cBuildHTML Methods

Name	Description
cBuildHTML	Build an instance of the object
getMarkupHTML	Get the HTML text of the table
saveTable	Save the table into a HTML file
showTable	Show a normal table in the web browser

cBuildLaTeX Methods

Name	Description
cBuildLaTeX	Create an instance of the class
getLaTeXcode	Get the LaTeX code as string
saveTable	Save the table as LaTeX code into filename

cBuildMarkdown Methods

Name	Description
cBuildMarkdown	Create an instance of the class
getMarkdownCode	Get the Markdown code as string
saveTable	Save the table as Markdown code into filename

cDataModel Methods

Name	Description
addExergyData	add a new exergy data state
addResourceData	Create a new cResourceData object and add to Resource samples
buildExergyData	Set the exergy data values of a state
buildResourceData	Create a new cResourceData object
cDataModel	Create an instance of the class
create	Create a cDataModel object from a file
existSample	Check if sample is defined in ResourceState
existState	Check if state is defined in States
getExergyData	Get the exergy data for a state
getResourceData	Get the resource data for a sample
getResultInfo	Get data model result info
getTableInfo	Get information about a table
getTablesDirectory	Get the tables directory
getWasteDefinition	Get Waste Data
saveDataModel	Save data model depending of filename extension
setExergyData	Set the exergy values of a state
setFlowResource	Set the flow-resource value of a sample
setProcessResource	Set the process-resource value of a sample
setWasteRecycled	Set the waste recycling ratios
setWasteType	Set the waste type allocation method for Active Waste
setWasteValues	Set the waste table values
showDataModel	View a table in a GUI Table
updateModel	Update the Data Model if there is changes
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only
ListOfGraphs	Get the list of graph tables as cell array
ListOfTables	Get the list of tables as cell array
StudyCase	Get/display the study case names

```
exportResults       Export result tables into a structure using diferent formats.
exportTable         Export table into the selected varmode/format
getTable            Get the table called name
getTableIndex       Get the table index of the results set
printResults        Print the result tables on console
saveResults         Save result tables in different file formats depending on file extension
saveTable           Save a result table into a file depending on extension
showResults         View an individual table
showTableIndex      View the index table of the results set
```

cDataset Methods

```
 Name        Description
───────────────────────────────────────────────────────────
 addValues   Add a new value at the end of the dataset
 cDataset    Build an instance of the object
 getValues   Get an element of the dataset
 setValues   Set the values in position indicates by arg
 addKey      Add a new key if doesn't exists
 existsKey   Check if key exists
 getIndex    Get the corresponding index of a key
 getKey      Get the corresponding key(s) of a set of indexes
 getKeys     Get the keys of the dictionary
 isIndex     Check if the index is valid.
 length      Length of the dictionary
 numel       Number of elements of the dictionary
 size        Size of the dictionary
```

cDiagnosis Methods

```
 Name                        Description
──────────────────────────────────────────────────────────────────────────
 buildResultInfo             Get cResultInfo object for thermoeconomic diagnosis
 cDiagnosis                  Create an object of the class
 getDemandCorrectionCost     Get Demand Variation effective cost.
 getDemandVariation          Get the system demand variation
 getDemandVariationCost      Get the system demand variation cost
 getDiagnosisTable           Get Diagnosis Table
 getExternalDisfunction      Get the external disfunction matrix
 getInternalDisfunction      Get the internal disfunction matrix
 getIrreversibilityTable     Build the irreversibility table
 getIrreversibilityVariation Get the unit process cost variation
 getMalfunction              Get the malfunction vector
 getMalfunctionCost          Get the malfunction cost vector (MF*)
 getMalfunctionCostTable     Get the malfunction cost table
 getMalfunctionTable         Get the Malfunction table
 getOutputVariation          Get the system output variation
 getUnitConsumptionVariation Get the unit consumption variation
 getUnitCostVariation        Get the unit process cost variation
 getWasteMalfunctionCost     Get the waste cost variation (MR*)
 getWasteMalfunctionCostTable Get the waste malfunction cost table
 getWasteVariation           Get waste variation
 setDefaultGraph             Set Default Graph. Internal package use only
 setResultId                 Set ResultId. Internal package use only
 setSample                   Set Resource Sample Name. Internal package use only
```

cDiagramFP Methods

```
 Name        Description
──────────────────────────────────────────────────────────────
```

```
buildResultInfo    Get cResultInfo object of the DiagramFP
cDiagramFP         Build an instance of this class
getNodesTable      Get the nodes  of a  diagram
setDefaultGraph    Set Default Graph. Internal package use only
setResultId        Set ResultId. Internal package use only
setSample          Set Resource Sample Name. Internal package use only
```

cDictionary Methods

Name	Description
addKey	Add a new key if doesn't exists
cDictionary	Construct an instance of this class
existsKey	Check if key exists
getIndex	Get the corresponding index of a key
getKey	Get the corresponding key(s) of a set of indexes
getKeys	Get the keys of the dictionary
isIndex	Check if the index is valid.
length	Length of the dictionary
numel	Number of elements of the dictionary
size	Size of the dictionary

cDigraph Methods

Name	Description
cDigraph	Build an instance of the class
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cDigraphAnalysis Methods

Name	Description
cDigraphAnalysis	Construct an instance of this class
getComponentNames	Get the names of the strong components
getGroupsInfo	Build the Node Groups table
getKernelInfo	Get the Kernel Table information
isProductive	Check if the graph is productive
isReachable	Check if node v is reachable from node u
isStrongConnected	Check if nodes u,v belong to the same component
plot	Plot the digraph

cExergyCost Methods

Name	Description
buildResultInfo	Get the cResultInfo object for thermoeconomic analysis
cExergyCost	Creates an instance of the class
getCostTableFP	Get the FP Cost Table considering only internal irreversibilities
getDirectCostTableFPR	Get FPR Cost Table with direct costs
getFlowsCost	Get the exergy cost of flows
getGeneralCostTableFPR	Get FPR Cost-Table with generalized costs
getIrreversibilityCostTables	Get Irreversibility Cost Tables for processes and flows
getOpR	Get the corresponding waste operator
getProcessCost	Get processes cost values
getProcessUnitCost	Get Process Unit Cost

```
getResourcesCostDistribution   Get the resource Cost distribution tables
getSpectralRatio               Get the spectral ratio of the productive matrix
getStreamsCost                 Get the exergy cost of streams
updateOperator                 Update an operator with the corresponding waste operator
updateWasteOperators           Calculate the waste allocation ratios and cost operators.
ExternalIrreversibility        Get the total external irreversibility (waste)
FlowProcessTable               Get the Flow-Process table
InternalIrreversibility        Get the total internal irreversibility
setDefaultGraph                Set Default Graph. Internal package use only
setResultId                    Set ResultId. Internal package use only
setSample                      Set Resource Sample Name. Internal package use only
```

cExergyData Methods

Name	Description
cExergyData	Build an instance of the class

cExergyModel Methods

Name	Description
ExternalIrreversibility	Get the total external irreversibility (waste)
FlowProcessTable	Get the Flow-Process table
InternalIrreversibility	Get the total internal irreversibility
buildResultInfo	Get the cResultInfo object
cExergyModel	Create an instance of the class
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only

cFormatData Methods

Name	Description
cFormatData	Create an instance of the class
getFormat	Get the format of a type of variable
getResultId	Get the ResultId of a table
getTableProperties	Get the properties of a cTable
getUnit	Get the format of a type of variable
getCellTables	Get the cell tables configuration
getDataModelProperties	Get the data model properties
getMatrixTables	Get the matrix tables configuration
getResultIdTables	Get the tables of an specific resultId
getSummaryTables	Get the summary tables configuration
getTableDefinition	Get the properties of a table
getTableId	Get tableId from dictionary. Internal use
getTableInfo	Get the properties of a table
getTablesDirectory	Get the tables directory

cGraphCost Methods

Name	Description
cGraphCost	Build an instance of the object
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cGraphCostRSC Methods

Name	Description
cGraphCostRSC	Build an instance of the object
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cGraphDiagnosis Methods

Name	Description
cGraphDiagnosis	Build an instance of the object
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cGraphDiagramFP Methods

Name	Description
cGraphDiagramFP	Build an instance of the object
edgesTable	Get a table with the edges of the digraph
nodesTable	Get a table with the properties of the nodes
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cGraphRecycling Methods

Name	Description
cGraphRecycling	Build an instance of the object
showGraph	Show the graph in a figure window
showGraphUI	Show the graph in a GUI app

cGraphResults Methods

Name	Description
cGraphResults	Abstract class used to show graphs in interactive mode and apps.

cGraphSummary Methods

Name	Description
cGraphSummary	Build an instance of the object
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cGraphWaste Methods

Name	Description
cGraphWaste	Build an instance of the object
showGraph	Show the graph in a window
showGraphUI	Show the graph in a GUI app

cMessageBuilder Methods

```
 Name                Description
_____

 cMessageBuilder    Construct an instance of this class
 disp               Overload disp function
 getMessage         Get the message as text
```

cMessageLogger Methods

```
 Name                Description
_____

 addLogger          Concatenate two message loggers
 cMessageLogger     Creates an instance of the class
 clearLogger        Clear the message logger
 messageLog         Add a message to the logger
 printLogger        Print the logger
 printLoggerType    Print the messages of the logger of the specified type
 tableLogger        Build a table logger to use in apps
 eq                 Overload eq operator. Check if two class object are equal.
 getObjectId        Get the object identifier
 ne                 Overload ne operator. Check if two class objects are different.
 printError         Print error message.
 printInfo          Print info message. Use fprintf syntax
 printWarning       Print warning message.
```

cMessages Methods

```
 Name        Description
_____

 ShowHelp    Get a string with the hyperlink to the help of the caller function
 Table       Get or show in console a table with all the messages or show in console
 cMessages   Static class which defines the TaesLab messages.
```

cModelData Methods

```
 Name             Description
_____

 cModelData       Construct an instance of this class
 getSampleNames   Get a cell array list with the names of the resource samples
 getStateNames    Get a cell array list with the names of the states
 isResource       Indicate is optional resource cost element exists
 isWaste          Indicate is optional waste element exists
 saveAsJSON       Save data model as JSON file
 saveAsXML        Save data model as XML file
```

cModelResults Methods

```
 Name             Description
_____

 cModelResults    Construct an instance of this class
 clearResults     Clear the result index in the container
 getModelResults  Get a cell array with the cResultInfo objects of the current state
 getResults       Get the cResultInfo from the container
 setResults       Store the cResultInfo in the results container using ResultId as index
```

cModelTable Methods

Name	Description
cModelTable	Construct an instance of this class
getStructData	Get a struct with the table values
getTableData	Get a cTable with the table model info.
printTable	Print data on console, using cTable interface.
size	Size of the table model. Overload size method

cParseStream Methods

Name	Description
cParseStream	Class with static methods to parse stream definition
checkDuplicates	Check if the list has duplicate values
checkListKeys	Check if a list of keys is valid
checkListNames	Check if a list of names is valid
checkName	Check if a name (state | sample) is valid
checkNumericFormat	Check if a numeric format is valid
checkStream	Check if a fuel/product definition string is correct
checkTextKey	Check if a text key is valid
getFlowsList	Get the list of flows in a FP definition string
getStreamFlows	Get the input and output flows of a stream
getStreams	Get the list of productive groups

cProductiveDiagram Methods

Name	Description
buildResultInfo	Get cResultInfo object
cProductiveDiagram	Construct an instance of this class
getEdgesTable	Get the edges info of a diagram
getNodesTable	Get the nodes of a diagram
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only

cProductiveStructure Methods

Name	Description
FinalProductFlows	Get the final product flows id
FlowEdges	Get a structure array with the stream node names of the flow edges
FuelStreams	Get the fuel streams id (including output and wastes)
IncidenceMatrix	Get incidence matrices of the plant
OutputProcesses	Get the id of processes with external outputs
ProductStreams	Get the product streams id (including resources)
ResourceFlows	Get the resource flows id
ResourceProcesses	Get the id of processes with external resources
SystemOutputFlows	Get the system output flows id
WasteData	Get default waste data info
buildResultInfo	Build the cResultInfo object for PRODUCTIVE_STRUCTURE
cProductiveStructure	Creates an instance of the class
flows2Streams	Compute the exergy or cost of streams from flow values
getFlowId	Get the Id of a flow given its key
getFlowMatrix	Get the Structural Theory Flows Adjacency Matrix
getFlowProcessMatrix	Get the Flow-Process Adjacency Matrix (Flows, Processes)
getFlowTypes	Get the flowId of type typeId
getProcessId	Get the Id of a process given its key
getProcessMatrix	Get the Process Adjacency Matrix (logical FP table)
getProcessTypes	Get the process-id of type typeId

getProductNames	Get the name of the final products flows
getProductiveMatrix	Get the Productive Adjacency Matrix (Streams, Flows, Processes)
getResourceNames	Get the name of the resource flows
getStreamMatrix	Get the Streams graph adjacency matrix
getStreamTypes	Get the stream-id of type typeId
getWasteNames	Get the name of the waste flows
isModelIO	Check if the model is pure Input-Output
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only

cQueue Methods

Name	Description
add	Add an element at the end of the queue
addQueue	Add another queue at the end of this queue
cQueue	Create a cQueue object. Initialize as a empty cell array
clear	Clear the queue
getContent	Get the content of the queue
length	Length of the queue. Overload length function
numel	Number of elements of the queue. Overload numel function
printContent	Print the content of the buffer
size	Size of the queue. Overload size function

cReadModel Methods

Name	Description
cReadModel	Abstract class to implemenent the model reader classes.
getDataModel	Get the data model object

cReadModelCSV Methods

Name	Description
getDataModel	Get the data model object
cReadModelCSV	Build an instance of the class
printModelTables	Show the model tables on console

cReadModelJSON Methods

Name	Description
getDataModel	Get the data model object
cReadModelJSON	Construct an instance of the class

cReadModelStruct Methods

Name	Description
getDataModel	Get the data model object
cReadModelStruct	Abstract class to read structured data model.

cReadModelTable Methods

Name	Description

getDataModel	Get the data model object
cReadModelTable	Abstract class to read table data model.
printModelTables	Show the model tables on console

cReadModelXLS Methods

Name	Description
getDataModel	Get the data model object
printModelTables	Show the model tables on console
cReadModelXLS	Build an instance of the class

cReadModelXML Methods

Name	Description
getDataModel	Get the data model object
cReadModelXML	Build an instance of the object

cResourceData Methods

Name	Description
cResourceData	Creates an instance of the class
setFlowResource	Set the flow-resource values of the current sample
setProcessResource	Set the process-resource value of the current sample
setResourceCost	Calculate the resource cost properties for the current sample

cResultId Methods

Name	Description
cResultId	Abstract class to manage the result identification.
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only

cResultInfo Methods

Name	Description
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only
cResultInfo	Construct an instance of this class
getResultInfo	Get cResultInfo object for cResultSet
getTable	Get the table called name
getTableIndex	Get the Table Index
isSampleSummary	Check if the Samples Summary results are available
isStateSummary	Check if the States Summary results are available
showGraph	Show graph with default options
summaryDiagnosis	Get the Fuel Impact/Malfunction Cost as a string including format and unit
summaryTables	Get/Display available summary tables
ListOfGraphs	Get the list of graph tables as cell array
ListOfTables	Get the list of tables as cell array
StudyCase	Get/display the study case names

```
exportResults      Export result tables into a structure using diferent formats.
exportTable        Export table into the selected varmode/format
printResults       Print the result tables on console
saveResults        Save result tables in different file formats depending on file extension
saveTable          Save a result table into a file depending on extension
showResults        View an individual table
showTableIndex     View the index table of the results set
```

cResultSet Methods

```
 Name                Description
─────────────────────────────────────────────────────────────────────────────────────  ↙
─
 setDefaultGraph    Set Default Graph. Internal package use only
 setResultId        Set ResultId. Internal package use only
 setSample          Set Resource Sample Name. Internal package use only
 ListOfGraphs       Get the list of graph tables as cell array
 ListOfTables       Get the list of tables as cell array
 StudyCase          Get/display the study case names
 cResultSet         Abstract class to manage the result sets.
 exportResults      Export result tables into a structure using diferent formats.
 exportTable        Export table into the selected varmode/format
 getTable           Get the table called name
 getTableIndex      Get the table index of the results set
 printResults       Print the result tables on console
 saveResults        Save result tables in different file formats depending on file extension
 saveTable          Save a result table into a file depending on extension
 showResults        View an individual table
 showTableIndex     View the index table of the results set
```

cResultTableBuilder Methods

```
 Name                     Description
───────────────────────────────────────────────────────────────────────────
 getFormat               Get the format of a type of variable
 getResultId             Get the ResultId of a table
 getTableProperties      Get the properties of a cTable
 getUnit                 Get the format of a type of variable
 cResultTableBuilder     Create and instance of the class
 getCostResults          Get the thermoeconomic analysis result
 getDiagnosisResults     Get the thermoeconomic diagnosis results
 getDiagramFP            Get the diagram FP adjacency results
 getExergyResults        Generate the exergy results
 getProductiveDiagram    Get the productive diagram tables
 getProductiveStructure  Generate the productive structure results
 getSummaryResults       Get the cResultInfo for Summary Results
 getWasteAnalysisResults Get the waste analysis results
 getCellTables           Get the cell tables configuration
 getDataModelProperties  Get the data model properties
 getMatrixTables         Get the matrix tables configuration
 getResultIdTables       Get the tables of an specific resultId
 getSummaryTables        Get the summary tables configuration
 getTableDefinition      Get the properties of a table
 getTableId              Get tableId from dictionary. Internal use
 getTableInfo            Get the properties of a table
 getTablesDirectory      Get the tables directory
```

cSparseRow Methods

```
 Name           Description
```

_____

```
cSparseRow    create an instance of the class
ctranspose    Overload ctranspose operator for cSparseRow objects
disp          Overload display object for cSparseRow objects
divideCol     Divide the columns of the matrix by a vector
divideRow     Divide the rows of the matrix by a vector
full          Overload full function for cSparseRow objects
minus         Overload the minus operator for cSparseRow objects
mtimes        Overload the mtimes operator for cSparseRow objects
plus          Overload the plus operator for cSparseRow objects
scaleCol      Scale the columns of the matrix by a vector
scaleRow      Scale the rows of the matrix by a vector
size          Overload size function for cSparseRow objects
sparse        Overload sparse function for cSparseRow objects
sum           Overload sum function for cSparseRow objects
sumCols       Sum the columns of the matrices
sumRows       Sum the rows of the matrices
transpose     Overload transpose operator for cSparseRow objects
uminus        Overload the uminus operator for cSparseRow objects
```

cSummaryOptions Methods

```
 Name                Description
_____

 cSummaryOptions     Build an instance of the class
 checkId             Check the summary id option
 checkName           Check the summary name option
 defaultOption       Get the default summary option name for the data model
 isEnable            Check if model has summary enabled
 isResources         Check if the model has resources summary available
 isStates            Check if the model has states summary available
```

cSummaryResults Methods

```
 Name                      Description
_____↙
_____

 setDefaultGraph           Set Default Graph. Internal package use only
 setResultId               Set ResultId. Internal package use only
 setSample                 Set Resource Sample Name. Internal package use only
 buildResultInfo           Get cResultInfo object
 cSummaryResults           Build an instance of this class
 defaultSummaryTables      Get the default summary tables option name
 getDefaultFlowVariables   Get the output flows keys
 getDefaultProcessVariables Get the output processes keys
 getSummaryColumns         Get the column names of the summary tables
 getValues                 Get dataset tables
 isSampleSummary           Check if Samples Summary results are available
 isStateSummary            Check if States Summary results are available
 setSummaryTables          Fill the values of the summary tables with the values of the↙
model
```

cSummaryTable Methods

```
 Name            Description
_____

 cSummaryTable   Create an instance of the class
 setValues       Set the values of the table for each STATE/RESOURCE
```

cTable Methods

```
 Name                Description
_____

 cTable              Abstract class for tabular data.
 exportTable         Get table values in diferent formats
 getColumnData       Get a key/value array struct of a column table
 getColumnFormat     Get the format of each column table
 getColumnValues     Get the values of a column table
 getColumnWidth      Get the maximun width of each column
 getMatlabTable      Get cTable as Matlab table
 getProperties       Get table properties
 getStructData       Get table data as struct array
 getStructTable      Get a structure with the table info
 isGraph             Check if the table has a graph associated
 isNumericColumn     Check if a column is numeric (base method)
 isNumericTable      Check if the data of the table is numeric
 saveTable           Generate a file with the table values
 setColumnValues     Set the values of a column table
 setDescription      Set Table Header or Description.
 setRowValues        Set the values of a table row
 setStudyCase        Set state and sample values. Internal function
 showTable           View Table in console GUI or HTML
 size                Size of the table. Overload of size function.
```

cTableCell Methods

```
 Name                  Description
_____

 getColumnData         Get a key/value array struct of a column table
 getColumnFormat       Get the format of each column table
 getColumnWidth        Get the maximun width of each column
 isGraph               Check if the table has a graph associated
 isNumericColumn       Check if a column is numeric (base method)
 isNumericTable        Check if the data of the table is numeric
 saveTable             Generate a file with the table values
 setColumnValues       Set the values of a column table
 setDescription        Set Table Header or Description.
 setRowValues          Set the values of a table row
 setStudyCase          Set state and sample values. Internal function
 showTable             View Table in console GUI or HTML
 size                  Size of the table. Overload of size function.
 cTableCell            Create Cell Table object
 formatData            Apply format to data
 getColumnValues       Get the values of a specfic column
 getDescriptionLabel   Get the description of the table
 getMatlabTable        Get table as Matlab table object
 getStructData         Get the table data as struct
 getStructTable        Get the table as a struct. Include properties
 printTable            Display table on console or in a file in a pretty formatted way
 exportTable           Get cTable info in diferent types of variables
 getCellData           Get table as cell array
 getProperties         get the additional properties of a cTableResults
```

cTableData Methods

```
 Name                Description
_____

 exportTable         Get table values in diferent formats
 getColumnData       Get a key/value array struct of a column table
 getColumnFormat     Get the format of each column table
```

```
getColumnValues        Get the values of a column table
getColumnWidth         Get the maximun width of each column
getMatlabTable         Get cTable as Matlab table
getProperties          Get table properties
getStructData          Get table data as struct array
isGraph                Check if the table has a graph associated
isNumericColumn        Check if a column is numeric (base method)
isNumericTable         Check if the data of the table is numeric
saveTable              Generate a file with the table values
setColumnValues        Set the values of a column table
setDescription         Set Table Header or Description.
setRowValues           Set the values of a table row
setStudyCase           Set state and sample values. Internal function
showTable              View Table in console GUI or HTML
size                   Size of the table. Overload of size function.
cTableData             Construct an instance of this class
create                 Create a cTableData from values
formatData             Format the values of the table
getDescriptionLabel    Get the description of each table for graph or printing
getStructTable         Get table as a struct
import                 Create cTableData from file
importMatlabTable      Import data from a MATLAB table into cTable object
printTable             Display table on console or in a file in a pretty formatted way
```

cTableIndex Methods

```
 Name                   Description
───────────────────────────────────────────────────────────────────────────────

 exportTable            Get table values in diferent formats
 getColumnData          Get a key/value array struct of a column table
 getColumnFormat        Get the format of each column table
 getColumnValues        Get the values of a column table
 getColumnWidth         Get the maximun width of each column
 getMatlabTable         Get cTable as Matlab table
 getProperties          Get table properties
 getStructData          Get table data as struct array
 getStructTable         Get a structure with the table info
 isGraph                Check if the table has a graph associated
 isNumericColumn        Check if a column is numeric (base method)
 isNumericTable         Check if the data of the table is numeric
 saveTable              Generate a file with the table values
 setColumnValues        Set the values of a column table
 setDescription         Set Table Header or Description.
 setRowValues           Set the values of a table row
 setStudyCase           Set state and sample values. Internal function
 showTable              View Table in console GUI or HTML
 size                   Size of the table. Overload of size function.
 cTableIndex            create a instance of the class
 getDescriptionLabel    Get table description
 printTable             Print table on console or in a file in a pretty formatted way
```

cTableMatrix Methods

```
 Name                   Description
────────────────────────────────────────────────────────────────────────────────↙
─

 getColumnData          Get a key/value array struct of a column table
 getColumnFormat        Get the format of each column table
 getColumnValues        Get the values of a column table
 getColumnWidth         Get the maximun width of each column
 isGraph                Check if the table has a graph associated
```

```
isNumericColumn        Check if a column is numeric (base method)
isNumericTable         Check if the data of the table is numeric
saveTable              Generate a file with the table values
setColumnValues        Set the values of a column table
setDescription         Set Table Header or Description.
setRowValues           Set the values of a table row
setStudyCase           Set state and sample values. Internal function
showTable              View Table in console GUI or HTML
size                   Size of the table. Overload of size function.
cTableMatrix           Create an instance of the class
formatData             Apply Format to the data values
getDescriptionLabel    Get the description of the table plus Unit and State
getMatlabTable         Get the table as Matlab table
getMatrixValues        Get the table data as Array
getStructData          Get table as formatted structure
getStructTable         Get table info as structure
isFlowsTable           Check if table contains flows or processes
isGeneralCostTable     Check if table is general cost
isResourceCostTable    Check if table is resource cost table
isSummaryTable         Check if table is a summary table
isTotalMalfunctionCost Check if table is total malfuction cost
isUnitCostTable        Check if table has unit costs
printTable             Display a table on console or in a file in a pretty formatted way
exportTable            Get cTable info in diferent types of variables
getCellData            Get table as cell array
getProperties          get the additional properties of a cTableResults
```

cTableResult Methods

```
Name               Description
─────────────────────────────────────────────────────────────────────
getColumnData      Get a key/value array struct of a column table
getColumnFormat    Get the format of each column table
getColumnValues    Get the values of a column table
getColumnWidth     Get the maximun width of each column
getMatlabTable     Get cTable as Matlab table
getStructData      Get table data as struct array
getStructTable     Get a structure with the table info
isGraph            Check if the table has a graph associated
isNumericColumn    Check if a column is numeric (base method)
isNumericTable     Check if the data of the table is numeric
saveTable          Generate a file with the table values
setColumnValues    Set the values of a column table
setDescription     Set Table Header or Description.
setRowValues       Set the values of a table row
setStudyCase       Set state and sample values. Internal function
showTable          View Table in console GUI or HTML
size               Size of the table. Overload of size function.
cTableResult       Abstrat class to store results into a cTable.
exportTable        Get cTable info in diferent types of variables
getCellData        Get table as cell array
getProperties      get the additional properties of a cTableResults
```

cTablesDefinition Methods

```
Name                   Description
─────────────────────────────────────────────────────────────────────
cTablesDefinition      Create an instance of the class
getCellTables          Get the cell tables configuration
getDataModelProperties Get the data model properties
getMatrixTables        Get the matrix tables configuration
```

```
getResultIdTables        Get the tables of an specific resultId
getSummaryTables         Get the summary tables configuration
getTableDefinition       Get the properties of a table
getTableId               Get tableId from dictionary. Internal use
getTableInfo             Get the properties of a table
getTablesDirectory       Get the tables directory
```

cTaesLab Methods

Name	Description
cTaesLab	Initialize a cTaesLab object
eq	Overload eq operator. Check if two class object are equal.
getObjectId	Get the object identifier
ne	Overload ne operator. Check if two class objects are different.
printError	Print error message.
printInfo	Print info message. Use fprintf syntax
printWarning	Print warning message.

cThermoeconomicModel Methods

Name	Description
setDefaultGraph	Set Default Graph. Internal package use only
setResultId	Set ResultId. Internal package use only
setSample	Set Resource Sample Name. Internal package use only
ListOfGraphs	Get the list of graph tables as cell array
ListOfTables	Get the list of tables as cell array
StudyCase	Get/display the study case names
exportResults	Export result tables into a structure using diferent formats.
exportTable	Export table into the selected varmode/format
getTableIndex	Get the table index of the results set
printResults	Print the result tables on console
saveResults	Save result tables in different file formats depending on file extension
saveTable	Save a result table into a file depending on extension
showTableIndex	View the index table of the results set
addExergyData	Set exergy data values to actual state
addResourceData	Set exergy data values to actual state
cThermoeconomicModel	Create an instance of the class
dataInfo	Get the data model cResultInfo object
diagramFP	Get the diagram FP cResultInfo object of rhe current state
exergyAnalysis	Get the ExergyAnalysis cResultInfo object for the current state
getExergyData	Get cExergyData object of a state
getModelResults	Get a cell array of cResultInfo objects of the current state
getResourceData	Get the resource data cost values of sample
getResultInfo	Get the cResultInfo with optional parameters
getResultState	Get the cExergyCost object of each state
getSampleId	Get the Sample Id given the resource sample name
getStateId	Get the State Id given the name.
getTable	Get a table called name, if its available
getTableInfo	Get the properties of a table
getTablesDirectory	Create the tables directory of the active model
getWasteId	Get the Waste flow Id
isDiagnosis	Check if diagnosis computation is available.
isDirectCost	Check if Direct cost tables are selected
isGeneralCost	Check if Generalized cost calculation is activated
isResourceCost	Check if the model has resources cost defined
isSampleSummary	Check if Samples Summary results has been activated
isStateSummary	Check if States Summary results has been activated

```
isSummaryActive        Check if Summary has been activated
isSummaryEnable        Check if Summary is enable
isWaste                Check if model has waste defined
productiveDiagram      Get the productive diagram cResultInfo object
productiveStructure    Get the Productive Structure cResultInfo object
saveDataModel          Save the data model in a file
saveDiagramFP          Save the Adjacency matrix of the Diagram FP in a file
saveProductiveDiagram  Save the productive diagram adjacency tables into a file
saveSummary            Save the summary tables into a filename
setActiveWaste         Set a new waste flow for recycling analysis
setCostTables          Set a new value of CostTables parameter
setDebug               Set debug control variable
setDiagnosisMethod     Set a new value of DiagnosisMethod parameter
setExergyData          Set exergy data values to actual state
setFlowResource        Set the resource cost of the flows
setProcessResource     Set the resource cost of the processes
setRecycling           Set Recycling parameter
setReferenceState      Set a new valid reference state from StateNames
setResourceSample      Set a new valid ResourceSample from SampleNames
setState               Set a new valid state from StateNames
setSummary             Set a new Summary available option
setWasteRecycled       Set the waste recycling ratios
setWasteType           Set the waste type allocation method for Active Waste
setWasteValues         Set the waste table values
showDataModel          Show Data Model tables
showGraph              Show a graph table.
showProperties         Show the values of the current parameters of the model
showResultInfo         Show or get a structure containig the results of the model
showResults            View an individual table
showSummary            Show Summary tables
showTablesDirectory    Show the list of available tables
summaryDiagnosis       Get the diagnosis results summary
summaryOptions         Get the available summary option names
summaryResults         Get the Summary Results cResultInfo object
thermoeconomicAnalysis Get the Thermoeconomic Analysis cResultInfo object for the current ↙
state
thermoeconomicDiagnosis Get the Thermoeconomic Diagnosis cResultInfo object
toggleDebug            Toggle debug property
updateDataModel        Update the data model if have been changes
wasteAllocation        Show waste information in console
wasteAnalysis          Get the Waste Analysis cResultInfo object for the current state and ↙
waste flow
```

cType Methods

```
 Name                  Description
_____

 CostTablesOptions     Get a cell array with the Cost Tables Type options
 DiagnosisOptions      Get a cell array with the Diagnosis Type options
 SummaryOptions        Get a cell array with the Summary Options
 TableViewOptions      Get a cell array with the Table view options
 TaesLabPath           Get the full path of the TaesLab installation
 VarModeOptions        Get a cell array with the VarMode Type options
 WasteTypeOptions      Get a cell array with the Waste Allocation Type options
 cType                 Static class to manage the constants of TaesLab
 checkClassInfo        Check ClassInfo value
 checkCostTables       Check CostTable type text
 checkDiagnosisMethod  Check Diagnosis method type text
 checkDirColumns       Check Table Directory Columns names
 checkFileExt          Check if filename has a valid extension
 checkFlowTypes        Check if the Flows Type list is correct
 checkGraphStyle       Check Graph Style value
```

```
checkProcessTypes     Check if the Process Type list is correct
checkResourceTypes    Check if the Flows Type list is correct
checkSummaryOption    Check Summary type text
checkTableView        Check TableView value
checkVarMode          Check Variable display option
checkWasteTypes       checkFlowTypes - Check if the Flows Type list is correct
getClassInfo          Get the id of ClassInfo option
getCostTables         Get id for CostTables option
getDiagnosisMethod    Get id for Diagnosis Method option
getFileType           Get file type acording its extension (ext)
getFlowId             Get the internal code of a flow type text
getFormatId           Get internal code of format type text
getGraphStyle         Get the id of Graph Style option
getIcon               Get app icons
getLine               Get a dash line of the given length
getNewline            Get the newline character depending on operating system
getPathDelimiter      get the path delimiter
getProcessId          Get the internal code of a process type text
getPropertiesList     Get the list of additional properties of cResultTables
getResourcesId        Get internal code of a resources cost type text
getSummaryId          Get id for Summary option
getTableView          Get id for TableView option
getTaesImage          Get the full path of the Taes Welcome image
getTextErrorCode      Get the text of the corresponding error code
getVarMode            Get id for VarMode option
getWasteId            Get internal code of a waste allocation type text
log2text              Get the text representation of a logical value. Used in GUI Apps
tableCode             Display the key code of a table
```

cViewTable Methods

```
Name          Description
─────────────────────────────────────────────────────────
cViewTable    Create an instance of the class
showTable     Shows the table values in a uitable object
```

cWasteAnalysis Methods

```
Name            Description
────────────────────────────────────────────────────────────────
setDefaultGraph    Set Default Graph. Internal package use only
setResultId        Set ResultId. Internal package use only
setSample          Set Resource Sample Name. Internal package use only
buildResultInfo    Build/Get the cResultInfo object
cWasteAnalysis     Create an instance of the class
```

cWasteData Methods

```
Name            Description
────────────────────────────────────────────────────────────────
cWasteData         Create an instance of the class
existsWaste        Determine if waste key is defined
getRecycleRatio    Get the recycle ratio value of a waste
getType            Get the waste allocation type
getValues          Get the allocation ratios of a waste
getWasteFlows      Get the waste name of the corresponding index
getWasteIndex      Get the id of the corresponding waste key
setRecycleRatio    Set the recycle ratio of a waste
setType            Set the waste allocation type
setValues          Set the cost allocation values of a waste
```

updateValues   Set the waste table values (internal use)