Rocky Enterprise Linux 9.2 Manual Pages on command 'bsearch.3'

$ man bsearch.3

BSEARCH(3)   Linux Programmer's Manual   BSEARCH(3)

NAME

    bsearch - binary search of a sorted array

SYNOPSIS

    #include <stdlib.h>

    void *bsearch(const void *key, const void *base,

            size_t nmemb, size_t size,

            int (*compar)(const void *, const void *));

DESCRIPTION

    The bsearch() function searches an array of nmemb objects, the initial

    member of which is pointed to by base, for a member that matches the

    object pointed to by key.   The size of each member of the array is

    specified by size.

    The contents of the array should be in ascending sorted order according

    to the comparison function referenced by compar. The compar routine is

    expected to have two arguments which point to the key object and to an

    array member, in that order, and should return an integer less than,

    equal to, or greater than zero if the key object is found, respec?

tively, to be less than, to match, or be greater than the array member.

RETURN VALUE

The bsearch() function returns a pointer to a matching member of the array, or NULL if no match is found. If there are multiple elements that match the key, the element returned is unspecified.

ATTRIBUTES

For an explanation of the terms used in this section, see at‐tributes(7).

??

?Interface ? Attribute   ? Value   ?

???

?bsearch() ? Thread safety ? MT-Safe ?

???

CONFORMING TO

POSIX.1-2001, POSIX.1-2008, C89, C99, SVr4, 4.3BSD.

EXAMPLES

The example below first sorts an array of structures using qsort(3), then retrieves desired elements using bsearch().

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
struct mi {
   int nr;
   char *name;
} months[] = {
   { 1, "jan" }, { 2, "feb" }, { 3, "mar" }, { 4, "apr" },
   { 5, "may" }, { 6, "jun" }, { 7, "jul" }, { 8, "aug" },
   { 9, "sep" }, {10, "oct" }, {11, "nov" }, {12, "dec" }
};
#define nr_of_months (sizeof(months)/sizeof(months[0]))
static int
compmi(const void *m1, const void *m2)
{
```

```c
       const struct mi *mi1 = m1;

       const struct mi *mi2 = m2;

       return strcmp(mi1->name, mi2->name);

   }

   int

   main(int argc, char **argv)

   {

       qsort(months, nr_of_months, sizeof(months[0]), compmi);

       for (int i = 1; i < argc; i++) {

           struct mi key;

           struct mi *res;

           key.name = argv[i];

           res = bsearch(&key, months, nr_of_months,

                   sizeof(months[0]), compmi);

           if (res == NULL)

               printf("'%s': unknown month\n", argv[i]);

           else

               printf("%s: month #%d\n", res->name, res->nr);

       }

       exit(EXIT_SUCCESS);

   }
```

SEE ALSO

    hsearch(3), lsearch(3), qsort(3), tsearch(3)

COLOPHON

    This page is part of release 5.10 of the Linux man-pages project. A

    description of the project, information about reporting bugs, and the

    latest   version   of   this page, can   be   found   at

    https://www.kernel.org/doc/man-pages/.

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