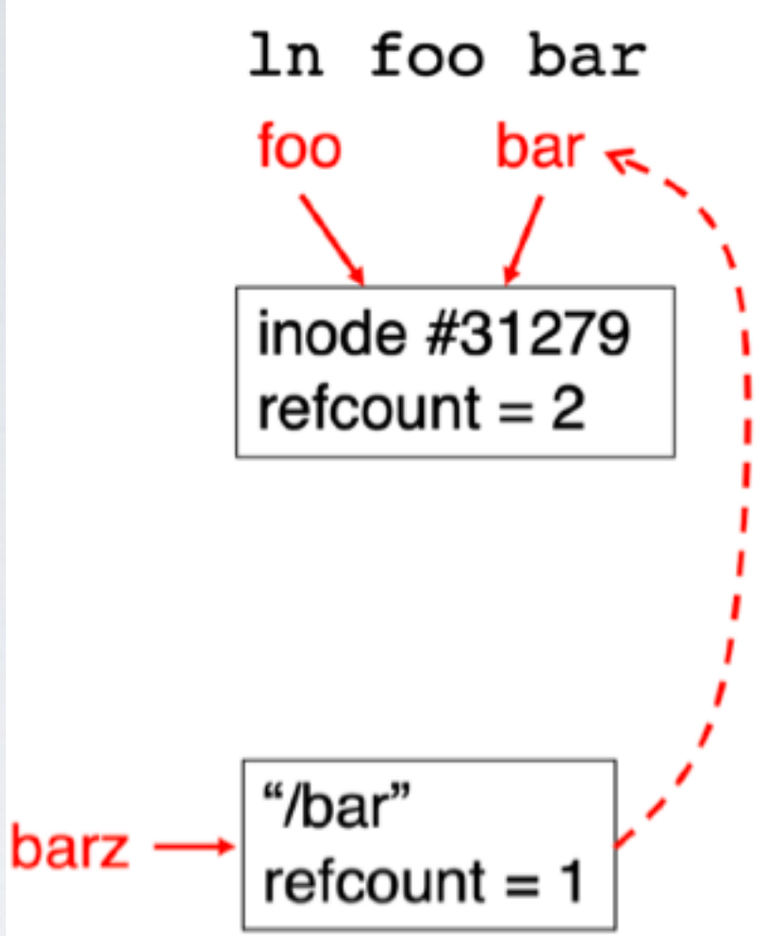
Hard and Soft Links (synonyms)



More than one dir entry can refer to a given file

- Hard link creates a synonym for file
- Unix stores count of pointers ("hard links") to inode
- If one of the links is removed (e.g., rm), the data are still accessible through any other link that remains
- If all links are removed, the space occupied by the data is freed

Soft symbolic links = synonyms for names

- Point to a file/dir name, but object can be deleted from underneath it (or never exist)
- Unix implements like directories: inode has special "symlink" bit set and contains name of link target
- When the file system encounters a soft link it automatically translates it (if possible).

File Buffer Cache

Applications exhibit significant locality for reading and writing files

➡ Idea : cache file blocks in memory to capture locality
Called the file buffer cache

- Cache is system wide, used and shared by all processes
- Reading from the cache makes a disk perform like memory
- Even a small cache can be very effective

◉ Issues

- The file buffer cache competes with VM (tradeoff here)
- Like VM, it has limited size
- Need replacement algorithms again (LRU usually used)