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\lccode builds a hash table

Wybo Dekker (NTG) asked on the TEX-NL list how to construct a macro where in the name a '1' would be replaced by an 'A'. This involves a conversion and TEX does not ship with that many straightforward conversion features. His approach involved the \char primitive but failed for the (maybe not that obvious) reason that this primitive results in a character node and in expansions (as in an \edef) remains as it is: a reference to a specific character (slot) in the font used at the moment when it is applied.

```
\Name{test}{1}{Hello}
\Name{test}{2}{World!}
\testA\ \testB % this should give: Hello World!
```

A rather convenient way to remap characters is using the \lccode or \uccode primitives in combination with \lowercase or \uppercase. The following solution is a bit optimized in the sense that we expand the temporary variable before we end the group. An alternative is to define \temp globally and to omit the first \expandafter. Watch how we apply \lowercase to the whole definition; using the \lowercase inside an \edef would not work. Instead of using a loop an dsome calculations, we directly assign the codes. The 0/J case is an exception anyway.

```
\long\def\Name#1#2#3%
 {\bgroup
  \lccode`1=`A \lccode`6=`F
  \lccode`2=`B \lccode`7=`G
  \lccode`3=`C \lccode`8=`H
  \lccode`4=`D \lccode`9=`I
  \lccode`5=`E \lccode`0=`J
  \lowercase{\def\temp{#2}}%
  \expandafter\egroup\expandafter\def\csname#1\temp\endcsname{#3}}

\Name{test}{1}{Hello}
\Name{test}{2}{World!}
\testA\ \testB
```

Of course we don't need such a remapping at all, which is demonstrated by the alternative posted by Piet van Oostrum at TEX-NL:

```
\long\def\Name#1#2#3%
 {\expandafter\def\csname #1\ifcase#2\relax\or A\or B\or C\or
     D\or E\or F\or G\or H\or I\or J\or K\fi\endcsname{#3}}
```

A better variant is the following. This one takes care of the zero case:

```
\long\def\Name#1#2#3%
 {\expandafter\def\csname #1\ifcase#2 J\or A\or B\or C\or D\or
     E\or F\or G\or H\or I\else#2\fi\endcsname{#3}}
```

The next one is even better because it also takes care of non digits:

```
\long\def\Name#1#2#3%
 {\expandafter\def\csname#1\ifx#20J\else\ifcase0#2\or A\or B\or
     C\or D\or E\or F\or G\or H\or I\else#2\fi\fi\endcsname{#3}}
```

Now we can say:

```
\Name{test}{0}{zero}
\Name{test}{1}{one}
\Name{test}{x}{xxx}
\testJ \testA \testx
```