

# Package ‘compare’

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**Title** Comparing Objects for Differences

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**Description** Functions to compare a model object to a comparison object.  
If the objects are not identical, the functions can be instructed to explore various modifications of the objects (e.g., sorting rows, dropping names) to see if the modified versions are identical.

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commentQuestions      *Apply a Commenting Scheme*

---

### Description

This function applies a commenting scheme to a set of comparisons to produce a set of comments.

### Usage

```
commentQuestions(result, ...)
```

### Arguments

|        |   |
|--------|---|
| result | A set of comparison results, as generated by the <code>compareFiles()</code> function.        |
| ...    | One or more commenting schemes, as generated by the <code>questionComments()</code> function. |

### Value

A matrix of comments.

### Author(s)

Paul Murrell

### See Also

[questionComments](#) and [compareFiles](#)

### Examples

```
modelNames <- c("id", "age",
               "edu", "class",
               "IndianMothers")
files <- list.files(system.file("example", package="compare"),
                  pattern="^student[0-9]+[.]R$",
                  full.names=TRUE)

results <- compareFiles(files,
                      modelNames,
                      system.file("example", "model.R", package="compare"),
                      allowAll=TRUE,
                      resultNames=gsub("[/][.]R", "", files))
q1comments <- questionComments(c("id", "age", "edu", "class"),
                              comments("class",
                                       transformComment("coerced",
                                                         "'class' is a factor!")))

commentQuestions(results, q1comments)
```

---

|         |                            |
|---------|----------------------------|
| compare | <i>Compare Two Objects</i> |
|---------|----------------------------|

---

### Description

Compare two objects and, if they are not the same, attempt to transform them to see if they are the same after being transformed.

### Usage

```
compare(model, comparison,
        equal = TRUE,
        coerce = allowAll,
        shorten = allowAll,
        ignoreOrder = allowAll,
        ignoreNameCase = allowAll,
        ignoreNames = allowAll,
        ignoreAttrs = allowAll,
        round = FALSE,
        ignoreCase = allowAll,
        trim = allowAll,
        dropLevels = allowAll,
        ignoreLevelOrder = allowAll,
        ignoreDimOrder = allowAll,
        ignoreColOrder = allowAll,
        ignoreComponentOrder = allowAll,
        colsOnly = !allowAll,
        allowAll = FALSE)

compareName(model, compName,
            ...,
            ignore.case = TRUE,
            compEnv = .GlobalEnv)
```

### Arguments

|                |  |
|----------------|--|
| model          | The “correct” object.  |
| comparison     | The object to be compared with the model.                                      |
| equal          | Test for equality if test for identity fails.                                  |
| coerce         | If objects are not the same, allow coercion of comparison to model class.      |
| shorten        | If the length of one object is less than the other, shorten the longer object. |
| ignoreOrder    | Ignore the order of values when comparing.                                     |
| ignoreNameCase | Ignore the case of names when comparing.                                       |
| ignoreNames    | Ignore names attributes altogether.  |
| ignoreAttrs    | Ignore attributes altogether.  |

|                      |  |
|----------------------|--|
| round                | If objects are not the same, allow numbers to be rounded.                  |
| ignoreCase           | Ignore the case of string values.  |
| trim                 | Ignore leading and trailing spaces in string values.                       |
| dropLevels           | If factors are not the same, allow unused levels to be dropped.            |
| ignoreLevelOrder     | Ignore the order of factor levels.   |
| ignoreDimOrder       | Ignore the order of dimensions when comparing matrices, arrays, or tables. |
| ignoreColOrder       | Ignore the order of columns when comparing data frames.                    |
| ignoreComponentOrder | Ignore the order of components when comparing lists.                       |
| colsOnly             | Only transform columns (not rows) when comparing data frames.              |
| allowAll             | Allow any sort of transformation (almost; see Details).                    |
| compName             | A string giving the <i>name</i> of the comparison object.                  |
| ...                  | Arguments to be passed to <code>compare()</code> .                         |
| ignore.case          | Ignore the case of the name when searching for the comparison object.      |
| compEnv              | An environment within which to search for the comparison object.           |

### Details

The `compare()` function compares two objects for equality. The arguments allow for various transformations of the objects (e.g., type coercion) in order to try and achieve equality.

Specific transformations can be turned on via the appropriate argument, or the `allowAll` argument can be used to enable all transformations, with the exception of rounding of numeric values.

The `compareName()` function is a wrapper for `compare()` that requires the *name* of the comparison object rather than the objects itself, plus it allows an environment to be supplied that contains the actual comparison object. This is useful for the situation where a particular object with a particular name should have been generated and allows the generated object to differ from the desired object in terms of the case of its name.

### Value

An object of class "comparison".

This is a list. The most important components are `result`, which gives the overall success/failure of the comparison, and `transform`, which describes the transformations attempted during the comparison (whether they were successful or not).

### Author(s)

Paul Murrell

### See Also

[comparison-class](#) and [compareEqual](#)

**Examples**

```
obj1 <- c("a", "a", "b", "c")
obj2 <- factor(obj1)
compare(obj1, obj2, allowAll=TRUE)
```

---

compareCoerce

*Compare Two Objects of Different Class*


---

**Description**

Compare two objects for equality, coercing the comparison object to the same class as the model object if necessary beforehand.

**Usage**

```
compareCoerce(model, comparison, transform = character(),
              equal = TRUE, ...)
```

```
## S3 method for class 'data.frame'
compareCoerce(model, comparison,
              transform=character(),
              equal=TRUE,
              ignoreColOrder=FALSE,
              ignoreNameCase=FALSE,
              ...)
```

**Arguments**

|                |   |
|----------------|---|
| model          | The “correct” object.   |
| comparison     | The object to be compared with the model.   |
| transform      | A character vector containing any transformations that have been performed on the objects prior to this comparison. |
| equal          | Whether to test for equality if the test for identity fails.  |
| ignoreColOrder | For data frames, whether to reorder columns by name first.  |
| ignoreNameCase | For data frames and lists, whether to ignore the case of names when reordering components by name.                  |
| ...            | Arguments passed to compareEqual().   |

**Details**

This function is generic, with methods for logical, integer, numeric, and character vectors, factors, arrays, matrices, tables, data frames, and lists.

The integer and numeric methods use the appropriate special-case coercion for factors.

**Value**

An object of class "comparison". Use `isTRUE()` to determine whether the comparison has succeeded.

**Author(s)**

Paul Murrell

**See Also**

[compare](#) and [compareEqual](#)

**Examples**

```
compareCoerce(letters, factor(letters))
```

---

compareEqual

*Compare Two Objects for Equality*

---

**Description**

Compare two objects and allow for various minor differences between them.

**Usage**

```
compareEqual(model, comparison, transform = character(), ...)

## S3 method for class 'logical'
compareEqual(model, comparison, transform = character(), ...)

## S3 method for class 'numeric'
compareEqual(model, comparison, transform = character(),
             round=FALSE,
             ...)

## S3 method for class 'character'
compareEqual(model, comparison, transform=character(),
             ignoreCase=FALSE,
             trim=FALSE,
             ...)

## S3 method for class 'factor'
compareEqual(model, comparison, transform=character(),
             dropLevels=FALSE,
             ignoreLevelOrder=FALSE,
             ...)
```

```

## S3 method for class 'matrix'
compareEqual(model, comparison, transform=character(),
             ignoreDimOrder=FALSE,
             ...)

## S3 method for class 'array'
compareEqual(model, comparison, transform=character(),
             ignoreDimOrder=FALSE,
             ...)

## S3 method for class 'table'
compareEqual(model, comparison, transform=character(),
             ignoreDimOrder=FALSE,
             ...)

## S3 method for class 'data.frame'
compareEqual(model, comparison, transform=character(),
             ignoreColOrder=FALSE,
             ignoreNameCase=FALSE,
             ...,
             recurseFun=compareEqual)

## S3 method for class 'list'
compareEqual(model, comparison, transform=character(),
             ignoreComponentOrder=FALSE,
             ignoreNameCase=FALSE,
             ...,
             recurseFun=compareEqual)

```

### Arguments

|                  |   |
|------------------|---|
| model            | The “correct” object.   |
| comparison       | The object to be compared with the model.   |
| transform        | A character vector containing any transformations that have been performed on the objects prior to this comparison.   |
| round            | For numeric vectors, whether the objects should be rounded before comparison. If FALSE there is no rounding, if TRUE both objects are rounded to zero decimal places, if an integer value, then both objects are rounded to the specified number of decimal places. May also be a function (of one argument). |
| ignoreCase       | For character vectors, whether to ignore the case of the strings.   |
| trim             | For character vectors, whether to ignore leading and trailing white space.  |
| dropLevels       | For factors, whether to drop unused levels before the comparison.   |
| ignoreLevelOrder | For factors, whether to ignore the order of levels.   |
| ignoreDimOrder   | For matrices, arrays, and tables, whether to reorder of the dimensions by name before the comparison.   |

|                      |  |
|----------------------|--|
| ignoreColOrder       | For data frames, whether to reorder the columns by name before the comparison.   |
| ignoreComponentOrder | For lists, whether to reorder the components by name before the comparison.  |
| ignoreNameCase       | For data frames and lists, whether to ignore the case of names when reordering components by name.   |
| ...                  | Other arguments controlling the comparison.  |
| recurseFun           | For data frames, the function to use to compare the columns of the data frames.<br>For lists, the function used to compare the components of the list. |

### Details

This function compares two objects for identity (using `identical()`), then if that fails and `equal=TRUE`, compares the objects for equality. The arguments allow for various relaxations on what “equal” means.

For numeric vectors, the comparison uses `all.equal()` to allow for differences in floating-point representation. The `round` argument also allows for much more lenient comparisons. The `round` argument can also be a function, e.g., `floor()` (see other examples below).

### Value

An object of class “comparison”. Use `isTRUE()` to determine whether the comparison has succeeded.

### Author(s)

Paul Murrell

### See Also

[compare](#)

### Examples

```
compareEqual(letters, paste(" ", letters, " "), trim=TRUE)
compareEqual(c(.1, 1, 10), c(.13, 1.3, 13),
             round=function(x) { signif(x, 1) })
```

---

compareFile

*Compare Several Objects*

---

### Description

Generate objects by running code from one or more files then compare the resulting objects to a set of model objects, allowing for and reporting on minor differences.



**Usage**

```
compareFile(filename, modelNames,
            modelCode = NULL, modelSave = NULL, modelAnswers = NULL,
            round = FALSE, ...)
```

```
compareFiles(fileNames, modelNames,
            modelCode=NULL, modelSave=NULL,
            resultNames=fileNames, ...)
```

**Arguments**

|              |  |
|--------------|--|
| filename     | The name of a file containing R code.  |
| fileNames    | A vector of names of files containing R code.  |
| modelNames   | A vector of names of objects of interest that should be generated by the code in the file(s).  |
| modelCode    | The name of a file that contains R code to generate model objects.   |
| modelSave    | The name of a binary file that can be used to load model objects.  |
| modelAnswers | A list containing model objects.   |
| round        | A logical indicating whether to round, or an integer indicating how many digits to round to, or a function of one argument (that performs something like rounding), or a named list of any of those. |
| resultNames  | A vector of names to be used to identify the results from different files.   |
| ...          | For compareFile(), arguments to the compare() function; for compareFiles(), arguments to the compareFile() function.   |

**Details**

The compareFile() function is useful for comparing several pairs of objects at once, where the comparison objects are generated by running R code from a file and the model objects can be generated in a number of ways.

The compareFiles() function extends this to comparing the same set of model objects to several different sets of comparison objects (where each set of comparison objects is generated from a separate file of R code).

For generating model objects, if a binary file is specified, that is used in preference to source code; if a list of objects is provided, that is used; and if no model objects are specified, they are taken from the global workspace (using modelNames).

The round argument may be a named list so that different rounding is applied to different comparisons.

**Value**

compareFile() returns an object of class "comparisonList", which is just a list of "comparison" objects.

compareFiles() returns an object of class "comparisonListList". This is just a list of "comparisonList" objects, but a print method is defined to make the display of this object a little more sane.

**Author(s)**

Paul Murrell

**See Also**[compare](#)**Examples**

```
modelNames <- c("id", "age",
               "edu", "class",
               "IndianMothers")
compareFile(system.file("example", "student1.R", package="compare"),
            modelNames,
            system.file("example", "model.R", package="compare"))
```

---

`compareIdentical`*Compare Two Objects for Identity*

---

**Description**

This function is just a wrapper for the `identical()` function to determine whether two objects are identical. Its usefulness is in being able to be combined with other functions in the **compare** package that perform much more relaxed comparisons.

**Usage**

```
compareIdentical(model, comparison, transform = character(), ...)
```

**Arguments**

|                         |   |
|-------------------------|---|
| <code>model</code>      | The “correct” object.   |
| <code>comparison</code> | The object to be compared with the <code>model</code> .   |
| <code>transform</code>  | A character vector containing any transformations that have been performed on the objects prior to this comparison. |
| <code>...</code>        | Allows arguments that are only relevant to other comparison functions.  |

**Value**

An object of class “`comparison`”. Use `isTRUE()` to determine whether the comparison has succeeded.

**Author(s)**

Paul Murrell

**See Also**

[compare](#) and [compareEqual](#)

**Examples**

```
compareIdentical(1:10/10, 1:10/10)
compareIdentical(1:10/10, 3:12/10 - 2/10)
```

---

compareIgnoreAttrs      *Compare Two Objects with Different Attributes*

---

**Description**

Compare two objects for equality, ignoring any attributes if necessary beforehand.

**Usage**

```
compareIgnoreAttrs(model, comparison, transform = character(),
                   equal = TRUE, ...)
```

**Arguments**

|            |   |
|------------|---|
| model      | The “correct” object.   |
| comparison | The object to be compared with the model.   |
| transform  | A character vector containing any transformations that have been performed on the objects prior to this comparison. |
| equal      | Whether to test for equality if the test for identity fails.  |
| ...        | Arguments passed to <code>compareEqual()</code> .   |

**Value**

An object of class “comparison”. Use `isTRUE()` to determine whether the comparison has succeeded.

**Author(s)**

Paul Murrell

**See Also**

[compare](#) and [compareEqual](#)

**Examples**

```
model <- list(a=1:26, b=letters)
comparison <- model
attr(comparison, "test") <- "test"
compareIgnoreAttrs(model, comparison)
```

---

compareIgnoreNameCase *Compare Two Objects with Different Names*

---

### Description

Compare two objects for equality, ignoring the case of name attributes, or ignoring name attributes altogether, if necessary beforehand.

### Usage

```
compareIgnoreNameCase(model, comparison, transform = character(),
                      equal = TRUE, ...)
```

```
## S3 method for class 'data.frame'
compareIgnoreNameCase(model, comparison, transform=character(),
                      equal=TRUE,
                      colsOnly=TRUE,
                      ignoreColOrder=FALSE,
                      ignoreNameCase=FALSE,
                      ...)
```

```
compareIgnoreNames(model, comparison, transform=character(),
                  equal=TRUE, ...)
```

```
## S3 method for class 'data.frame'
compareIgnoreNames(model, comparison, transform=character(),
                  equal=TRUE,
                  colsOnly=TRUE,
                  ignoreColOrder=FALSE,
                  ignoreNameCase=FALSE,
                  ...)
```

### Arguments

|                |  |
|----------------|--|
| model          | The “correct” object.  |
| comparison     | The object to be compared with the model.  |
| transform      | A character vector containing any transformations that have been performed on the objects prior to this comparison.          |
| equal          | Whether to test for equality if the test for identity fails.   |
| colsOnly       | Only ignore (case of) column names (NOT row names).  |
| ignoreColOrder | For data frames and lists, sort the columns or components by name before ignoring the case of names.                         |
| ignoreNameCase | When reordering the columns or components by name (i.e., when ignoreColOrder=TRUE), whether to ignore the case of the names. |
| ...            | Arguments passed to compareEqual().  |

**Details**

These functions are generic, with specific methods for data frames and lists.

**Value**

An object of class "comparison". Use `isTRUE()` to determine whether the comparison has succeeded.

**Author(s)**

Paul Murrell

**See Also**

[compare](#) and [compareEqual](#)

**Examples**

```
model <- data.frame(x=1:26, y=letters, z=factor(letters),
                   stringsAsFactors=FALSE)
comparison <- data.frame(a=1:26, b=letters, c=factor(letters),
                       stringsAsFactors=FALSE)
compareIgnoreNames(model, comparison)
```

---

|                                 |   |
|---------------------------------|---|
| <code>compareIgnoreOrder</code> | <i>Compare Two Objects with Different Order</i> |
|---------------------------------|---|

---

**Description**

Compare two objects for equality, sorting them if necessary beforehand.

**Usage**

```
compareIgnoreOrder(model, comparison, transform = character(),
                  equal = TRUE, ...)

## S3 method for class 'data.frame'
compareIgnoreOrder(model, comparison,
                  transform=character(),
                  equal=TRUE,
                  ignoreColOrder=FALSE,
                  ignoreNameCase=FALSE,
                  ...)
```

**Arguments**

|                |   |
|----------------|---|
| model          | The “correct” object.   |
| comparison     | The object to be compared with the model.   |
| transform      | A character vector containing any transformations that have been performed on the objects prior to this comparison. |
| equal          | Whether to test for equality if the test for identity fails.  |
| ignoreColOrder | For data frames, whether to reorder columns by name first.  |
| ignoreNameCase | For data frames and lists, whether to ignore the case of names when reordering components by name.                  |
| ...            | Arguments passed to compareEqual().   |

**Details**

This function is generic, with specific methods for arrays, matrices, tables, and data frames.

For arrays, matrices, and tables, the dimensions are sorted (by dimnames). For data frames, the rows are sorted, not the columns.

**Value**

An object of class “comparison”. Use isTRUE() to determine whether the comparison has succeeded.

**Author(s)**

Paul Murrell

**See Also**

[compare](#) and [compareEqual](#)

**Examples**

```
compareIgnoreOrder(1:10, 10:1)
```

---

compareShorten

*Compare Two Objects with Different Lengths*

---

**Description**

Compare two objects for equality, shortening either one if necessary beforehand.

**Usage**

```
compareShorten(model, comparison, transform = character(),
               equal = TRUE, ...)

## S3 method for class 'data.frame'
compareShorten(model, comparison, transform=character(),
               equal=TRUE, colsOnly=TRUE,
               ignoreColOrder=FALSE, ignoreNameCase=FALSE, ...)
```

**Arguments**

|                |   |
|----------------|---|
| model          | The “correct” object.   |
| comparison     | The object to be compared with the model.   |
| transform      | A character vector containing any transformations that have been performed on the objects prior to this comparison. |
| equal          | Whether to test for equality if the test for identity fails.  |
| colsOnly       | Whether to only drop extra columns (not rows) when comparing data frames.   |
| ignoreColOrder | For data frames, whether to reorder columns by name first.  |
| ignoreNameCase | For data frames and lists, whether to ignore the case of names when reordering components by name.                  |
| ...            | Arguments passed to <code>compareEqual()</code> .   |

**Details**

This function checks whether the two objects being compared are of the same size and, if they are not, it shrinks the larger one. Then the two objects are compared using `compareIdentical()` and, if that fails and `equal=TRUE`, using `compareEqual()`.

This function is generic, with specific methods for arrays, matrices, tables, and data frames.

For vectors, extra elements are dropped from the longer object. For data frames, extra columns, (and, if `colsOnly=FALSE`, extra rows) are dropped. For lists, extra components are dropped. For arrays, extra dimensions are dropped. For matrices, the comparison is forced to be two-dimensional. For tables, extra dimensions are collapsed (using `sum()`).

**Value**

An object of class “comparison”. Use `isTRUE()` to determine whether the comparison has succeeded.

**Author(s)**

Paul Murrell

**See Also**

[compare](#) and [compareEqual](#)

**Examples**

```
compareShorten(1:5, 1:10)
compareShorten(matrix(1:10, ncol=2),
                array(1:100, dim=c(5, 2, 10)))
```

---

 comparison-class

*Comparison Between Two Objects*


---

**Description**

This class is used to represent the result of a comparison between two objects.

It is just a list, with the following components:

**result** Logical value indicating whether the comparison succeeded (the objects were the same).

**transform** Character vector of descriptions of any transformations that have been applied to the objects being compared.

**tM** The transformed model object.

**tC** The transformed comparison object.

**tMpartial** The partially transformed model object.

**tCpartial** The partially transformed comparison object.

**partialTransform** The transformations that have been applied to the objects being compared, *except* for any transformations that were applied during the test for equality (i.e., by `compareEqual()`).

**Usage**

```
isTRUE(x)
```

```
transforms(comp)
```

**Arguments**

`x, comp` A comparison object.

**Details**

Partial values in the result of a comparison are useful for when a comparison fails, but a subsequent comparison will be attempted, i.e., for daisy-chaining the various `compareSomething()` functions, i.e., what `compare()` does.

**Value**

`isTRUE()` returns a logical value, based on the comparison result.

`transforms()` returns a character vector of transformation descriptions.



**Author(s)**

Paul Murrell

**See Also**[compare](#) and [compareEqual](#)**Examples**

```
isTRUE(compareIgnoreOrder(1:10, 10:1))
transforms(compareIgnoreOrder(1:10, 10:1))
```

---

`markQuestions`*Apply a Marking Scheme*

---

**Description**

This function applies a marking scheme to a set of comparisons to produce a set of marks.

**Usage**

```
markQuestions(result, ...)
```

**Arguments**

|                     |   |
|---------------------|---|
| <code>result</code> | A set of comparison results, as generated by the <code>compareFiles()</code> function.  |
| <code>...</code>    | One or more marking schemes, as generated by the <code>questionMarks()</code> function. |

**Value**

A matrix of marks.

**Author(s)**

Paul Murrell

**See Also**[questionMarks](#) and [compareFiles](#)

**Examples**

```

modelNames <- c("id", "age",
               "edu", "class",
               "IndianMothers")
files <- list.files(system.file("example", package="compare"),
                  pattern="^student[0-9]+[.]R$",
                  full.names=TRUE)

results <- compareFiles(files,
                       modelNames,
                       system.file("example", "model.R", package="compare"),
                       allowAll=TRUE,
                       resultNames=gsub("[/]|[.]R", "", files))
q1 <- questionMarks(c("id", "age", "edu", "class"),
                   maxMark=2,
                   rule("id", 1),
                   rule("age", 1),
                   rule("edu", 1),
                   rule("class", 1,
                       transformRule("coerced", 1)))

q2 <- questionMarks("IndianMothers",
                   maxMark=1,
                   rule("IndianMothers", 1))

markQuestions(results, q1, q2)

```

---

questionComments

*Define a Commenting Scheme*


---

**Description**

These functions are used to specify how the result of a comparison between two objects should be converted to a set of comments for feedback.

**Usage**

```
questionComments(answerNames, ...)
```

```
comments(answerName, ...)
```

```
transformComment(pattern, comment)
```

**Arguments**

answerNames     The names of objects that have been compared.

answerName     The name of one object that has been compared.

pattern         A regular expression to search for within the comparison transformations.

comment            A comment to record if the regular expression is matched.  
 ...                For questionComments, zero or more comments (as generated by the the comments() function); for comments(), zero or more transformation comments (as generated by the transformComment() function).

### Details

These functions are used to define a commenting scheme. The function commentQuestions() can then be used to apply the results to a set of comparisons, as generated by compareFiles().

### Value

An object of class "questionComments".

### Author(s)

Paul Murrell

### See Also

[commentQuestions](#) and [compareFiles](#)

### Examples

```
# Comment a comparison involving several objects
# Start with a comment of 1 and deduct 1 if the comparison failed
questionComments(c("id", "age", "edu", "class"),
                 comments("class",
                          transformComment("coerced",
                                             "'class' is a factor!")))

```

---

questionMarks

*Define a Marking Scheme*

---

### Description

These functions are used to specify how the result of a comparison between two objects should be converted to a numeric mark.

### Usage

```
questionMarks(answerNames, maxMark, ...)
```

```
rule(answerName, falseMark, ...)
```

```
transformRule(pattern, mark)
```

**Arguments**

|             |  |
|-------------|--|
| answerNames | The names of objects that have been compared.  |
| maxMark     | The maximum mark for the question.   |
| answerName  | The name of one object that has been compared.   |
| falseMark   | How many marks to deduct if the comparison result was FALSE.   |
| pattern     | A regular expression to search for within the comparison transformations.  |
| mark        | How many marks to deduct if the regular expression is matched.   |
| ...         | For questionMarks, zero or more marking rules (as generated by the the rule() function); for rule(), zero or more transformation rules (as generated by the transformRule() function). |

**Details**

These functions are used to define a marking scheme. The function markQuestions() can then be used to apply the results to a set of comparisons, as generated by compareFiles().

**Value**

An object of class "questionMarks".

**Author(s)**

Paul Murrell

**See Also**

[markQuestions](#) and [compareFiles](#)

**Examples**

```
# Check a comparison involving an object called 'IndianMothers'
# Start with a mark of 1 and deduct 1 if the comparison failed
questionMarks("IndianMothers",
              maxMark=1,
              rule("IndianMothers", 1))

# Check comparisons involving several objects
# Start with a mark of 2, for each unsuccessful comparison
# deduct 1 mark, and if a comparison involving the object
# 'class' includes a coercion transformation, deduct 1 mark.
questionMarks(c("id", "age", "edu", "class"),
              maxMark=2,
              rule("id", 1),
              rule("age", 1),
              rule("edu", 1),
              rule("class", 1,
                  transformRule("coerced", 1)))
```

---

|            |                                    |
|------------|------------------------------------|
| sourceFile | <i>Evaluate R Code from a File</i> |
|------------|------------------------------------|

---

**Description**

Evaluate R code from a file within a local environment and return a list of objects of interest.

**Usage**

```
sourceFile(filename, modelNames)
```

**Arguments**

|            |  |
|------------|--|
| filename   | The name of a file containing R code.  |
| modelNames | The names of objects of interest that should be generated by the R code in the file and that we want returned. |

**Value**

A list containing one component for each name in modelNames.

**Author(s)**

Paul Murrell

**See Also**

[compareFile](#)

**Examples**

```
modelNames <- c("id", "age",  
               "edu", "class",  
               "IndianMothers")  
sourceFile(system.file("example", "student1.R", package="compare"),  
           modelNames)
```

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