

# The ooRexx decimalFormat Class

Date: Nov. 2007  
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Purpose: To provide a simple means to format a decimal number.  
Requires: decimalFormat.cls  
Version: Beta .1

## Methods

**new**                    formatter = .decimalFormat~new(optional pattern)  
If pattern is not specified, the default pattern "#,###.##" will be used.

**format**                a\_result = formatter~format(number)  
Returns a result with "number" formatted according to the set pattern.

## Attributes

|                   |     |  |
|-------------------|-----|--|
| groupingSize      | get | a_result = formatter~groupingSize (Default is 3)   |
|                   | set | formatter~groupingSize = numeric whole number  |
| decimalSeparator  | get | a_result = formatter~decimalSeparator (Default is '.')   |
|                   | set | formatter~decimalSeparator = single length character that is not a duplicate of the groupingSeparator. |
| groupingSeparator | get | a_result = formatter~groupingSeparator (Default is ',')  |
|                   | set | formatter~groupingSeparator = single length character that is not a duplicate of the decimalSeparator. |
| pattern           | get | a_result = formatter~pattern (Default is '#,###.##')   |
|                   | set | formatter~pattern = a valid pattern as described below   |

## Patterns

A pattern can be from 1 to 3 sub-patterns with the sub-patterns separated by a semi-colon ';'.  
The first sub-pattern will be applied to positive values.  
The second sub-pattern will be applied to negative values.  
The third sub-pattern will be applied to a 0 value.

If only one sub-pattern is specified, the same pattern will be applied to positive, negative, and 0 values. A negative value will be preceded with the default minus sign '-'. A 0 value is treated as a positive value.

The positive and negative sub-patterns can have from 1 to 3 parts:

- Part 1 – A string prefix enclosed in quotes
- Part 2 – A pattern "mask"
- Part 3 – A string suffix enclosed in quotes

Note: A negative sub-pattern does not have to repeat the mask, if the same mask is to be used – only the prefix & suffix need be supplied.

The zero sub-pattern has 1 part:

- Part 1 – A string value enclosed in quotes (.nil can also be used, but it must NOT be quoted)

## Pattern Masks

Each pattern mask has 4 reserved symbols

- # A pound/hash symbol represents an "expendable" place holder. If the formatted result has a corresponding value, the # will be replaced with the corresponding value.
- 0 A zero represents a "non-expendable" place holder. If the formatted result has a corresponding value the 0 will be replaced with the corresponding value. If there is not a corresponding value, the 0 will remain as the place holder.
- , A comma signifies that each "thousands" group is to be separated with a comma.
- . A period signifies the integer and decimal separator. Results are rounded, according to ooRexx format rules, based on the number of place holders in the decimal portion of the number argument.

Note: If a filler string is required, it should be part of either the prefix or suffix.

## Pattern Examples and Corresponding Results

decimalFormat Version...: Beta .1

Pattern Is ->('#,###.##')<->Grouping Size Is -> 3 <-  
UnFormatted Formatted Test #

|               |                |    |
|---------------|----------------|----|
| 10193390      | 10,193,390     | 1  |
| 10193390.00   | 10,193,390     | 2  |
| 10193390.49   | 10,193,390.49  | 3  |
| 10193390.51   | 10,193,390.51  | 4  |
| 10193390.513  | 10,193,390.51  | 5  |
| 10193390.515  | 10,193,390.52  | 6  |
| 0             | 0              | 7  |
| .1            | .1             | 8  |
| .11           | .11            | 9  |
| .15           | .15            | 10 |
| .114          | .11            | 11 |
| .115          | .12            | 12 |
| 110193390     | 110,193,390    | 13 |
| -10193390     | -10,193,390    | 14 |
| -10193390.00  | -10,193,390    | 15 |
| -10193390.49  | -10,193,390.49 | 16 |
| -10193390.51  | -10,193,390.51 | 17 |
| -10193390.513 | -10,193,390.51 | 18 |
| -10193390.515 | -10,193,390.52 | 19 |
| 0             | 0              | 20 |
| -0.1          | -.1            | 21 |
| -0.11         | -.11           | 22 |
| -0.15         | -.15           | 23 |
| -0.114        | -.11           | 24 |
| -0.115        | -.12           | 25 |

Pattern Is ->('#')<->Grouping Size Is -> 3 <-  
UnFormatted Formatted Test #

|               |           |    |
|---------------|-----------|----|
| 10193390      | 10193390  | 26 |
| 10193390.00   | 10193390  | 27 |
| 10193390.49   | 10193390  | 28 |
| 10193390.51   | 10193391  | 29 |
| 10193390.513  | 10193391  | 30 |
| 10193390.515  | 10193391  | 31 |
| 0             | 0         | 32 |
| .1            | 0         | 33 |
| .11           | 0         | 34 |
| .15           | 0         | 35 |
| .114          | 0         | 36 |
| .115          | 0         | 37 |
| 110193390     | 110193390 | 38 |
| -10193390     | -10193390 | 39 |
| -10193390.00  | -10193390 | 40 |
| -10193390.49  | -10193390 | 41 |
| -10193390.51  | -10193391 | 42 |
| -10193390.513 | -10193391 | 43 |
| -10193390.515 | -10193391 | 44 |
| 0             | 0         | 45 |
| -0.1          | 0         | 46 |
| -0.11         | 0         | 47 |
| -0.15         | 0         | 48 |
| -0.114        | 0         | 49 |
| -0.115        | 0         | 50 |

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Pattern Is ->('#.##')<->Grouping Size Is -> 3 <-
UnFormatted Formatted Test #
-----
10193390 10193390 51
10193390.00 10193390 52
10193390.49 10193390.49 53
10193390.51 10193390.51 54
10193390.513 10193390.51 55
10193390.515 10193390.52 56
0 0 57
.1 .1 58
.11 .11 59
.15 .15 60
.114 .11 61
.115 .12 62
110193390 110193390 63
-10193390 -10193390 64
-10193390.00 -10193390 65
-10193390.49 -10193390.49 66
-10193390.51 -10193390.51 67
-10193390.513 -10193390.51 68
-10193390.515 -10193390.52 69
0 0 70
-0.1 -.1 71
-0.11 -.11 72
-0.15 -.15 73
-0.114 -.11 74
-0.115 -.12 75

Pattern Is ->('#.00')<->Grouping Size Is -> 3 <-
UnFormatted Formatted Test #
-----
10193390 10193390.00 76
10193390.00 10193390.00 77
10193390.49 10193390.49 78
10193390.51 10193390.51 79
10193390.513 10193390.51 80
10193390.515 10193390.52 81
0 0 82
.1 .10 83
.11 .11 84
.15 .15 85
.114 .11 86
.115 .12 87
110193390 110193390.00 88
-10193390 -10193390.00 89
-10193390.00 -10193390.00 90
-10193390.49 -10193390.49 91
-10193390.51 -10193390.51 92
-10193390.513 -10193390.51 93
-10193390.515 -10193390.52 94
0 0 95
-0.1 -.10 96
-0.11 -.11 97
-0.15 -.15 98
-0.114 -.11 99
-0.115 -.12 100

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Pattern Is ->('0.00')<->Grouping Size Is -> 3 <-
UnFormatted      Formatted Test #
-----
10193390          10193390.00    101
10193390.00       10193390.00    102
10193390.49       10193390.49    103
10193390.51       10193390.51    104
10193390.513      10193390.51    105
10193390.515      10193390.52    106
0                 0              107
.1                0.10          108
.11               0.11          109
.15               0.15          110
.114              0.11          111
.115              0.12          112
110193390         110193390.00   113
-10193390         -10193390.00   114
-10193390.00      -10193390.00   115
-10193390.49      -10193390.49   116
-10193390.51      -10193390.51   117
-10193390.513     -10193390.51   118
-10193390.515     -10193390.52   119
0                 0              120
-0.1              -0.10         121
-0.11             -0.11         122
-0.15             -0.15         123
-0.114            -0.11         124
-0.115            -0.12         125

```

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Pattern Is ->('#,##.00')<->Grouping Size Is -> 3 <-
UnFormatted      Formatted Test #
-----
10193390          10,193,390.00   126
10193390.00       10,193,390.00   127
10193390.49       10,193,390.49   128
10193390.51       10,193,390.51   129
10193390.513      10,193,390.51   130
10193390.515      10,193,390.52   131
0                 0              132
.1                .10           133
.11               .11           134
.15               .15           135
.114              .11           136
.115              .12           137
110193390         110,193,390.00   138
-10193390         -10,193,390.00   139
-10193390.00      -10,193,390.00   140
-10193390.49      -10,193,390.49   141
-10193390.51      -10,193,390.51   142
-10193390.513     -10,193,390.51   143
-10193390.515     -10,193,390.52   144
0                 0              145
-0.1              -.10          146
-0.11             -.11          147
-0.15             -.15          148
-0.114            -.11          149
-0.115            -.12          150

```

Pattern Is ->('"\$"#,##0.00')<->Grouping Size Is -> 3 <-

| UnFormatted   | Formatted        | Test # |
|---------------|------------------|--------|
| 10193390      | \$10,193,390.00  | 151    |
| 10193390.00   | \$10,193,390.00  | 152    |
| 10193390.49   | \$10,193,390.49  | 153    |
| 10193390.51   | \$10,193,390.51  | 154    |
| 10193390.513  | \$10,193,390.51  | 155    |
| 10193390.515  | \$10,193,390.52  | 156    |
| 0             | \$0              | 157    |
| .1            | \$0.10           | 158    |
| .11           | \$0.11           | 159    |
| .15           | \$0.15           | 160    |
| .114          | \$0.11           | 161    |
| .115          | \$0.12           | 162    |
| 110193390     | \$110,193,390.00 | 163    |
| -10193390     | -\$10,193,390.00 | 164    |
| -10193390.00  | -\$10,193,390.00 | 165    |
| -10193390.49  | -\$10,193,390.49 | 166    |
| -10193390.51  | -\$10,193,390.51 | 167    |
| -10193390.513 | -\$10,193,390.51 | 168    |
| -10193390.515 | -\$10,193,390.52 | 169    |
| 0             | \$0              | 170    |
| -0.1          | -\$0.10          | 171    |
| -0.11         | -\$0.11          | 172    |
| -0.15         | -\$0.15          | 173    |
| -0.114        | -\$0.11          | 174    |
| -0.115        | -\$0.12          | 175    |

Pattern Is ->('"\$"#,##0.00;"-\$"#,##0.00')<->Grouping Size Is -> 3 <-

| UnFormatted   | Formatted        | Test # |
|---------------|------------------|--------|
| 10193390      | \$10,193,390.00  | 176    |
| 10193390.00   | \$10,193,390.00  | 177    |
| 10193390.49   | \$10,193,390.49  | 178    |
| 10193390.51   | \$10,193,390.51  | 179    |
| 10193390.513  | \$10,193,390.51  | 180    |
| 10193390.515  | \$10,193,390.52  | 181    |
| 0             | \$0              | 182    |
| .1            | \$0.10           | 183    |
| .11           | \$0.11           | 184    |
| .15           | \$0.15           | 185    |
| .114          | \$0.11           | 186    |
| .115          | \$0.12           | 187    |
| 110193390     | \$110,193,390.00 | 188    |
| -10193390     | -\$10,193,390.00 | 189    |
| -10193390.00  | -\$10,193,390.00 | 190    |
| -10193390.49  | -\$10,193,390.49 | 191    |
| -10193390.51  | -\$10,193,390.51 | 192    |
| -10193390.513 | -\$10,193,390.51 | 193    |
| -10193390.515 | -\$10,193,390.52 | 194    |
| 0             | \$0              | 195    |
| -0.1          | -\$0.10          | 196    |
| -0.11         | -\$0.11          | 197    |
| -0.15         | -\$0.15          | 198    |
| -0.114        | -\$0.11          | 199    |
| -0.115        | -\$0.12          | 200    |

Pattern Is ->('"\$"#,##0.00;"-\$"#,###.##')<->Grouping Size Is -> 3 <-

| UnFormatted   | Formatted        | Test # |
|---------------|------------------|--------|
| 10193390      | \$10,193,390.00  | 201    |
| 10193390.00   | \$10,193,390.00  | 202    |
| 10193390.49   | \$10,193,390.49  | 203    |
| 10193390.51   | \$10,193,390.51  | 204    |
| 10193390.513  | \$10,193,390.51  | 205    |
| 10193390.515  | \$10,193,390.52  | 206    |
| 0             | \$0              | 207    |
| .1            | \$0.10           | 208    |
| .11           | \$0.11           | 209    |
| .15           | \$0.15           | 210    |
| .114          | \$0.11           | 211    |
| .115          | \$0.12           | 212    |
| 110193390     | \$110,193,390.00 | 213    |
| -10193390     | -\$10,193,390    | 214    |
| -10193390.00  | -\$10,193,390    | 215    |
| -10193390.49  | -\$10,193,390.49 | 216    |
| -10193390.51  | -\$10,193,390.51 | 217    |
| -10193390.513 | -\$10,193,390.51 | 218    |
| -10193390.515 | -\$10,193,390.52 | 219    |
| 0             | \$0              | 220    |
| -0.1          | -\$0.1           | 221    |
| -0.11         | -\$0.11          | 222    |
| -0.15         | -\$0.15          | 223    |
| -0.114        | -\$0.11          | 224    |
| -0.115        | -\$0.12          | 225    |

Pattern Is ->('"\$"#,##0.00" DB";-\$" CR"')<->Grouping Size Is -> 3 <-

| UnFormatted   | Formatted           | Test # |
|---------------|---------------------|--------|
| 10193390      | \$10,193,390.00 DB  | 226    |
| 10193390.00   | \$10,193,390.00 DB  | 227    |
| 10193390.49   | \$10,193,390.49 DB  | 228    |
| 10193390.51   | \$10,193,390.51 DB  | 229    |
| 10193390.513  | \$10,193,390.51 DB  | 230    |
| 10193390.515  | \$10,193,390.52 DB  | 231    |
| 0             | \$0 DB              | 232    |
| .1            | \$0.10 DB           | 233    |
| .11           | \$0.11 DB           | 234    |
| .15           | \$0.15 DB           | 235    |
| .114          | \$0.11 DB           | 236    |
| .115          | \$0.12 DB           | 237    |
| 110193390     | \$110,193,390.00 DB | 238    |
| -10193390     | -\$10,193,390.00 CR | 239    |
| -10193390.00  | -\$10,193,390.00 CR | 240    |
| -10193390.49  | -\$10,193,390.49 CR | 241    |
| -10193390.51  | -\$10,193,390.51 CR | 242    |
| -10193390.513 | -\$10,193,390.51 CR | 243    |
| -10193390.515 | -\$10,193,390.52 CR | 244    |
| 0             | \$0 DB              | 245    |
| -0.1          | -\$0.10 CR          | 246    |
| -0.11         | -\$0.11 CR          | 247    |
| -0.15         | -\$0.15 CR          | 248    |
| -0.114        | -\$0.11 CR          | 249    |
| -0.115        | -\$0.12 CR          | 250    |

Pattern Is ->('#,##0.00;"(")";'.nil)<->Grouping Size Is -> 3 <-

| UnFormatted   | Formatted       | Test # |
|---------------|-----------------|--------|
| 10193390      | 10,193,390.00   | 251    |
| 10193390.00   | 10,193,390.00   | 252    |
| 10193390.49   | 10,193,390.49   | 253    |
| 10193390.51   | 10,193,390.51   | 254    |
| 10193390.513  | 10,193,390.51   | 255    |
| 10193390.515  | 10,193,390.52   | 256    |
| 0             | The NIL object  | 257    |
| .1            | 0.10            | 258    |
| .11           | 0.11            | 259    |
| .15           | 0.15            | 260    |
| .114          | 0.11            | 261    |
| .115          | 0.12            | 262    |
| 110193390     | 110,193,390.00  | 263    |
| -10193390     | (10,193,390.00) | 264    |
| -10193390.00  | (10,193,390.00) | 265    |
| -10193390.49  | (10,193,390.49) | 266    |
| -10193390.51  | (10,193,390.51) | 267    |
| -10193390.513 | (10,193,390.51) | 268    |
| -10193390.515 | (10,193,390.52) | 269    |
| 0             | The NIL object  | 270    |
| -0.1          | (0.10)          | 271    |
| -0.11         | (0.11)          | 272    |
| -0.15         | (0.15)          | 273    |
| -0.114        | (0.11)          | 274    |
| -0.115        | (0.12)          | 275    |

Pattern Is ->('#,##0.00;"(")";"[0]"')<->Grouping Size Is -> 3 <-

| UnFormatted   | Formatted       | Test # |
|---------------|-----------------|--------|
| 10193390      | 10,193,390.00   | 276    |
| 10193390.00   | 10,193,390.00   | 277    |
| 10193390.49   | 10,193,390.49   | 278    |
| 10193390.51   | 10,193,390.51   | 279    |
| 10193390.513  | 10,193,390.51   | 280    |
| 10193390.515  | 10,193,390.52   | 281    |
| 0             | [0]             | 282    |
| .1            | 0.10            | 283    |
| .11           | 0.11            | 284    |
| .15           | 0.15            | 285    |
| .114          | 0.11            | 286    |
| .115          | 0.12            | 287    |
| 110193390     | 110,193,390.00  | 288    |
| -10193390     | (10,193,390.00) | 289    |
| -10193390.00  | (10,193,390.00) | 290    |
| -10193390.49  | (10,193,390.49) | 291    |
| -10193390.51  | (10,193,390.51) | 292    |
| -10193390.513 | (10,193,390.51) | 293    |
| -10193390.515 | (10,193,390.52) | 294    |
| 0             | [0]             | 295    |
| -0.1          | (0.10)          | 296    |
| -0.11         | (0.11)          | 297    |
| -0.15         | (0.15)          | 298    |
| -0.114        | (0.11)          | 299    |
| -0.115        | (0.12)          | 300    |



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Pattern Is ->('0.000')<->Grouping Size Is -> 3 <-
UnFormatted Formatted Test #
-----
10193390 10193390.000 301
10193390.00 10193390.000 302
10193390.49 10193390.490 303
10193390.51 10193390.510 304
10193390.513 10193390.513 305
10193390.515 10193390.515 306
0 0 307
.1 0.100 308
.11 0.110 309
.15 0.150 310
.114 0.114 311
.115 0.115 312
110193390 110193390.000 313
-10193390 -10193390.000 314
-10193390.00 -10193390.000 315
-10193390.49 -10193390.490 316
-10193390.51 -10193390.510 317
-10193390.513 -10193390.513 318
-10193390.515 -10193390.515 319
0 0 320
-0.1 -0.100 321
-0.11 -0.110 322
-0.15 -0.150 323
-0.114 -0.114 324
-0.115 -0.115 325

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Pattern Is ->('#,###.##')<->Grouping Size Is -> 4 <-
UnFormatted Formatted Test #
-----
10193390 1019,3390 326
10193390.00 1019,3390 327
10193390.49 1019,3390.49 328
10193390.51 1019,3390.51 329
10193390.513 1019,3390.51 330
10193390.515 1019,3390.52 331
0 0 332
.1 .1 333
.11 .11 334
.15 .15 335
.114 .11 336
.115 .12 337
110193390 1,1019,3390 338
-10193390 -1019,3390 339
-10193390.00 -1019,3390 340
-10193390.49 -1019,3390.49 341
-10193390.51 -1019,3390.51 342
-10193390.513 -1019,3390.51 343
-10193390.515 -1019,3390.52 344
0 0 345
-0.1 -.1 346
-0.11 -.11 347
-0.15 -.15 348
-0.114 -.11 349
-0.115 -.12 350

```

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Pattern Is ->('###0.00')<->Grouping Size Is -> 4 <-
UnFormatted Formatted Test #
-----
10193390 1019,3390.00 351
10193390.00 1019,3390.00 352
10193390.49 1019,3390.49 353
10193390.51 1019,3390.51 354
10193390.513 1019,3390.51 355
10193390.515 1019,3390.52 356
0 0 357
.1 0.10 358
.11 0.11 359
.15 0.15 360
.114 0.11 361
.115 0.12 362
110193390 1,1019,3390.00 363
-10193390 -1019,3390.00 364
-10193390.00 -1019,3390.00 365
-10193390.49 -1019,3390.49 366
-10193390.51 -1019,3390.51 367
-10193390.513 -1019,3390.51 368
-10193390.515 -1019,3390.52 369
0 0 370
-0.1 -0.10 371
-0.11 -0.11 372
-0.15 -0.15 373
-0.114 -0.11 374
-0.115 -0.12 375

```

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Pattern Is ->('"€"###0.00;"-€"###0.00;"[0]"')<->Grouping Size Is -> 3 <-
UnFormatted Formatted Test #
-----
10193390 €10.193.390,00 376
10193390.00 €10.193.390,00 377
10193390.49 €10.193.390,49 378
10193390.51 €10.193.390,51 379
10193390.513 €10.193.390,51 380
10193390.515 €10.193.390,52 381
0 [0] 382
.1 €0,10 383
.11 €0,11 384
.15 €0,15 385
.114 €0,11 386
.115 €0,12 387
110193390 €110.193.390,00 388
-10193390 -€10.193.390,00 389
-10193390.00 -€10.193.390,00 390
-10193390.49 -€10.193.390,49 391
-10193390.51 -€10.193.390,51 392
-10193390.513 -€10.193.390,51 393
-10193390.515 -€10.193.390,52 394
0 [0] 395
-0.1 -€0,10 396
-0.11 -€0,11 397
-0.15 -€0,15 398
-0.114 -€0,11 399
-0.115 -€0,12 400

```