Template

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LaTeX

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1   Math extensions

The math exetensions were inspired as I was making my way through [Concrete Mathematics], and various courses at DIKU. It seems to me that these macros are generically useful.

1.1   Groups

Very often, mathematical expressions make use of grouping constructs such as $\lceil\rceil$, $\lfloor\rfloor$, (), etc. These constructs are relatively easy to use in LaTeX(with the `amsmath` package), despite the fact that one has to often distinguish between the left and right connectives, as with e.g. `\lfoor` and `\rfloor`. What makes these groups particularly impractical however, is that the height of the connectives is not automatically adjusted to the content they enclose. To this end, one may resort to using the commands `\left` and `\right`, as respective connective prefixes... Yuk! This lead to the specification of the following macros:

`\ceil{group}` $\lceil group \rceil$

`\floor{group}` $\lfloor group \rfloor$

`\set{group}` $\{group\}$

`\seq{group}` $[group]$ (as in, *sequence*)

`\card{group}` $|group|$ (as in, *cardinality*)

`\tuple{group}` $\langle group \rangle$

`\p{group}` $(group)$

`\st{group}` $|\ group$ (as in, *such that*)

1.2   Backus-Naur Form

`\nonterm{group}`   <group>

`\term{group}`   'group'

1.3 Cormen

MERGE-SORT(A, p, r)

1 **if** $p < r$
2      $q = \lfloor (p + r)/2 \rfloor$
3   MERGE-SORT(A, p, q)
4   MERGE-SORT$(A, q + 1, r)$
5   MERGE(A, p, q, r)

References

[Concrete Mathematics] Ronald L. Graham, Donald E. Knuth, and Oren
    Patashnik. *Concrete Mathematics: A Foundation for Computer Science*. 1994,
    2nd ed. Addison-Wesley Longman Publishing Co., Inc. Boston, USA. ISBN
    0201558025.