
1 Entries Added to the ".local" Directory

- `.rgf.alpha` defined as: `.rgf.alpha.low || .rgf.alpha.upper`
- `.rgf.alphanumeric` the ASCII characters: `.rgf.alpha || .rgf.digits`
- `.rgf.alpha.lower` the lowercase ASCII English characters `"abcdefghijklmnopqrstuvwxyz"`
- `.rgf.alpha.upper` the uppercase ASCII English characters: `.rgf.alpha.lower-upper`
- `.rgf.digits` the ASCII characters defined as: `"0123456789"`
- `.rgf.non.printable` the non-printing ASCII characters: `xrange("00"x,"1F"x) || "FF"x`
- `.rgf.symbol.chars` the ASCII characters that may start a Rexx symbol defined as: `".!_?"`

2 New Routines for String Related BIFs

2.1 Ignoring the Case of English Letters

- `abbrev2(information, info [, [n-length] [, "I"|"C"]])`
- `changeStr2(needle, haystack, newNeedle [, [n-count] [, "I"|"C"]])`
- `compare2(string1, string2 [, [pad] [, "I"|"C"]])`
- `countStr2(needle, haystack [, "I"|"C"])`
- `lastPos2(needle, haystack [, [n-start] [, [n-length] [, "I"|"C"]]])`
- `pos2(needle, haystack [, [n-start] [, [n-length] [, "I"|"C"]]])`
- `wordPos2(phrase, string [, [n-start] [, "I"|"C"]])`

2.2 Introducing Negative Numeric Arguments to BIFs

- `abbrev2(information, info [, [n-length] [, "I"|"C"]])`
- `changeStr2(needle, haystack, newNeedle [, [n-count] [, "I"|"C"]])`
- `delStr2(string, n-start [, n-length])`
- `delWord2(string, n-start [, n-length])`
- `lastPos2(needle, haystack [, [n-start] [, [n-length] [, "I"|"C"]]])`
- `left2(string, n-length [, pad])`
- `lower2(string [, [n-start] [, [n-length]]])`
- `overlay2(new, target [, [n-start] [, [n-length] [, pad]]])`
- `pos2(needle, haystack [, [n-start] [, [n-length] [, "I"|"C"]]])`
- `right2(string, n-length [, pad])`
- `subChar2(string [, [n-position]])`
- `subStr2(string, n-start [, [n-length] [, pad]]])`
- `subWord2(string, n-start [, n-count])`
- `upper2(string [, [n-start] [, [n-length]]])`
- `word(string, n-position)`
- `wordIndex(string, n-position)`
- `wordLength(string, n-position)`
- `wordPos2(phrase, string [, [n-start] [, "I"|"C"]])`

3 Making Sorting Easier (More "Rexxish")

3.1 New Public Routines (SORT2, STABLESORT2)

```
sort2(array [, [A|D] [, [I|C]] ] )  
stableSort2(array [, [A|D] [, [I|C]] ] )
```

```
sort2(array [, comparator [, A|D] ] )  
stableSort2(array [, comparator [, A|D] ] )
```

3.2 Creating Additional Comparator Classes for Sorting

3.2.1 The "NumberComparator" Class

The syntax for the `.NumberComparator` constructor is:

```
init( [.true|.false] [, [A|D] [, [IC][N]] ] )
```

```
sort2(array [, [A|D] [, [I|C][N]] ] )  
stableSort2(array [, [A|D] [, [I|C][N]] ] )
```

3.2.2 The "StringComparator" Class

The syntax for the `.StringComparator` constructor is:

```
init([A|D] [, [IC][N]] )
```

```
sort2(array [, [A|D] [, [I|C][N]] ] )  
stableSort2(array [, [A|D] [, [I|C][N]] ] )
```

3.2.3 The "StringColumnComparator" Class

The syntax for the `.StringColumnComparator` constructor is one of:

```
init( {pos [, length [, [A|D] [, [I|C|N]] ] }[, ...] )  
init( orderedCollection [, [defaultAD], [defaultICN]] )
```

```
[stable]Sort2( array , {pos [, length [, [A|D] [, [I|C|N]] ] }[, ...] )  
[stable]Sort2( array, orderedCollection )
```

3.2.4 The "MessageComparator" Class

The `.MessageComparator` is devised with the following syntax for its constructor:

```
init( messageName|messageObject [, bCached=.false] )  
init( orderedCollection )
```

A `messageName` may be appended with a slash ("/") followed by a blank delimited list of options: "a[scending]" (default) or "d[escending]", optionally followed by "n[umeric]", "i[gnoreCase]" or "c[aseDependent]", if the returned value is of type `.String`.

```
[stable]Sort2( array, "M", messageName|messageObject[, ...] )  
[stable]Sort2( array, "M", orderedCollection )
```

4 Parsing a String Into Words

4.1 The Public Routine "parseWords2"

```
parseWords2(string [, [ref=" "||"09"x] [, [kind="D"|"W"] [, returns="W"|"P"]])
```

4.2 The "StringOfWords" Class

The following methods are defined for the `.StringOfWords` class:

- `init(string [, [ref=(" "||"09"x)] [, [kind="D"|"W"]]])`
The optional argument `kind` has either the value "D[elimiter]" (default) or "W[ord]" and determines whether the `ref` characters are used to delimit words or define the characters that constitute a word.
- `delWord(position [, count])`
- `kind([newKind])`
- `makeArray`
- `positionArray`
Returns a two-dimensional array, where the first dimension denotes the i^{th} word position and the second dimension denotes the start position ("`[i,1]`") and the length ("`[i,2]`") of the i^{th} parsed word.

- `reference([newReference])`
- `string([newString])`
- `subWord(position [,count])`
- `word(position)`
- `words`
- `wordArray`
- `wordIndex(n)`
- `wordLength(n)`
- `wordPos(phrase [, [start] [, C|I]])`

5 Helpful Routines for Debug Output

5.1 Routines for Creating Easier Legible Strings

- `enquote2(string [, quote="''])`
- `escape2(string)`
- `pp2(object)`
- `ppCondition2(conditionObject [i1="09"x[,i2="0909"x[,i3="090909"x[,lf=.endOfLine]]])` ^{a)}
- `ppIndex2(object)`
- `ppMethod2(methodObject [, indent="")`
- `ppPackage2(packageObject [i1=""[,i2="09"x[,lf=.endOfLine]])` ^{a)}

5.2 Routines to Ease the Dumping of Collections

- `dump2(collection [, [title] [,comparator]])`
- `makeRelation2(collection [,messageName|messageObject])`

^{a)} "i1" (indent1), "i2" (indent2), "i3" (indent3): determine the indentaion characters to prepend to each line.