

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, gplots, DT, ggplot2, RColorBrewer, annotate, AnnotationDbi, DESeq2, DOSE, igraph, grDevices, graphics, stats, utils, GenomicRanges, IRanges, S4Vectors, SummarizedExperiment, stringi, reshape2, org.Hs.eg.db, org.Mm.eg.db, limma, edgeR, clusterProfiler, methods, sva, RCurl, enrichplot, colourpicker, plotly, heatmaply, Harman, pathview, apeglm, ashR

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Suggests testthat, rmarkdown, knitr

VignetteBuilder knitr, rmarkdown

URL <https://github.com/UMMS-Biocore/debrowser>

BugReports <https://github.com/UMMS-Biocore/debrowser/issues/new>

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R topics documented:

actionButtonDE	6
addDataCols	7
addID	8
all2all	8
all2allControlsUI	9
applyFilters	9
applyFiltersNew	10
applyFiltersToMergedComparison	10
barMainPlotControlsUI	11
batchEffectUI	12
batchMethod	12
BoxMainPlotControlsUI	13
changeClusterOrder	13
checkCountData	14
checkMetaData	15
clusterData	15
clustFunParamsUI	16
compareClust	16
condSelectUI	17
correctCombat	18
correctHarman	18
customColorsUI	19
cutOffSelectionUI	20
dataLCFUI	20
dataLoadUI	21
debrowserall2all	21
debrowserbarmainplot	22
debrowserbatheffect	23
debrowserboxmainplot	23
debrowsercondselect	24
debrowserdataload	25
debrowserdeanalysis	26
debrowserdensityplot	27

debrowserheatmap	27
debrowserhistogram	28
debrowserIQRplot	29
debrowserlowcountfilter	29
debrowsermainplot	30
debrowserpcaplot	31
dendControlsUI	31
densityPlotControlsUI	32
deServer	33
deUI	33
distFunParamsUI	34
drawKEGG	34
drawPCAExplained	35
fileTypes	36
fileUploadBox	36
generateTestData	37
getAfterLoadMsg	37
getAll2AllPlotUI	38
getBarMainPlot	39
getBarMainPlotUI	39
getBoxMainPlot	40
getBoxMainPlotUI	41
getBSTableUI	41
getColors	42
getColorShapeSelection	43
getCompSelection	43
getConditionSelector	44
getConditionSelectorFromMeta	44
getCondMsg	45
getCovariateDetails	46
getCutOffSelection	46
getDataAssesmentText	47
getDataForTables	47
getDataPreparationText	48
getDEAnalysisText	49
getDensityPlot	49
getDensityPlotUI	50
getDEResultsUI	50
getDomains	51
getDown	51
getDownloadSection	52
getEnrichDO	52
getEnrichGO	53
getEnrichKEGG	54
getEntrezIds	54
getEntrezTable	55
getGeneList	56
getGeneSetData	57

getGOLeftMenu	57
getGoPanel	58
getGOPlots	58
getGroupSelector	59
getGSEA	60
getHeatmapUI	60
getHelpButton	61
getHideLegendOnOff	62
getHistogramUI	62
getIntroText	63
getIQRPlot	63
getIQRPlotUI	64
getJSLine	64
getKEGGModal	65
getLeftMenu	65
getLegendColors	66
getLegendRadio	67
getLegendSelect	67
getLevelOrder	68
getLoadingMsg	68
getLogo	69
getMainPanel	70
getMainPlotsLeftMenu	70
getMainPlotUI	71
getMean	71
getMergedComparison	72
getMetaSelector	72
getMethodDetails	73
getMostVariedList	73
getNormalizedMatrix	74
getOrganism	75
getOrganismBox	75
getOrganismPathway	76
getPCAcontolUpdatesJS	76
getPCAexplained	77
getPCAPlotUI	78
getPCselection	78
getPlotArea	79
getProgramTitle	80
getQAText	80
getQCLeftMenu	81
getQCPanel	81
getSampleDetails	82
getSampleNames	83
getSamples	83
getSearchData	84
getSelectedCols	84
getSelectedDatasetInput	85

getSelectInputBox	86
getSelHeat	86
getShapeColor	87
getStartPlotsMsg	88
getStartupMsg	88
getTableDetails	89
getTableModal	89
getTableStyle	90
getTabUpdateJS	91
getTextOnOff	91
getUp	92
getUpDown	92
getVariationData	93
get_conditions_given_selection	93
heatmapControlsUI	94
heatmapJScore	95
heatmapServer	95
heatmapUI	96
hideObj	97
histogramControlsUI	97
installpack	98
IQRPlotControlsUI	98
kmeansControlsUI	99
lcfMetRadio	99
loadpack	100
mainPlotControlsUI	101
mainScatterNew	101
niceKmeans	102
normalizationMethods	103
palUI	103
panel.cor	104
panel.hist	105
pcaPlotControlsUI	105
plotData	106
plotMarginsUI	106
plotSizeMarginsUI	107
plotSizeUI	108
plotTypeUI	109
plot_pca	109
prepDataContainer	110
prepDEOutput	111
prepGroup	112
prepHeatData	112
prepPCADat	113
push	114
removeCols	114
removeExtraCols	115
round_vals	115

runDE	116
runDESeq2	116
runEdgeR	118
runHeatmap	119
runHeatmap2	119
runLimma	120
run_pca	121
selectConditions	121
selectedInput	122
selectGroupInfo	123
sepRadio	123
setBatch	124
showObj	125
startDEBrowser	125
startHeatmap	126
textareaInput	126
togglePanels	127

Index **128**

actionButtonDE *Buttons including Action Buttons and Event Buttons*

Description

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

Usage

```
actionButtonDE(
  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

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

addDataCols

addDataCols

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	<i>all2allControlsUI</i>
-------------------	--------------------------

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	<i>applyFilters</i>
--------------	---------------------

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()
```

<code>applyFiltersNew</code>	<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

<code>data</code> ,	loaded dataset
<code>input</code> ,	input parameters

Value

data

Examples

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

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

Description

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

Usage

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

Arguments

merged, merged data
nc, the number of comparisons
input, 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

id, namespace id

Value

returns the controls for left menu

Note

barMainPlotControlsUI

Examples

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

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

Description

batchEffectUI Creates a panel to correct 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()
```

`checkCountData`

checkCountData

Description

Returns if there is a problem in the count data.

Usage

```
checkCountData(input = NULL)
```

Arguments

`input`, `inputs`

Value

error if there is a problem about the loaded data

Note

`checkCountData`

Examples

```
x <- checkCountData()
```

checkMetaData	<i>checkMetaData</i>
---------------	----------------------

Description

Returns if there is a problem in the count data.

Usage

```
checkMetaData(input = NULL, counttable = NULL)
```

Arguments

input,	input
counttable,	counttable

Value

error if there is a problem about the loaded data

Note

checkMetaData

Examples

```
x <- checkMetaData()
```

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      clustFunParamsUI
```

Description

get cluster function parameter control

Usage

```
clustFunParamsUI()
```

Value

cluster params

Note

```
clustFunParamsUI
```

Examples

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

```
compareClust      compareClust
```

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

condSelectUI Creates a panel to select samples for each condition

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, method = NULL)
```

Arguments

input,	input values
idata,	data
metadata,	metadata
method,	method: either Combat or CombatSeq

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	<i>debrowserall2all</i>
------------------	-------------------------

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,  
  cols = NULL,  
  conds = NULL,  
  key = NULL  
)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values
cols,	columns
conds,	conditions
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,  
  cols = NULL,  
  conds = NULL,  
  key = NULL  
)
```

Arguments

input,	input variables
output,	output objects
session,	session
data,	a matrix that includes expression values
cols,	columns
conds,	conditions
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,  
  metadata = NULL,  
  columns = NULL,  
  conds = NULL,  
  params = NULL  
)
```

Arguments

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

heatmaply 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	<i>debrowsermainplot</i>
-------------------	--------------------------

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	<i>deServer</i>
----------	-----------------

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	<i>deUI</i>
------	-------------

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	<i>distFunParamsUI</i>
-----------------	------------------------

Description

get distance metric parameters

Usage

```
distFunParamsUI()
```

Value

funParams

Note

distFunParamsUI

Examples

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

drawKEGG	<i>drawKEGG</i>
----------	-----------------

Description

draw KEGG pathway with expression values

Usage

```
drawKEGG(input = NULL, dat = NULL, pid = NULL)
```

Arguments

input,	input
dat,	expression matrix
pid,	pathway id

Value

enriched DO

Note

drawKEGG

Examples

```
x <- drawKEGG()
```

<code>drawPCAExplained</code>	<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 *generateTestData*

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()
```

<code>getAll2AllPlotUI</code>	<i>getAll2AllPlotUI</i>
-------------------------------	-------------------------

Description

all2all plots UI.

Usage

```
getAll2AllPlotUI(id)
```

Arguments

`id`, `namespace id`

Value

the panel for all2all plots;

Note

```
getAll2AllPlotUI
```

Examples

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

`getBarMainPlot` *getBarMainPlot*

Description

Makes Density plots

Usage

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

Arguments

<code>data</code> ,	count or normalized data
<code>cols</code> ,	cols
<code>conds</code> ,	conds
<code>key</code> ,	key
<code>title</code> ,	title
<code>input</code> ,	input

Examples

```
getBarMainPlot()
```

`getBarMainPlotUI` *getBarMainPlotUI*

Description

main bar plots UI.

Usage

```
getBarMainPlotUI(id)
```

Arguments

id, namespace id

Value

the panel for Density plots;

Note

`getBarMainPlotUI`

Examples

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

<code>getBoxMainPlot</code>	<i>getBoxMainPlot</i>
-----------------------------	-----------------------

Description

Makes Density plots

Usage

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

Arguments

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

Examples

```
getBoxMainPlot()
```

`getBoxMainPlotUI` *getBoxMainPlotUI*

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` *getBSTableUI prepares a Modal to put a table*

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()
```

*getColor*s

*getColor*s

Description

get colors for the domains

Usage

```
getColor(s(domains = NULL))
```

Arguments

domains,	domains to be colored
----------	-----------------------

Value

colors

Examples

```
x<-getColor(s())
```

`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 = NULL, choices = NULL, selected = NULL)
```

Arguments

num,	panel that is going to be shown
choices,	sample list
selected,	selected smaple 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	<i>getCondMsg</i>
------------	-------------------

Description

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

Usage

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

Arguments

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

Value

return conditions

Note

getCondMsg

Examples

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

getCovariateDetails *get the covariate detail box after DE method selected*

Description

get the covariate detail box after DE method selected

Usage

```
getCovariateDetails(num = NULL, input = NULL, metadata = NULL)
```

Arguments

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

Examples

```
x <- getCovariateDetails()
```

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` *getDataForTables 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

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

Value

data

Examples

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

`getDataPreparationText`

getDataPreparationText DataPreparation text

Description

`getDataPreparationText` DataPreparation text

Usage

```
getDataPreparationText()
```

Value

help text for data preparation

Examples

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

`getDEAnalysisText` *getDEAnalysisText DEAnalysis text*

Description

`getDEAnalysisText` DEAnalysis text

Usage

`getDEAnalysisText()`

Value

help text for DE Analysis

Examples

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

`getDensityPlot` *getDensityPlot*

Description

Makes Density plots

Usage

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

Arguments

<code>data,</code>	count or normalized data
<code>input,</code>	input
<code>title,</code>	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 Creates a panel to visualize DE results</i>
----------------	---

Description

getDEResultsUI Creates a panel to visualize DE results

Usage

```
getDEResultsUI(id)
```

Arguments

id, namespace id

Value

panel

Examples

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

getDomains	<i>getDomains</i>
------------	-------------------

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	<i>getDown get down regulated data</i>
---------	--

Description

getDown get down regulated data

Usage

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

Arguments

filt_data, filt_data

Value

data

Examples

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

getDownloadSection	<i>getDownloadSection</i>
--------------------	---------------------------

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	<i>getEnrichDO</i>
-------------	--------------------

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 <- getEnrichDO()
```

`getEnrichGO`*getEnrichGO*

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

<code>genelist</code> ,	gene list
<code>pvalueCutoff</code> ,	p value cutoff
<code>org</code> ,	the organism used
<code>ont</code> ,	the ontology used

Value

Enriched GO

Note`getEnrichGO`**Examples**

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

<code>getEnrichKEGG</code>	<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

<code>genelist</code> ,	gene list
<code>pvalueCutoff</code> ,	the p value cutoff
<code>org</code> ,	the organism used

Value

Enriched KEGG

Note

`getEnrichKEGG`

Examples

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

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

Description

Gathers the gene list to use for GOTerm analysis.

Usage

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

Arguments

<code>genes</code> ,	gene list with fold changes
<code>org</code> ,	organism for gene symbol entrez ID conversion

Value

ENTREZ ID list

Note

GOTerm
getEntrezIds symbol to ENTREZ ID conversion

Examples

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

getEntrezTable	<i>getEntrezTable</i>
----------------	-----------------------

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	<i>getGeneList</i>
-------------	--------------------

Description

Gathers the gene list to use for GOTerm analysis.

Usage

```
getGeneList(  
  genes = NULL,  
  org = "org.Hs.eg.db",  
  fromType = "SYMBOL",  
  toType = c("ENTREZID")  
)
```

Arguments

genes,	gene list
org,	organism for gene symbol entrez ID conversion
fromType,	from Type
toType,	to Type

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`*getGoPanel*

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`*getGOPlots*

Description

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

Usage

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

Arguments

<code>dataset,</code>	the dataset used
<code>GSEARes,</code>	GSEA results
<code>input,</code>	input params

Value

the panel for go plots;

Note

getGOPlots

Examples

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

getGroupSelector *getGroupSelector Return the groups*

Description

getGroupSelector Return the groups

Usage

```
getGroupSelector(metadata = NULL, input = NULL, index = 1, num = 0)
```

Arguments

metadata,	meta data table
input,	input params
index,	index
num,	num

Value

meta select box

Examples

```
x<-getGroupSelector()
```

getGSEA

getGSEA

Description

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

Usage

```
getGSEA(  
  dataset = NULL,  
  pvalueCutoff = 0.01,  
  org = "org.Hs.eg.db",  
  sortfield = "log2FoldChange"  
)
```

Arguments

dataset,	dataset
pvalueCutoff,	the p value cutoff
org,	the organism used
sortfield,	sort field for GSEA

Value

GSEA

Note

getGSEA

Examples

```
x <- getGSEA()
```

getHeatmapUI*getHeatmapUI*

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` *getIntroText Intro text*

Description

`getIntroText` Intro text

Usage

`getIntroText()`

Value

the JS for tab updates

Examples

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

`getIQRPlot` *getIQRPlot*

Description

Makes IQR boxplot plot

Usage

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

Arguments

<code>data,</code>	count or normalized data
<code>input,</code>	input
<code>title,</code>	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")
```

<code>getLevelOrder</code>	<i>getLevelOrder</i>
----------------------------	----------------------

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"))
```

<code>getLoadingMsg</code>	<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

getLogo

Description

Generates and displays the logo to be shown within DEBbrowser.

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 *get the detail boxes after DE method selected*

Description

get the detail boxes after DE method selected

Usage

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

Arguments

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

Examples

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

getMostVariedList *getMostVariedList*

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()
```

<i>getPCAexplained</i>	<i>getPCAexplained</i>
------------------------	------------------------

Description

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

Usage

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

Arguments

<code>datasetInput</code> ,	selected data
<code>pca_data</code> ,	from user
<code>input</code> ,	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

getPCselection

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`

getPlotArea

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	<i>getSampleNames</i>
----------------	-----------------------

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()
```

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

Description

Gathers the sample names to be used within DEBrowser.

Usage

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

Arguments

cnames,	names of the samples
index,	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()
```

<code>getSelectedCols</code>	<i>getSelectedCols</i>
------------------------------	------------------------

Description

gets selected columns

Usage

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

Arguments

<code>data</code> ,	all loaded data
<code>datasetInput</code> ,	selected dataset
<code>input</code> ,	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

<code>rdata,</code>	filtered dataset
<code>getSelected,</code>	selected data
<code>getMostVaried,</code>	most varied data
<code>mergedComparison,</code>	merged comparison data
<code>input,</code>	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,
  multiple = FALSE
)
```

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
multiple,	if multiple choices are available

Examples

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

getSelHeat	<i>getSelHeat</i>
------------	-------------------

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()
```

<code>getStartPlotsMsg</code>	<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()
```

<code>getStartupMsg</code>	<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

get table details 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()
```

<code>getTableStyle</code>	<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

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

Note

`getTableStyle`

Examples

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

`getTabUpdateJS` *getTabUpdateJS prepmenu tab and discovery menu tab updates*

Description

getTabUpdateJS prepmenu tab and discovery menu tab updates

Usage

```
getTabUpdateJS()
```

Value

the JS for tab updates

Examples

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

`getTextOnOff` *getTextOnOff*

Description

text on PCA plot on and off

Usage

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

Arguments

id, namespace id

Note

getTextOnOff

Examples

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

getUp *getUp get up regulated data*

Description

getUp get up regulated data

Usage

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

Arguments

filt_data, filt_data

Value

data

Examples

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

getUpDown *getUpDown get up+down regulated data*

Description

getUpDown get up+down regulated data

Usage

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

Arguments

filt_data, filt_data

Value

data

Examples

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

getVariationData *getVariationData*

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	<i>heatmapControlsUI</i>
-------------------	--------------------------

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
```

```
heatmapUI
```

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	<i>histogramControlsUI</i>
---------------------	----------------------------

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	<i>kmeansControlsUI</i>
------------------	-------------------------

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

loadpack

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)
```

Arguments

input, input params
data, dataframe that has log2FoldChange and log10padj values
source, for event triggering to select genes

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

panel.cor

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

plotData

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

plotMarginsUI

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 *plotSizeMarginsUI*

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")
```

plotTypeUI	<i>plotTypeUI</i>
------------	-------------------

Description

Plot download type

Usage

```
plotTypeUI(id)
```

Arguments

id, id

Value

size and margins controls

Note

plotTypeUI

Examples

```
x <- plotTypeUI("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

<code>dat</code> ,	data
<code>pcx</code> ,	x axis label
<code>pcy</code> ,	y axis label
<code>metadata</code> ,	additional data
<code>color</code> ,	color for plot
<code>shape</code> ,	shape for plot
<code>size</code> ,	size of the plot
<code>textonoff</code> ,	text on off
<code>legendSelect</code> ,	select legend
<code>input</code> ,	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, meta = NULL)
```

Arguments

data,	loaded dataset
counter,	the number of comparisons
input,	input parameters
meta,	loaded metadata

Value

data

Examples

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

prepDEOutput	<i>prepDEOutput</i>
--------------	---------------------

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, metadata = NULL, covariates = NULL)
```

Arguments

conds,	inputconds
cols,	columns
metadata,	metadata
covariates,	covariates

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	<i>prepPCADat</i>
------------	-------------------

Description

prepares pca data with metadata. If metadata doesn't exists it puts all the sampels into a signlge 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 *push*

Description

Push an object to the list.

Usage

```
push(l, ...)
```

Arguments

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

Value

combined list

Examples

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

removeCols *removeCols*

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()
```

removeExtraCols	<i>removeExtraCols</i>
-----------------	------------------------

Description

remove extra columns for QC plots

Usage

```
removeExtraCols(dat = NULL)
```

Arguments

dat, selected data

Examples

```
removeExtraCols()
```

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

runDE

Description

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

Usage

```
runDE(
  data = NULL,
  metadata = 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
metadata,	metadata of the matrix of expression raw counts
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,  
  metadata = 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
metadata,	metadata of the matrix of expression raw counts
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,	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) shrinkage: Adds shrunken log2 fold changes (LFC) and SE to a results table from DESeq run without LFC shrinkage. For consistency with results, the column name lfcSE is used here although what is returned is a posterior SD. Three shrinkage estimators for LFC are available via type (see the vignette for more details on the estimators). The apeglm publication demonstrates that 'apeglm' and 'ashr' outperform the original 'normal' shrinkage estimator.

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,
  metadata = 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
metadata,	metadata of the matrix of expression raw counts
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.

Value

edgeR results

Examples

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

runHeatmap	<i>runHeatmap</i>
------------	-------------------

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

heatmaply plot

Examples

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

runHeatmap2	<i>runHeatmap2</i>
-------------	--------------------

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,  
  metadata = 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
metadata,	metadata of the matrix of expression raw counts
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.

Value

Limma results

Examples

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

run_pca	<i>run_pca</i>
---------	----------------

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,  
  session = NULL,  
  input = NULL  
)
```

Arguments

Dataset, used dataset
 metadata, metadatatable to select from metadata
 choicecounter, choicecounter to add multiple comparisons
 session, session
 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	<i>setBatch to skip batch effect correction batch variable set with the filter results</i>
----------	--

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

```
x <- togglePanels()
```

Index

actionButtonDE, 6
addDataCols, 7
addID, 8
all2all, 8
all2allControlsUI, 9
applyFilters, 9
applyFiltersNew, 10
applyFiltersToMergedComparison, 10

barMainPlotControlsUI, 11
batchEffectUI, 12
batchMethod, 12
BoxMainPlotControlsUI, 13

changeClusterOrder, 13
checkCountData, 14
checkMetaData, 15
clusterData, 15
clustFunParamsUI, 16
compareClust, 16
condSelectUI, 17
correctCombat, 18
correctHarman, 18
customColorsUI, 19
cutOffSelectionUI, 20

dataLCFUI, 20
dataLoadUI, 21
debrowserall2all, 21
debrowserbarmainplot, 22
debrowserbatcheffect, 23
debrowserboxmainplot, 23
debrowsercondselect, 24
debrowserdataload, 25
debrowserdeanalysis, 26
debrowserdensityplot, 27
debrowserheatmap, 27
debrowserhistogram, 28
debrowserIQRplot, 29
debrowserlowcountfilter, 29

debrowsermainplot, 30
debrowserpcaplot, 31
dendControlsUI, 31
densityPlotControlsUI, 32
deServer, 33
deUI, 33
distFunParamsUI, 34
drawKEGG, 34
drawPCAExplained, 35

fileTypes, 36
fileUploadBox, 36

generateTestData, 37
get_conditions_given_selection, 93
getAfterLoadMsg, 37
getAll2AllPlotUI, 38
getBarMainPlot, 39
getBarMainPlotUI, 39
getBoxMainPlot, 40
getBoxMainPlotUI, 41
getBSTableUI, 41
getColors, 42
getColorShapeSelection, 43
getCompSelection, 43
getConditionSelector, 44
getConditionSelectorFromMeta, 44
getCondMsg, 45
getCovariateDetails, 46
getCutOffSelection, 46
getDataAssesmentText, 47
getDataForTables, 47
getDataPreparationText, 48
getDEAnalysisText, 49
getDensityPlot, 49
getDensityPlotUI, 50
getDEResultsUI, 50
getDomains, 51
getDown, 51
getDownloadSection, 52

getEnrichD0, 52
getEnrichG0, 53
getEnrichKEGG, 54
getEntrezIds, 54
getEntrezTable, 55
getGeneList, 56
getGeneSetData, 57
getGOLeftMenu, 57
getGoPanel, 58
getGOPlots, 58
getGroupSelector, 59
getGSEA, 60
getHeatmapUI, 60
getHelpButton, 61
getHideLegendOnOff, 62
getHistogramUI, 62
getIntroText, 63
getIQRPlot, 63
getIQRPlotUI, 64
getJSLine, 64
getKEGGModal, 65
getLeftMenu, 65
getLegendColors, 66
getLegendRadio, 67
getLegendSelect, 67
getLevelOrder, 68
getLoadingMsg, 68
getLogo, 69
getMainPanel, 70
getMainPlotsLeftMenu, 70
getMainPlotUI, 71
getMean, 71
getMergedComparison, 72
getMetaSelector, 72
getMethodDetails, 73
getMostVariedList, 73
getNormalizedMatrix, 74
getOrganism, 75
getOrganismBox, 75
getOrganismPathway, 76
getPCAcontolUpdatesJS, 76
getPCAexplained, 77
getPCAPlotUI, 78
getPCselection, 78
getPlotArea, 79
getProgramTitle, 80
getQAText, 80
getQCLeftMenu, 81
getQCPanel, 81
getSampleDetails, 82
getSampleNames, 83
getSamples, 83
getSearchData, 84
getSelectedCols, 84
getSelectedDatasetInput, 85
getSelectInputBox, 86
getSelHeat, 86
getShapeColor, 87
getStartPlotsMsg, 88
getStartupMsg, 88
getTableDetails, 89
getTableModal, 89
getTableStyle, 90
getTabUpdateJS, 91
getTextOnOff, 91
getUp, 92
getUpDown, 92
getVariationData, 93
heatmapControlsUI, 94
heatmapJScore, 95
heatmapServer, 95
heatmapUI, 96
hideObj, 97
histogramControlsUI, 97
installpack, 98
IQRPlotControlsUI, 98
kmeansControlsUI, 99
lcfMetRadio, 99
loadpack, 100
mainPlotControlsUI, 101
mainScatterNew, 101
niceKmeans, 102
normalizationMethods, 103
palUI, 103
panel.cor, 104
panel.hist, 105
pcaPlotControlsUI, 105
plot_pca, 109
plotData, 106
plotMarginsUI, 106
plotSizeMarginsUI, 107

plotSizeUI, 108
plotTypeUI, 109
prepDataContainer, 110
prepDEOutput, 111
prepGroup, 112
prepHeatData, 112
prepPCADat, 113
push, 114

removeCols, 114
removeExtraCols, 115
round_vals, 115
run_pca, 121
runDE, 116
runDESeq2, 116
runEdgeR, 118
runHeatmap, 119
runHeatmap2, 119
runLimma, 120

selectConditions, 121
selectedInput, 122
selectGroupInfo, 123
sepRadio, 123
setBatch, 124
showObj, 125
startDEBrowser, 125
startHeatmap, 126

textareaInput, 126
togglePanels, 127