case

Usage

```
getColorShapeSelection(metadata = NULL, input = NULL, session = NULL)
```

Arguments

metadata, metadata table

input, input

session, session

Value

Color and shape selection boxes

Examples

```
x <- getColorShapeSelection()
```

```
getCompSelection      getCompSelection
```

Description

Gathers the user selected comparison set to be used within the DEBrowser.

Usage

```
getCompSelection(name = NULL, count = NULL)
```

Arguments

name,	the name of the selectInput
count,	comparison count

Note

```
getCompSelection
```

Examples

```
x <- getCompSelection(name="comp", count = 2)
```

```
getConditionSelector      getConditionSelector
```

Description

Selects user input conditions to run in DESeq.

Usage

```
getConditionSelector(num = 0, choices = NULL, selected = NULL)
```

Arguments

num,	panel that is going to be shown
choices,	sample list
selected,	selected sample list

Examples

```
x <- getConditionSelector()
```

```
getConditionSelectorFromMeta
      getConditionSelectorFromMeta
```

Description

Selects user input conditions to run in DESeq from metadata

Usage

```
getConditionSelectorFromMeta(metadata = NULL, input = NULL,
  index = 1, num = 0, choices = NULL, selected = NULL)
```

Arguments

metadata,	meta data table
input,	input
index,	index
num,	num
choices,	choices
selected,	selected

Examples

```
x <- getConditionSelectorFromMeta()
```

```
getCondMsg      getCondMsg
```

Description

Generates and displays the current conditions and their samples within the DEBrowser.

Usage

```
getCondMsg(dc = NULL, num = NULL, cols = NULL, conds = NULL)
```

Arguments

dc,	columns
num,	selected comparison
cols,	columns
conds,	selected conditions

Value

return conditions

Note

`getCondMsg`

Examples

```
x <- getCondMsg()
```

`getCutOffSelection` *getCutOffSelection*

Description

Gathers the cut off selection for DE analysis

Usage

```
getCutOffSelection(nc = 1)
```

Arguments

`nc`, total number of comparisons

Value

returns the left menu according to the selected tab;

Note

`getCutOffSelection`

Examples

```
x <- getCutOffSelection()
```

`getDataAssesmentText` *getDataAssesmentText* *DataAssesment text*

Description

`getDataAssesmentText` *DataAssesment text*

Usage

```
getDataAssesmentText()
```

Value

help text for data assesment

Examples

```
x<- getDataAssesmentText()
```

getDataForTables	<i>getDataForTables</i> get data to fill up tables tab
------------------	--

Description

getDataForTables get data to fill up tables tab

Usage

```
getDataForTables(input = NULL, init_data = NULL, filt_data = NULL,
  selected = NULL, getMostVaried = NULL, mergedComp = NULL,
  explainedData = NULL)
```

Arguments

input,	input parameters
init_data,	initial dataset
filt_data,	filt_data
selected,	selected genes
getMostVaried,	most varied genes
mergedComp,	merged comparison set
explainedData,	pca gene set

Value

data

Examples

```
x <- getDataForTables()
```

getDataPreparationText	<i>getDataPreparationText</i> DataPreparation text
------------------------	--

Description

getDataPreparationText DataPreparation text

Usage

```
getDataPreparationText()
```

Value

help text for data preparation

Examples

```
x<- getDataPreparationText()
```

getDEAnalysisText	<i>getDEAnalysisText DEAnalysis text</i>
-------------------	--

Description

getDEAnalysisText DEAnalysis text

Usage

```
getDEAnalysisText()
```

Value

help text for DE Analysis

Examples

```
x<- getDEAnalysisText()
```

getDensityPlot	<i>getDensityPlot</i>
----------------	-----------------------

Description

Makes Density plots

Usage

```
getDensityPlot(data = NULL, input = NULL, title = "")
```

Arguments

data,	count or normalized data
input,	input
title,	title

Examples

```
getDensityPlot()
```

getDensityPlotUI	<i>getDensityPlotUI</i>
------------------	-------------------------

Description

Density plot UI.

Usage

```
getDensityPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for Density plots;

Note

```
getDensityPlotUI
```

Examples

```
x <- getDensityPlotUI("density")
```

getDEResultsUI	<i>getDEResultsUI</i> Creates a panel to visualize DE results
----------------	---

Description

getDEResultsUI Creates a panel to visualize DE results

Usage

```
getDEResultsUI(id)
```

Arguments

id, namespace id

Value

panel

Examples

```
x <- getDEResultsUI("batcheffect")
```

`getDomains`*getDomains*

Description

Get domains for the main plots.

Usage

```
getDomains(filt_data = NULL)
```

Arguments

`filt_data`, data to get the domains

Value

domains

Examples

```
x<-getDomains()
```

`getDown`*getDown get down regulated data*

Description

getDown get down regulated data

Usage

```
getDown(filt_data = NULL)
```

Arguments

`filt_data`, `filt_data`

Value

data

Examples

```
x <- getDown()
```

`getDownloadSection` *getDownloadSection*

Description

download section button and dataset selection box in the menu for user to download selected data.

Usage

```
getDownloadSection(choices = NULL)
```

Arguments

`choices`, main vs. QC section

Value

the panel for download section in the menu;

Note

`getDownloadSection`

Examples

```
x<- getDownloadSection()
```

`getEnrichDO` *getEnrichDO*

Description

Gathers the Enriched DO Term analysis data to be used within the GO Term plots.

Usage

```
getEnrichDO(genelist = NULL, pvalueCutoff = 0.01)
```

Arguments

`genelist`, gene list
`pvalueCutoff`, the p value cutoff

Value

enriched DO

Note

`getEnrichDO`

Examples

```
x <- getEnrichD0()
```

getEnrichGO	<i>getEnrichGO</i>
-------------	--------------------

Description

Gathers the Enriched GO Term analysis data to be used within the GO Term plots.

Usage

```
getEnrichGO(genelist = NULL, pvalueCutoff = 0.01,  
            org = "org.Hs.eg.db", ont = "CC")
```

Arguments

genelist,	gene list
pvalueCutoff,	p value cutoff
org,	the organism used
ont,	the ontology used

Value

Enriched GO

Note

getEnrichGO

Examples

```
x <- getEnrichGO()
```

getEnrichKEGG	<i>getEnrichKEGG</i>
---------------	----------------------

Description

Gathers the Enriched KEGG analysis data to be used within the GO Term plots.

Usage

```
getEnrichKEGG(genelist = NULL, pvalueCutoff = 0.01,  
              org = "org.Hs.eg.db")
```

Arguments

genelist, gene list
pvalueCutoff, the p value cutoff
org, the organism used

Value

Enriched KEGG

Note

getEnrichKEGG

Examples

```
x <- getEnrichKEGG()
```

getEntrezIds	<i>getEntrezIds</i>
--------------	---------------------

Description

Gathers the gene list to use for GOTerm analysis.

Usage

```
getEntrezIds(genes = NULL, org = "org.Hs.eg.db")
```

Arguments

genes, gene list with fold changes
org, organism for gene symbol entrez ID conversion

Value

ENTREZ ID list

Note

GOTerm
getEntrezIds symbol to ENTREZ ID conversion

Examples

```
x <- getEntrezIds()
```

getEntrezTable *getEntrezTable*

Description

Gathers the entrezIds of the genes in given list and their data

Usage

```
getEntrezTable(genes = NULL, dat = NULL, org = "org.Hs.eg.db")
```

Arguments

genes,	gene list
dat,	data matrix
org,	organism for gene symbol entrez ID conversion

Value

table with the entrez IDs in the rownames

Note

GOTerm
getEntrezTable symbol to ENTREZ ID conversion

Examples

```
x <- getEntrezTable()
```

getGeneList *getGeneList*

Description

Gathers the gene list to use for GOTerm analysis.

Usage

```
getGeneList(genes = NULL, org = "org.Hs.eg.db")
```

Arguments

genes,	gene list
org,	organism for gene symbol entrez ID conversion

Value

ENTREZ ID list

Note

GOTerm
getGeneList symbol to ENTREZ ID conversion

Examples

```
x <- getGeneList(c('OCLN', 'ABCC2'))
```

getGeneSetData	<i>getGeneSetData</i>
----------------	-----------------------

Description

Gathers the specified gene set list to be used within the DEBrowser.

Usage

```
getGeneSetData(data = NULL, geneset = NULL)
```

Arguments

data,	loaded dataset
geneset,	given gene set

Value

data

Examples

```
x <- getGeneSetData()
```

getGOLeftMenu	<i>getGOLeftMenu</i>
---------------	----------------------

Description

Generates the GO Left menu to be displayed within the DEBrowser.

Usage

```
getGOLeftMenu()
```

Value

returns the left menu according to the selected tab;

Note

getGOLeftMenu

Examples

```
x <- getGOLeftMenu()
```

getGoPanel	<i>getGoPanel</i>
------------	-------------------

Description

Creates go term analysis panel within the shiny display.

Usage

```
getGoPanel()
```

Value

the panel for go term analysis;

Note

getGoPanel

Examples

```
x <- getGoPanel()
```

getGOPlots	<i>getGOPlots</i>
------------	-------------------

Description

Go term analysis panel. Generates appropriate GO plot based on user selection.

Usage

```
getGOPlots(dataset = NULL, input = NULL)
```

Arguments

dataset,	the dataset used
input,	input params

Value

the panel for go plots;

Note

getGOPlots

Examples

```
x<- getGOPlots()
```

getHeatmapUI	<i>getHeatmapUI</i>
--------------	---------------------

Description

Generates the left menu to be used for heatmap plots

Usage

```
getHeatmapUI(id)
```

Arguments

id, module ID

Value

heatmap plot area

Note

getHeatmapUI

Examples

```
x <- getHeatmapUI("heatmap")
```

getHelpButton	<i>getHelpButton prepares a helpbutton for to go to a specific site in the documentation</i>
---------------	--

Description

getHelpButton prepares a helpbutton for to go to a specific site in the documentation

Usage

```
getHelpButton(name = NULL, link = NULL)
```

Arguments

name, name that are going to come after info
link, link of the help

Value

the info button

Examples

```
x<- getHelpButton()
```

getHideLegendOnOff *getHideLegendOnOff*

Description

hide legend

Usage

```
getHideLegendOnOff(id = "pca")
```

Arguments

id, namespace id

Examples

```
x <- getHideLegendOnOff("pca")
```

getHistogramUI *getHistogramUI*

Description

Histogram plots UI.

Usage

```
getHistogramUI(id)
```

Arguments

id, namespace id

Value

the panel for PCA plots;

Note

getHistogramUI

Examples

```
x <- getHistogramUI("histogram")
```

getIntroText	<i>getIntroText Intro text</i>
--------------	--------------------------------

Description

getIntroText Intro text

Usage

```
getIntroText()
```

Value

the JS for tab updates

Examples

```
x<- getIntroText()
```

getIQRPlot	<i>getIQRPlot</i>
------------	-------------------

Description

Makes IQR boxplot plot

Usage

```
getIQRPlot(data = NULL, input = NULL, title = "")
```

Arguments

data,	count or normalized data
input,	input
title,	title

Examples

```
getIQRPlot()
```

getIQRPlotUI *getIQRPlotUI*

Description

IQR plot UI.

Usage

```
getIQRPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for IQR plots;

Note

getIQRPlotUI

Examples

```
x <- getIQRPlotUI("IQR")
```

getJSLine *getJSLine*

Description

heatmap JS code for selection functionality

Usage

```
getJSLine()
```

Value

JS Code

Examples

```
x <- getJSLine()
```

getKEGGModal	<i>getKEGGModal prepares a modal for KEGG plots</i>
--------------	---

Description

getKEGGModal prepares a modal for KEGG plots

getKEGGModal prepares a helpbutton for to go to a specific site in the documentation

Usage

```
getKEGGModal()
```

```
getKEGGModal()
```

Value

the info button

the info button

Examples

```
x<- getKEGGModal()
```

```
x<- getKEGGModal()
```

getLeftMenu	<i>getLeftMenu</i>
-------------	--------------------

Description

Generates the left menu for for plots within the DEBrowser.

Usage

```
getLeftMenu(input = NULL)
```

Arguments

input, input values

Value

returns the left menu according to the selected tab;

Note

```
getLeftMenu
```

Examples

```
x <- getLeftMenu()
```

`getLegendColors` *getLegendColors*

Description

Generates colors according to the data

Usage

```
getLegendColors(Legend = c("up", "down", "NS"))
```

Arguments

Legend, unique Legends

Value

mainPlotControls

Note

`getLegendColors`

Examples

```
x <- getLegendColors(c("up", "down", "GS", "NS"))
```

`getLegendRadio` *getLegendRadio*

Description

Radio buttons for the types in the legend

Usage

```
getLegendRadio(id)
```

Arguments

id, namespace id

Value

radio control

Note

`getLegendRadio`

Examples

```
x <- getLegendRadio("deprog")
```

getLegendSelect *getLegendSelect*

Description

select legend

Usage

```
getLegendSelect(id = "pca")
```

Arguments

id, namespace id

Note

getLegendSelect

Examples

```
x <- getLegendSelect("pca")
```

getLevelOrder *getLevelOrder*

Description

Generates the order of the overlapping points

Usage

```
getLevelOrder(Level = c("up", "down", "NS"))
```

Arguments

Level, factor levels shown in the legend

Value

order

Note

getLevelOrder

Examples

```
x <- getLevelOrder(c("up", "down", "GS", "NS"))
```

getLoadingMsg	<i>getLoadingMsg</i>
---------------	----------------------

Description

Creates and displays the loading message/gif to be displayed within the DEBrowser.

Usage

```
getLoadingMsg(output = NULL)
```

Arguments

output, output message

Value

loading msg

Note

getLoadingMsg

Examples

```
x <- getLoadingMsg()
```

getLogo	<i>getLogo</i>
---------	----------------

Description

Generates and displays the logo to be shown within DEBrowser.

Usage

```
getLogo()
```

Value

return logo

Note

getLogo

Examples

```
x <- getLogo()
```

<code>getMainPanel</code>	<i>getMainPanel</i>
---------------------------	---------------------

Description

main panel for volcano, scatter and maplot. Barplot and box plots are in this page as well.

Usage

```
getMainPanel()
```

Value

the panel for main plots;

Note

```
getMainPanel
```

Examples

```
x <- getMainPanel()
```

<code>getMainPlotsLeftMenu</code>	<i>getMainPlotsLeftMenu</i>
-----------------------------------	-----------------------------

Description

Generates the Main Plots Left menu to be displayed within the DEBrowser.

Usage

```
getMainPlotsLeftMenu()
```

Value

returns the left menu according to the selected tab;

Note

```
getMainPlotsLeftMenu
```

Examples

```
x <- getMainPlotsLeftMenu()
```

getMainPlotUI	<i>getMainPlotUI</i>
---------------	----------------------

Description

main plot for volcano, scatter and maplot.

Usage

```
getMainPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for main plots;

Note

```
getMainPlotUI
```

Examples

```
x <- getMainPlotUI("main")
```

getMean	<i>getMean</i>
---------	----------------

Description

Gathers the mean for selected condition.

Usage

```
getMean(data = NULL, selcols = NULL)
```

Arguments

data, dataset
selcols, input cols

Value

data

Examples

```
x <- getMean()
```

getMergedComparison *getMergedComparison*

Description

Gathers the merged comparison data to be used within the DEBrowser.

Usage

```
getMergedComparison(dc = NULL, nc = NULL, input = NULL)
```

Arguments

dc,	data container
nc,	the number of comparisons
input,	input params

Value

data

Examples

```
x <- getMergedComparison()
```

getMetaSelector *getMetaSelector*

Description

Return the sample selection box using meta data table

Usage

```
getMetaSelector(metadata = NULL, input = NULL, n = 0)
```

Arguments

metadata,	meta data table
input,	input params
n,	the box number

Value

meta select box

Examples

```
x<-getMetaSelector()
```

getMethodDetails	<i>get the detail boxes after DE method selected</i>
------------------	--

Description

get the detail boxes after DE method selected

Usage

```
getMethodDetails(num = 0, input = NULL)
```

Arguments

num,	panel that is going to be shown
input,	user input

Examples

```
x <- getMethodDetails()
```

getMostVariedList	<i>getMostVariedList</i>
-------------------	--------------------------

Description

Calculates the most varied genes to be used for specific plots within the DEBrowser.

Usage

```
getMostVariedList(datavar = NULL, cols = NULL, input = NULL)
```

Arguments

datavar,	loaded dataset
cols,	selected columns
input,	input

Value

data

Examples

```
x <- getMostVariedList()
```

getNormalizedMatrix *getNormalizedMatrix*

Description

Normalizes the matrix passed to be used within various methods within DEBrowser. Requires edgeR package

Usage

```
getNormalizedMatrix(M = NULL, method = "TMM")
```

Arguments

M, numeric matrix
method, normalization method for edgeR. default is TMM

Value

normalized matrix

Note

getNormalizedMatrix

Examples

```
x <- getNormalizedMatrix(mtcars)
```

getOrganism *getOrganism*

Description

getOrganism

Usage

```
getOrganism(org)
```

Arguments

org, organism

Value

organism name for keg

Note

getOrganism

Examples

```
x <- getOrganism()
```

getOrganismBox *getOrganismBox*

Description

Get the organism Box.

Usage

```
getOrganismBox()
```

Value

selectInput

Note

getOrganismBox
getOrganismBox makes the organism box

Examples

```
x <- getOrganismBox()
```

getOrganismPathway *getOrganismPathway*

Description

getOrganismPathway

Usage

```
getOrganismPathway(org)
```

Arguments

org, organism

Value

organism name for pathway

Note

getOrganismPathway

Examples

```
x <- getOrganismPathway()
```

getPCAcontolUpdatesJS *getPCAcontolUpdatesJS in the prep menu we have two PCA plots to show how batch effect correction worked. One set of PCA input controls updates two PCA plots with this JS.*

Description

getPCAcontolUpdatesJS in the prep menu we have two PCA plots to show how batch effect correction worked. One set of PCA input controls updates two PCA plots with this JS.

Usage

```
getPCAcontolUpdatesJS()
```

Value

the JS for tab updates

Examples

```
x<- getTabUpdateJS()
```

getPCAexplained *getPCAexplained*

Description

Creates a more detailed plot using the PCA results from the selected dataset.

Usage

```
getPCAexplained(datasetInput = NULL, pca_data = NULL, input = NULL)
```

Arguments

datasetInput, selected data
 pca_data, from user
 input, input params

Value

explained plot

Examples

```
load(system.file("extdata", "demo", "demodata.Rda", package="debrowser"))
input<-c()
input$qcplot<-"pca"
input$col_list<-colnames(demodata[,1:6])
dat <- getNormalizedMatrix(demodata[,1:6])
pca_data <- run_pca(dat)
x <- getPCAexplained(dat, pca_data, input)
```

getPCAPlotUI

getPCAPlotUI

Description

PCA plots UI.

Usage

```
getPCAPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for PCA plots;

Note

getPCAPlotUI

Examples

```
x <- getPCAPlotUI("pca")
```

getPCselection	<i>getPCselection</i>
----------------	-----------------------

Description

Generates the PC selection number to be used within DEBrowser.

Usage

```
getPCselection(id, num = 1, xy = "x")
```

Arguments

id,	namespace id
num,	PC selection number
xy,	x or y coordinate

Value

PC selection for PCA analysis

Note

getPCselection

Examples

```
x <- getPCselection("pca")
```

getPlotArea	<i>getPlotArea</i>
-------------	--------------------

Description

returns plot area either for heatmaply or heatmap.2

Usage

```
getPlotArea(input = NULL, session = NULL)
```

Arguments

input,	input variables
session,	session

Value

heatmaply/heatmap.2 plot area

Examples

```
x <- getPlotArea()
```

getProgramTitle	<i>getProgramTitle</i>
-----------------	------------------------

Description

Generates the title of the program to be displayed within DEBbrowser. If it is called in a program, the program title will be hidden

Usage

```
getProgramTitle(session = NULL)
```

Arguments

session, session var

Value

program title

Note

getProgramTitle

Examples

```
title<-getProgramTitle()
```

getQAText	<i>getQAText Some questions and answers</i>
-----------	---

Description

getQAText Some questions and answers

Usage

```
getQAText()
```

Value

help text for QA

Examples

```
x<- getQAText()
```

getQCLeftMenu	<i>getQCLeftMenu</i>
---------------	----------------------

Description

Generates the left menu to be used for QC plots within the DEBrowser.

Usage

```
getQCLeftMenu(input = NULL)
```

Arguments

input, input values

Value

QC left menu

Note

getQCLeftMenu

Examples

```
x <- getQCLeftMenu()
```

getQCPanel	<i>getQCPanel</i>
------------	-------------------

Description

Gathers the conditional panel for QC plots

Usage

```
getQCPanel(input = NULL)
```

Arguments

input, user input

Value

the panel for QC plots

Note

getQCSection

Examples

```
x <- getQCPanel()
```

```
getSampleDetails      getSampleDetails
```

Description

get sample details

Usage

```
getSampleDetails(output = NULL, summary = NULL, details = NULL,
  data = NULL)
```

Arguments

output,	output
summary,	summary output name
details,	details ouput name
data,	data

Value

panel

Examples

```
x <- getSampleDetails()
```

```
getSampleNames      getSampleNames
```

Description

Prepares initial samples to fill condition boxes. it reads the sample names from the data and splits into two.

Usage

```
getSampleNames(cnames = NULL, part = 1)
```

Arguments

cnames,	sample names in the header of a dataset
part,	c(1,2). 1=first half and 2= second half

Value

sample names.

Examples

```
x<-getSampleNames()
```

<code>getSamples</code>	<i>getSamples</i>
-------------------------	-------------------

Description

Gathers the sample names to be used within DEBrowser.

Usage

```
getSamples(cnames = NULL, index = 1)
```

Arguments

<code>cnames</code> ,	names of the samples
<code>index</code> ,	starting column in a tab separated file

Value

choices

Examples

```
x <- getSamples()
```

<code>getSearchData</code>	<i>getSearchData</i>
----------------------------	----------------------

Description

search the geneset in the tables and return it

Usage

```
getSearchData(dat = NULL, input = NULL)
```

Arguments

<code>dat</code> ,	table data
<code>input</code> ,	input params

Value

data

Examples

```
x <- getSearchData()
```

`getSelectedCols` *getSelectedCols*

Description

gets selected columns

Usage

```
getSelectedCols(data = NULL, datasetInput = NULL, input = NULL)
```

Arguments

`data`, all loaded data
`datasetInput`, selected dataset
`input`, user input params

Examples

```
getSelectedCols()
```

`getSelectedDatasetInput`
getSelectedDatasetInput

Description

Gathers the user selected dataset output to be displayed.

Usage

```
getSelectedDatasetInput(rdata = NULL, getSelected = NULL,  
  getMostVaried = NULL, mergedComparison = NULL, input = NULL)
```

Arguments

rdata,	filtered dataset
getSelected,	selected data
getMostVaried,	most varied data
mergedComparison,	merged comparison data
input,	input parameters

Value

data

Examples

```
x <- getSelectedDatasetInput()
```

getSelectInputBox	<i>getSelectInputBox</i>
-------------------	--------------------------

Description

Selects user input conditions to run in DESeq.

Usage

```
getSelectInputBox(id = NULL, name = NULL, num = 0, choices = NULL,  
selected = NULL, cw = 2)
```

Arguments

id,	input id
name,	label of the box
num,	panel that is going to be shown
choices,	sample list
selected,	selected sample list
cw,	column width

Examples

```
x <- getSelectInputBox()
```

`getSelHeat`*getSelHeat*

Description

heatmap selection functionality

Usage

```
getSelHeat(expdata = NULL, input = NULL)
```

Arguments

expdata, selected genes
input, input params

Value

plot

Examples

```
x <- getSelHeat()
```

`getShapeColor`*getShapeColor*

Description

Generates the fill and shape selection boxes for PCA plots. metadata file has to be loaded in this case

Usage

```
getShapeColor(input = NULL)
```

Arguments

input, input values

Value

Color and shape from selection boxes or defaults

Examples

```
x <- getShapeColor()
```

getStartPlotsMsg	<i>getStartPlotsMsg</i>
------------------	-------------------------

Description

Generates and displays the starting message to be shown once the user has first seen the main plots page within DEBrowser.

Usage

```
getStartPlotsMsg()
```

Value

return start plot msg

Note

```
getStartPlotsMsg
```

Examples

```
x <- getStartPlotsMsg()
```

getStartupMsg	<i>getStartupMsg</i>
---------------	----------------------

Description

Generates and displays the starting message within DEBrowser.

Usage

```
getStartupMsg()
```

Value

return startup msg

Note

```
getStartupMsg
```

Examples

```
x <- getStartupMsg()
```

getTableDetails	<i>getTableDetails</i>
-----------------	------------------------

Description

getTableDetails To be able to put a table into two lines are necessary; into the server part; getTableDetails(output, session, "dataname", data, modal=TRUE) into the ui part; uiOutput(ns("dataname"))

Usage

```
getTableDetails(output = NULL, session = NULL, tablename = NULL,
  data = NULL, modal = NULL)
```

Arguments

output,	output
session,	session
tablename,	table name
data,	matrix data
modal,	if it is true, the matrix is going to be in a modal

Value

panel

Examples

```
x <- getTableDetails()
```

getTableModal	<i>getTableModal prepares table modal for KEGG</i>
---------------	--

Description

getTableModal prepares table modal for KEGG

Usage

```
getTableModal()
```

Value

the info button

Examples

```
x<- getTableModal()
```

getTableStyle	<i>getTableStyle</i>
---------------	----------------------

Description

User defined selection that selects the style of table to display within the DEBrowser.

Usage

```
getTableStyle(dat = NULL, input = NULL, padj = c("padj"),  
             foldChange = c("foldChange"), DEsection = TRUE)
```

Arguments

dat,	dataset
input,	input params
padj,	the name of the padj value column in the dataset
foldChange,	the name of the foldChange column in the dataset
DEsection,	if it is in DESection or not

Note

getTableStyle

Examples

```
x <- getTableStyle()
```

getTabUpdateJS	<i>getTabUpdateJS premenu tab and discovery menu tab updates</i>
----------------	--

Description

getTabUpdateJS premenu tab and discovery menu tab updates

Usage

```
getTabUpdateJS()
```

Value

the JS for tab updates

Examples

```
x<- getTabUpdateJS()
```

getTextOnOff	<i>getTextOnOff</i>
--------------	---------------------

Description

text on PCA plot on and off

Usage

```
getTextOnOff(id = "pca")
```

Arguments

id, namespace id

Note

getTextOnOff

Examples

```
x <- getTextOnOff("pca")
```

getUp	<i>getUp get up regulated data</i>
-------	------------------------------------

Description

getUp get up regulated data

Usage

```
getUp(filt_data = NULL)
```

Arguments

filt_data, filt_data

Value

data

Examples

```
x <- getUp()
```

getUpDown	<i>getUpDown get up+down regulated data</i>
-----------	---

Description

getUpDown get up+down regulated data

Usage

```
getUpDown(filt_data = NULL)
```

Arguments

filt_data, filt_data

Value

data

Examples

```
x <- getUpDown()
```

getVariationData	<i>getVariationData</i>
------------------	-------------------------

Description

Adds an id to the data frame being used.

Usage

```
getVariationData(inputdata = NULL, cols = NULL, conds = NULL,  
key = NULL)
```

Arguments

inputdata, dataset
cols, columns
conds, conditions
key, gene or region name

Value

plotdata

Examples

```
x <- getVariationData()
```

```
get_conditions_given_selection  
    get_conditions_given_selection
```

Description

Return the two set of conditions given the selection of meta select box

Usage

```
get_conditions_given_selection(metadata = NULL, selection = NULL)
```

Arguments

metadata,	meta data table
selection,	selection

Value

meta select box

Examples

```
x<-get_conditions_given_selection()
```

```
heatmapControlsUI    heatmapControlsUI
```

Description

Generates the left menu to be used for heatmap plots

Usage

```
heatmapControlsUI(id)
```

Arguments

id,	module ID
-----	-----------

Value

HeatmapControls

Note

heatmapControlsUI

Examples

```
x <- heatmapControlsUI("heatmap")
```

heatmapJScore	<i>heatmapJScore</i>
---------------	----------------------

Description

heatmap JS code for selection functionality

Usage

```
heatmapJScore()
```

Value

JS Code

Examples

```
x <- heatmapJScore()
```

heatmapServer	<i>heatmapServer</i>
---------------	----------------------

Description

Sets up shinyServer to be able to run heatmapServer interactively.

Usage

```
heatmapServer(input, output, session)
```

Arguments

input,	input params from UI
output,	output params to UI
session,	session variable

Value

the panel for main plots;

Note

heatmapServer

Examples

```
heatmapServer
```

heatmapUI	<i>heatmapUI</i>
-----------	------------------

Description

Creates a shinyUI to be able to run DEBrowser interactively.

Usage

```
heatmapUI(input, output, session)
```

Arguments

input,	input variables
output,	output objects
session,	session

Value

the panel for heatmapUI;

Note

heatmapUI

Examples

```
x<-heatmapUI()
```

hideObj	<i>hideObj</i>
---------	----------------

Description

Hides a shiny object.

Usage

```
hideObj(btns = NULL)
```

Arguments

btns,	hide group of objects with shinyjs
-------	------------------------------------

Examples

```
x <- hideObj()
```

histogramControlsUI *histogramControlsUI*

Description

Generates the controls in the left menu for a histogram

Usage

histogramControlsUI(id)

Arguments

id, namespace id

Value

returns the left menu

Note

histogramControlsUI

Examples

```
x <- histogramControlsUI("histogram")
```

installpack *installpack*

Description

install packages if they don't exist display.

Usage

installpack(package_name = NULL)

Arguments

package_name, package name to be installed

Note

installpack

Examples

```
x <- installpack()
```

IQRPlotControlsUI *IQRPlotControlsUI*

Description

Generates the controls in the left menu for an IQR plot#'

Usage

```
IQRPlotControlsUI(id)
```

Arguments

id, namespace id

Value

returns the left menu

Note

IQRPlotControlsUI

Examples

```
x <- IQRPlotControlsUI("IQR")
```

kmeansControlsUI *kmeansControlsUI*

Description

get kmeans controls

Usage

```
kmeansControlsUI(id)
```

Arguments

id, module ID

Value

controls

Note

kmeansControlsUI

Examples

```
x <- kmeansControlsUI("heatmap")
```

lcfMetRadio	<i>lcfMetRadio</i>
-------------	--------------------

Description

Radio buttons for low count removal methods

Usage

```
lcfMetRadio(id)
```

Arguments

id, namespace id

Value

radio control

Note

lcfMetRadio

Examples

```
x <- lcfMetRadio("lcf")
```

loadpack	<i>loadpack</i>
----------	-----------------

Description

load packages

Usage

```
loadpack(package_name = NULL)
```

Arguments

package_name, package name to be loaded

Note

loadpack

Examples

```
x <- loadpack()
```

mainPlotControlsUI	<i>mainPlotControlsUI</i>
--------------------	---------------------------

Description

Generates the left menu to be used for main plots

Usage

```
mainPlotControlsUI(id)
```

Arguments

id,	module ID
-----	-----------

Value

mainPlotControls

Note

mainPlotControlsUI

Examples

```
x <- mainPlotControlsUI("main")
```

mainScatterNew	<i>mainScatterNew</i>
----------------	-----------------------

Description

Creates the main scatter, volcano or MA plot to be displayed within the main panel.

Usage

```
mainScatterNew(input = NULL, data = NULL, source = NULL, x = NULL,
  y = NULL)
```

Arguments

input,	input params
data,	dataframe that has log2FoldChange and log10padj values
source,	for event triggering to select genes
x,	the name of the x coordinate
y,	the name of the y coordinate

Value

scatter, volcano or MA plot

Examples

```
x <- mainScatterNew()
```

niceKmeans

niceKmeans

Description

Generates hierarchially clustered K-means clusters

Usage

```
niceKmeans(df = NULL, input = NULL, iter.max = 1000, nstart = 100)
```

Arguments

df,	data
input,	user inputs
iter.max,	max iteration for kmeans clustering
nstart,	n for kmeans clustering

Value

heatmap plot area

Note

niceKmeans

Examples

```
x <- niceKmeans()
```

normalizationMethods

normalizationMethods

Description

Select box to select normalization method prior to batch effect correction

Usage

```
normalizationMethods(id)
```

Arguments

id,	namespace id
-----	--------------

Value

radio control

Note

normalizationMethods

Examples

```
x <- normalizationMethods("batch")
```

palUI

palUI

Description

get pallete

Usage

```
palUI(id)
```

Arguments

id, namespace ID

Value

pals

Note

palUI

Examples

```
x <- palUI("heatmap")
```

panel.cor	<i>panel.cor</i>
-----------	------------------

Description

Prepares the correlations for the all2all plot.

Usage

```
panel.cor(x, y, prefix = "rho=", cex.cor = 2, ...)
```

Arguments

x,	numeric vector x
y,	numeric vector y
prefix,	prefix for the text
cex.cor,	correlation font size
...,	additional parameters

Value

all2all correlation plots

Examples

```
panel.cor(c(1,2,3), c(4,5,6))
```

panel.hist	<i>panel.hist</i>
------------	-------------------

Description

Prepares the histogram for the all2all plot.

Usage

```
panel.hist(x, ...)
```

Arguments

x,	a vector of values for which the histogram is desired
...,	any additional params

Value

all2all histogram plots

Examples

```
panel.hist(1)
```

pcaPlotControlsUI	<i>pcaPlotControlsUI</i>
-------------------	--------------------------

Description

Generates the PCA Plots Left menu to be displayed within the DEBrowser.

Usage

```
pcaPlotControlsUI(id = "pca")
```

Arguments

id,	namespace id
-----	--------------

Value

returns the left menu according to the selected tab;

Note

pcaPlotControlsUI

Examples

```
x <- pcaPlotControlsUI("pca")
```

plotData	<i>plotData</i>
----------	-----------------

Description

prepare plot data for mainplots

Usage

```
plotData(pdata = NULL, input = NULL)
```

Arguments

pdata,	data
input,	input

Value

prepdata

Note

plotData

Examples

```
x <- plotData()
```

plotMarginsUI	<i>plotMarginsUI</i>
---------------	----------------------

Description

Margins module for plotly plots

Usage

```
plotMarginsUI(id, t = 20, b = 100, l = 100, r = 20)
```

Arguments

id,	id
t,	top margin
b,	bottom margin
l,	left margin
r,	right margin

Value

size and margins controls

Note

plotMarginsUI

Examples

```
x <- plotMarginsUI("heatmap")
```

plotSizeMarginsUI	<i>plotSizeMarginsUI</i>
-------------------	--------------------------

Description

Size and margins module for plotly plots

Usage

```
plotSizeMarginsUI(id, w = 800, h = 640, t = 20, b = 100, l = 100,  
r = 20)
```

Arguments

id,	id
w,	width
h,	height
t,	top margin
b,	bottom margin
l,	left margin
r,	right margin

Value

size and margins controls

Note

plotSizeMarginsUI

Examples

```
x <- plotSizeMarginsUI("heatmap")
```

plotSizeUI

plotSizeUI

Description

Size module for plotly plots

Usage

```
plotSizeUI(id, w = 800, h = 600)
```

Arguments

id,	id
w,	width
h,	height

Value

size and margins controls

Note

plotSizeUI

Examples

```
x <- plotSizeUI("heatmap")
```

plot_pca	<i>plot_pca</i>
----------	-----------------

Description

Plots the PCA results for the selected dataset.

Usage

```
plot_pca(dat = NULL, pcx = 1, pcy = 2, metadata = NULL,
         color = NULL, shape = NULL, size = NULL, textonoff = "Off",
         legendSelect = "samples", input = NULL)
```

Arguments

dat,	data
pcx,	x axis label
pcy,	y axis label
metadata,	additional data
color,	color for plot
shape,	shape for plot
size,	size of the plot
textonoff,	text on off
legendSelect,	select legend
input,	input param

Value

pca list

Examples

```
load(system.file("extdata", "demo", "demodata.Rda",
                package="debrowser"))
metadata<-cbind(colnames(demodata[,1:6]),
               colnames(demodata[,1:6]),
               c(rep("Cond1",3), rep("Cond2",3)))
colnames(metadata)<-c("samples", "color", "shape")

a <- plot_pca(getNormalizedMatrix(
  demodata[rowSums(demodata[,1:6])>10,1:6]),
  metadata = metadata, color = "samples",
  size = 5, shape = "shape")
```

```
prepDataContainer      prepDataContainer
```

Description

Prepares the data container that stores values used within DESeq.

Usage

```
prepDataContainer(data = NULL, counter = NULL, input = NULL)
```

Arguments

```
data,          loaded dataset
counter,       the number of comparisons
input,         input parameters
```

Value

data

Examples

```
x <- prepDataContainer()
```

```
prepDEOutput          prepDEOutput
```

Description

Prepares the output data from DE analysis to be used within DEBrowser

Usage

```
prepDEOutput(data = NULL, cols = NULL, conds = NULL,
              inputconds = NULL, i = NULL, input = NULL)
```

Arguments

```
data,          loaded dataset
cols,          columns
conds,         conds
inputconds,    inputconds
i,             selected comparison number
input,         input
```

Value

data

Examples

```
x <- prepDEOutput()
```

prepGroup	<i>prepGroup</i>
-----------	------------------

Description

prepare group table

Usage

```
prepGroup(conds = NULL, cols = NULL)
```

Arguments

conds,	inputconds
cols,	columns

Value

data

Examples

```
x <- prepGroup()
```

prepHeatData	<i>prepHeatData</i>
--------------	---------------------

Description

scales the data

Usage

```
prepHeatData(expdata = NULL, input = NULL)
```

Arguments

expdata,	a matrixthat includes expression values
input,	input variables

Value

heatdata

Examples

```
x <- prepHeatData()
```

prepPCADat

prepPCADat

Description

prepares pca data with metadata. If metadata doesn't exist it puts all the samples into a single group; "Conds".

Usage

```
prepPCADat(pca_data = NULL, metadata = NULL, input = NULL, pcx = 1,  
           pcy = 2)
```

Arguments

pca_data,	pca run results
metadata,	additional meta data
input,	input
pcx,	x axis label
pcy,	y axis label

Value

Color and shape from selection boxes or defaults

Examples

```
x <- prepPCADat()
```

push	<i>push</i>
------	-------------

Description

Push an object to the list.

Usage

```
push(1, ...)
```

Arguments

1,	that are going to push to the list
...,	list object

Value

combined list

Examples

```
mylist <- list()
newlist <- push ( 1, mylist )
```

removeCols	<i>removeCols</i>
------------	-------------------

Description

remove unnecessary columns

Usage

```
removeCols(cols = NULL, dat = NULL)
```

Arguments

cols,	columns that are going to be removed from data frame
dat,	data

Value

data

Examples

```
x <- removeCols()
```

round_vals	<i>round_vals</i>
------------	-------------------

Description

Plot PCA results.

Usage

```
round_vals(1)
```

Arguments

1, the value

Value

round value

Examples

```
x<-round_vals(5.1323223)
```

runDE	<i>runDE</i>
-------	--------------

Description

Run DE algorithms on the selected parameters. Output is to be used for the interactive display.

Usage

```
runDE(data = NULL, columns = NULL, conds = NULL, params = NULL)
```

Arguments

data,	A matrix that includes all the expression raw counts, rownames has to be the gene, isoform or region names/IDs
columns,	is a vector that includes the columns that are going to be analyzed. These columns has to match with the given data.
conds,	experimental conditions. The order has to match with the column order
params,	all params for the DE methods

Value

de results

Examples

```
x <- runDE()
```

runDESeq2

runDESeq2

Description

Run DESeq2 algorithm on the selected conditions. Output is to be used for the interactive display.

Usage

```
runDESeq2(data = NULL, columns = NULL, conds = NULL, params = NULL)
```

Arguments

<code>data</code> ,	A matrix that includes all the expression raw counts, rownames has to be the gene, isoform or region names/IDs
<code>columns</code> ,	is a vector that includes the columns that are going to be analyzed. These columns has to match with the given data.
<code>conds</code> ,	experimental conditions. The order has to match with the column order
<code>params</code> ,	fitType: either "parametric", "local", or "mean" for the type of fitting of dispersions to the mean intensity. See estimateDispersions for description. betaPrior: whether or not to put a zero-mean normal prior on the non-intercept coefficients See nbinomWaldTest for description of the calculation of the beta prior. By default, the beta prior is used only for the Wald test, but can also be specified for the likelihood ratio test. testType: either "Wald" or "LRT", which will then use either Wald significance tests (defined by nbinomWaldTest), or the likelihood ratio test on the difference in deviance between a full and reduced model formula (defined by nbinomLRT) rowsum.filter: regions/genes/isoforms with total count (across all samples) below this value will be filtered out

Value

deseq2 results

Examples

```
x <- runDESeq2()
```

runEdgeR

runEdgeR

Description

Run EdgeR algorithm on the selected conditions. Output is to be used for the interactive display.

Usage

```
runEdgeR(data = NULL, columns = NULL, conds = NULL, params = NULL)
```

Arguments

data,	A matrix that includes all the expression raw counts, rownames has to be the gene, isoform or region names/IDs
columns,	is a vector that includes the columns that are going to be analyzed. These columns has to match with the given data.
conds,	experimental conditions. The order has to match with the column order
params,	normfact: Calculate normalization factors to scale the raw library sizes. Values can be "TMM", "RLE", "upperquartile", "none". dispersion: either a numeric vector of dispersions or a character string indicating that dispersions should be taken from the data object. If a numeric vector, then can be either of length one or of length equal to the number of genes. Allowable character values are "common", "trended", "tagwise" or "auto". Default behavior ("auto" is to use most complex dispersions found in data object. testType: exactTest or glmLRT. exactTest: Computes p-values for differential abundance for each gene between two digital libraries, conditioning on the total count for each gene. The counts in each group as a proportion of the whole are assumed to follow a binomial distribution. glmLRT: Fit a negative binomial generalized log-linear model to the read counts for each gene. Conduct genewise statistical tests for a given coefficient or coefficient contrast. rowsum.filter: regions/genes/isoforms with total count (across all samples) below this value will be filtered out

Value

edgeR results

Examples

```
x <- runEdgeR()
```

runHeatmap

runHeatmap

Description

Creates a heatmap based on the user selected parameters within shiny

Usage

```
runHeatmap(input = NULL, session = NULL, expdata = NULL)
```

Arguments

input,	input variables
session,	session
expdata,	a matrix that includes expression values

Value

heatmapply plot

Examples

```
x <- runHeatmap()
```

runHeatmap2

runHeatmap2

Description

Creates a heatmap based on the user selected parameters within shiny

Usage

```
runHeatmap2(input = NULL, session = NULL, expdata = NULL)
```

Arguments

input, input variables
session, session
expdata, a matrix that includes expression values

Value

heatmap.2

Examples

```
x <- runHeatmap2()
```

runLimma

runLimma

Description

Run Limma algorithm on the selected conditions. Output is to be used for the interactive display.

Usage

```
runLimma(data = NULL, columns = NULL, conds = NULL, params = NULL)
```

Arguments

data,	A matrix that includes all the expression raw counts, rownames has to be the gene, isoform or region names/IDs
columns,	is a vector that includes the columns that are going to be analyzed. These columns has to match with the given data.
conds,	experimental conditions. The order has to match with the column order
params,	normfact: Calculate normalization factors to scale the raw library sizes. Values can be "TMM", "RLE", "upperquartile", "none". fitType, fitting method; "ls" for least squares or "robust" for robust regression normBet: Normalizes expression intensities so that the intensities or log-ratios have similar distributions across a set of arrays. rowsum.filter: regions/genes/isoforms with total count (across all samples) below this value will be filtered out

Value

Limma results

Examples

```
x <- runLimma()
```

run_pca

run_pca

Description

Runs PCA on the selected dataset.

Usage

```
run_pca(x = NULL, retx = TRUE, center = TRUE, scale = TRUE)
```

Arguments

x,	dataframe with experiment data
retx,	specifies if the data should be returned
center,	center the PCA (Boolean)
scale,	scale the PCA (Boolean)

Value

pca list

Examples

```
load(system.file("extdata", "demo", "demodata.Rda",
  package="debrowser"))
pca_data<-run_pca(getNormalizedMatrix(
  demodata[rowSums(demodata[,1:6])>10,1:6]))
```

selectConditions	<i>selectConditions</i>
------------------	-------------------------

Description

Selects user input conditions, multiple if present, to be used in DESeq.

Usage

```
selectConditions(Dataset = NULL, metadata = NULL,
  choicecounter = NULL, input = NULL)
```

Arguments

Dataset,	used dataset
metadata,	metadatatable to select from metadata
choicecounter,	choicecounter to add multiple comparisons
input,	input params

Value

the panel for go plots;

Note

selectConditions

Examples

```
x<- selectConditions()
```

selectedInput	<i>selectedInput</i>
---------------	----------------------

Description

Selects user input conditions to run in DESeq.

Usage

```
selectedInput(id = NULL, num = 0, default = NULL, input = NULL)
```

Arguments

id,	input id
num,	panel that is going to be shown
default,	default text
input,	input params

Examples

```
x <- selectedInput()
```

selectGroupInfo	<i>selectGroupInfo</i>
-----------------	------------------------

Description

Group info column selection. This can be used in batch effect or coloring the groups in the plots.

Usage

```
selectGroupInfo(metadata = NULL, input = NULL,
  selectname = "groupselect", label = "Group info")
```

Arguments

metadata,	metadata
input,	input values
selectname,	name of the select box
label,	label of the select box

Note

selectGroupInfo

Examples

```
x <- selectGroupInfo()
```

sepRadio	<i>sepRadio</i>
----------	-----------------

Description

Radio button for separators

Usage

```
sepRadio(id, name)
```

Arguments

id,	module id
name,	name

Value

radio control

Note

sepRadio

Examples

```
x <- sepRadio("meta", "metadata")
```

setBatch

setBatch to skip batch effect correction batch variable set with the filter results

Description

setBatch to skip batch effect correction batch variable set with the filter results

Usage

```
setBatch(fd = NULL)
```

Arguments

fd, filtered data

Value

fd data

Examples

```
x <- setBatch()
```

showObj	<i>showObj</i>
---------	----------------

Description

Displays a shiny object.

Usage

```
showObj(btns = NULL)
```

Arguments

btns, show group of objects with shinyjs

Examples

```
x <- showObj()
```

startDEBrowser	<i>startDEBrowser</i>
----------------	-----------------------

Description

Starts the DEBrowser to be able to run interactively.

Usage

```
startDEBrowser()
```

Value

the app

Note

```
startDEBrowser
```

Examples

```
startDEBrowser()
```

startHeatmap	<i>startHeatmap</i>
--------------	---------------------

Description

Starts the DEBrowser heatmap

Usage

```
startHeatmap()
```

Value

the app

Note

startHeatmap

Examples

```
startHeatmap()
```

textareaInput	<i>textareaInput</i>
---------------	----------------------

Description

Generates a text area input to be used for gene selection within the DEBrowser.

Usage

```
textareaInput(id, label, value, rows = 20, cols = 35,
  class = "form-control")
```

Arguments

id,	id of the control
label,	label of the control
value,	initial value
rows,	the # of rows
cols,	the # of cols
class,	css class

Examples

```
x <- textareaInput("genesetarea", "Gene Set",
  "Fgf21", rows = 5, cols = 35)
```

togglePanels	<i>togglePanels</i>
--------------	---------------------

Description

User defined toggle to display which panels are to be shown within DEBrowser.

Usage

```
togglePanels(num = NULL, nums = NULL, session = NULL)
```

Arguments

num,	selected panel
nums,	all panels
session,	session info

Note

```
togglePanels
```

Examples

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x <- togglePanels()
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