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Identification

Map the directories at a specified level inferior to a given starting directory.
maplevel
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Purpose

Maplevel is called by the command map_dir (BX.8.11) as many times as is needed to map the tree hierarchy beneath a given starting directory. The method used in maplevel can easily be applied to other tasks to be performed at a specified level inferior to a given directory.

Usage

```
call maplevel(path, ln, depth_flag);
```

Maplevel formats and lists the directory entries in all directories that are ln levels inferior to the directory pointed to by path (See BX.8.11 for an example of the formatting.)

When a directory is reached that is ln levels inferior to path the bit flag, depth_flag, is turned on ("1"b). The caller of maplevel can verify that the ln level was reached by initially setting the flag off ("0"b) before calling maplevel, and checking the value maplevel returns.

Implementation

```
call maplevel(path, ln, depth_flag);

dcl path char(*) varying, ln fixed bin(17),
    depth_flag bit(1);
```

Maplevel performs its function by making recursive calls to itself. Maplevel first calls the basic file system primitive hcs_$list_dir to obtain the contents of the directory pointed to by path. The only entries in a directory which are of interest to maplevel are directory entries. Depending on the value of the level counter, ln, maplevel takes one of two possible courses. If ln is greater than

zero the desired level has not yet been reached. Maplevel scans the list of entries returned by hcs_$list_dir looking for a directory branch. If such an entry is found, maplevel appends it to path, decreases ln by one and calls maplevel with the new set of arguments. On a return to maplevel at this point the scanning for directory branches is resumed. When all the entries have been checked maplevel increases the value of ln by one and returns normally to its caller.

If the value of ln is zero when maplevel is called the information returned by hcs_$list_dir is formated and written into the output stream (See BX.8.11). Depth_flag is set equal to "1"b to indicate that the ln^{th} level has been reached. In this case (ln = 0) one is not added to ln before maplevel returns to its caller. If maplevel is called with a negative value for ln, maplevel responds as if ln equaled zero. An error that maplevel may encounter is not being able to read the contents of a directory defined by path. In this case maplevel writes in the output stream "improper access attributes for path". If hcs_$list_dir returns the error "path not found" maplevel writes this message in the output stream. Both messages are under control of the brief options. In both cases maplevel records the error using seterr but does not signal the error in the standard manner. The reason for this is that an error encountered with one directory does not imply maplevel will not be successful in another branch of tree hierarchy. ln is increased by one and maplevel returns normally.