NAME
     bread - Buffered reads.

SYNOPSIS
     #include <bread.h>

     bread (brbuf,ubuf,n)
          char *ubuf;   /*Buffer where user wants to read into.*/
          struct BREAD *brbuf;   /*Buffer used by bread.*/
          int n;   /*Number of bytes to be read.*/

     bropen (filename,brbuf,size)
          char *filename;   /*File to be opened.*/
          struct BREAD *brbuf;   /*Buffer set up by bropen.*/
          int size;   /*Size of area in brbuf actually
                                     used for character buffering.*/

     brsetup (brbuf,fdes,size)
          struct BREAD *brbuf;   /*Buffer to be set up.*/
          int fdes;   /*File descriptor of file to be
                                     buffer read.*/
          int size;   /*Size of area in brbuf actually
                                     used for character buffering.*/

     brlseek (brbuf,offset,ptrname)
          struct BREAD *brbuf;   /*Buffer describing file on which
                                     seek is to be done.*/
          long offset;   /*Same as in lseek sys call.*/
          int ptrname;   /*Same as in lseek sys call.*/

     long brtell (brbuf)
          struct BREAD *brbuf;

     brclose (brbuf)
          struct BREAD *brbuf;

DESCRIPTION
     NOTE: When dealing with new programs consider Standard I/O
     first.

     Bread performs buffered reads on the file described by brbuf.
     Brbuf has the following format:

        struct BREAD{   /*See bread.h file*/
         int br_fildes;   Read descriptor of file.
         char *br_next;   Next valid character in buffer.
         char *br_last;   Last valid character in buffer.
         int br_bufsize;   Size of br_buffer passed by
                                         user in bytes.
         char br_buffer[BR_BUFFER_SIZ]; Actual character buffer.
                                         (size defined by user)

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};
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When bread is called, if there are less than n characters in
br_buffer, these characters are passed to the user then a read of
a buffer full is done. If the read is not successful the charac-
ters passed to the user are retrieved back to br_buffer and -1 is
returned. This is useful when a read (say from a pipe) may be
interrupted by a signal. In order to do the retrieval n is res-
tricted to be less than the size of br_buffer as specified by the
user.   If it is not, a -2 is returned. If successful, bread re-
turns the number of characters actually passed to the user's
buffer. This may be less than n if an end of file is reached.

Bropen opens filename for reading and saves its descriptor in
brbuf. It also saves the size of the area in brbuf actually used
for buffered characters. This allows the user to specify the
size most suitable for the application (usually 512). Other
variables in brbuf are set up properly for use with bread.   Bro-
pen returns the return from the open system call.

Brsetup sets up. Brbuf the same as bropen but instead of opening
the file it gets passed the descriptor of a file that is already
opened for reading or reading and writing. It returns the
descriptor.

Brlseek permits the user to do a lseek on a file that is being
read with bread. It discards any characters that may be buffered
in br_buffer and then does the requested seek. Note that the
seek is done to the actual place requested and therefore some ef-
ficiency may be lost when seeking on a disk file to a non multi-
ple of 512 when the size of br_buffer has been specified to be
512; when the next bread occurs 512 bytes will be read into
br_buffer but they will overlap two physical blocks and therefore
causes two disk accesses. Brlseek returns the result of the
lseek.

Brtell returns to the user the position in the file described by
brbuf of the next character that can be read using bread. The
actual character may be still in the file (if br_buffer is empty)
or in br_buffer. A -1 is returned when the tell system call re-
turns -1.

Brclose closes the file described by descriptor in br_fildes,
loads -1 into br_fildes and discards any characters in br_buffer.
It returns the result of the close system call.

FILES
     /usr/include/bread.h

LIBRARY
     /lib/lib1.a

SEE ALSO

    open(2),close(2),lseek(2),bopnclos(3L),bwrite(3L),fread(3)

DIAGNOSTICS

    bread   - returns -1 if read sys call returns -1.
                    returns -2 if trying to read more than the number of
                    characters that fit into br_buffer.
    bropen - returns result of open sys call.
    brlseek - returns result of lseek sys call.
    brtell - returns -1 if tell sys call fails.
    brclose - returns result of close sys call.