# libft

Generated by Doxygen 1.8.16

# 1 libft

*This project is part of the official curriculum at School 42.*

### 1.0.1 Overview

- Official instructions
- The task is to recreate various standard C library functions, as well as additional useful functions.
- Documentation ( html, pdf) generated with Doxygen.
- The project is consistent with the Norme, the code standard accepted at *School 42*.
- Use `make` to compile the library and include in projects with
  `#include "libft.h"`
- This project has been tested with Moulitest.

### 1.0.2 Acknowledgements

My thanks go to yyang42 for making Moulitest freely available online, to the entire team behind School 42 and its Moscow branch, to my fellow students for fruitful discussions, as well as to creators and maintainers of Doxygen.

# 2 Data Structure Index

## 2.1 Data Structures

Here are the data structures with brief descriptions:



# 3 File Index

## 3.1 File List

Here is a list of all documented files with brief descriptions:

# 4 Data Structure Documentation

## 4.1 s_list Struct Reference

`#include <libft.h>`

### Data Fields

- void * content
- size_t content_size
- struct s_list * next

### 4.1.1 Detailed Description

Represent links of a list.

Definition at line 34 of file libft.h.

### 4.1.2 Field Documentation

#### 4.1.2.1 content `s_list::content`

The data contained in the link. The `void *` allows to store any kind of data.

Definition at line 36 of file libft.h.

Referenced by ft_lstdel(), ft_lstdelone(), and ft_lstnew().

#### 4.1.2.2 content_size `s_list::content_size`

The size of the data stored. The `void *` type doesn't allow you to know the size of the pointed data, as a consequence, it is necessary to save its size. For instance, the size of the string `"42"` is 3 bytes and the 32 bits integer 42 has a size of 4 bytes.

Definition at line 37 of file libft.h.

Referenced by ft_lstdel(), ft_lstdelone(), and ft_lstnew().

#### 4.1.2.3 next `s_list::next`

The next link's address or `NULL` if it's the last link.

Definition at line 38 of file libft.h.

Referenced by ft_lstappend(), ft_lstdel(), ft_lstdelone(), ft_lstiter(), ft_lstlast(), ft_lstmap(), and ft_lstnew().

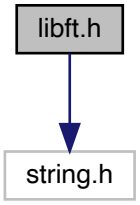
The documentation for this struct was generated from the following file:

- libft.h

# 5 File Documentation

## 5.1 libft.h File Reference

```
#include <string.h>
```
Include dependency graph for libft.h:




### Data Structures

- struct s_list

### Typedefs

- typedef struct s_list **t_list**

### Functions

- int ft_abs (int a)
- int ft_atoi (const char *str)
- void ft_bzero (void *s, size_t n)
- void * ft_calloc (size_t count, size_t size)
- int ft_isalnum (int c)
- int ft_isalpha (int c)
- int ft_isascii (int c)
- int ft_isdigit (int c)
- int ft_isprint (int c)
- int ft_isspace (int c)
- char * ft_itoa (int n)
- void ft_lstadd (t_list **alst, t_list *new)
- void ft_lstappend (t_list **alst, t_list *new)
- void ft_lstdel (t_list **alst, void(*del)(void *, size_t))
- void ft_lstdelone (t_list **alst, void(*del)(void *, size_t))
- void ft_lstiter (t_list *lst, void(*f)(t_list *elem))
- t_list * ft_lstlast (t_list *head)
- t_list * ft_lstmap (t_list *lst, t_list *(*f)(t_list *elem))
- t_list * ft_lstnew (void const *content, size_t content_size)
- int ft_max (int a, int b)
- void * ft_memalloc (size_t size)
- void * ft_memccpy (void *dst, const void *src, int c, size_t n)
- void * ft_memchr (const void *s, int c, size_t n)
- int ft_memcmp (const void *s1, const void *s2, size_t n)
- void * ft_memcpy (void *dst, const void *src, size_t n)
- void ft_memdel (void **ap)
- void * ft_memmove (void *dst, const void *src, size_t n)
- void * ft_memset (void *b, int c, size_t len)
- int ft_min (int a, int b)
- int ft_power (int num, unsigned int exponent)
- void ft_putchar (char c)
- void ft_putchar_fd (char c, int fd)
- void ft_putendl (char const *s)
- void ft_putendl_fd (char const *s, int fd)
- void ft_putnbr (int n)
- void ft_putnbr_fd (int n, int fd)
- void ft_putnstr (char *s, size_t n)
- void ft_putnstr_fd (char *s, size_t n, int fd)
- int ft_puts (char const *s)
- void ft_putstr (char const *s)
- void ft_putstr_fd (char const *s, int fd)
- int ft_sqrt (int num)
- char * ft_strcapitalize (const char *str)
- char * ft_strcat (char *s1, const char *s2)
- int ft_strcchr (char const *str, char c)
- char * ft_strchr (const char *s, int c)
- void ft_strclr (char *s)
- int ft_strcmp (const char *s1, const char *s2)
- char * ft_strcpy (char *dst, const char *src)
- void ft_strdel (char **as)
- char * ft_strdup (const char *s1)
- int ft_strequ (const char *s1, const char *s2)
- int ft_strintab (const char *str, char *const tab[ ])

- void ft_striter (char *s, void(*f)(char *))
- void ft_striteri (char *s, void(*f)(unsigned int, char *))
- char * ft_strjoin (const char *s1, const char *s2)
- char ft_strlast (char const *str)
- size_t ft_strlcat (char *dst, const char *src, size_t dstsize)
- size_t ft_strlcpy (char *dst, const char *src, size_t maxlen)
- size_t ft_strlen (const char *s)
- char * ft_strmap (char const *s, char(*f)(char))
- char * ft_strmapi (char const *s, char(*f)(unsigned int, char))
- char * ft_strncat (char *s1, const char *s2, size_t n)
- int ft_strncmp (const char *s1, const char *s2, size_t n)
- char * ft_strncpy (char *dst, const char *src, size_t len)
- char * ft_strndup (const char *s1, size_t len)
- int ft_strnequ (char const *s1, char const *s2, size_t n)
- char * ft_strnew (size_t size)
- char * ft_strnstr (const char *haystack, const char *needle, size_t len)
- char * ft_strrchr (const char *s, int c)
- char * ft_strrev (const char *s)
- char ** ft_strsplit (char const *str, char delim)
- char * ft_strstr (const char *haystack, const char *needle)
- char * ft_strsub (char const *s, unsigned int start, size_t len)
- char * ft_strtrim (char const *s)
- int ft_tolower (int c)
- int ft_toupper (int c)

### 5.1.1 Function Documentation

#### 5.1.1.1 ft_abs() `int ft_abs ( int a )`

Returns the absolute value of the argument.

**Note**

This function is only needed, since "The Norme" (the code standard at School 42) forbids the use of parametrized macros.

**Parameters**

| | | |
|---|---|---|
| in | *a* | The integer to take an absolute value of. |

Definition at line 20 of file ft_abs.c.

```
21 {
22     return (a < 0 ? -a : a);
23 }
```

#### 5.1.1.2 ft_atoi() `int ft_atoi ( const char * str )`

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 20 of file ft_atoi.c.

```
21 {
22     int         i;
23     int         num;
24     int         is_neg;
25
26     i = 0;
27     is_neg = 0;
28     num = 0;
29     while (str[i] == ' ' || str[i] == '\t' || str[i] == '\n' || str[i] == '\v'
30     || str[i] == '\f' || str[i] == '\r')
31         i++;
32     if (str[i] == '-')
33         is_neg = 1;
34     if (str[i] == '-' || str[i] == '+')
35         i++;
36     while (str[i] >= '0' && str[i] <= '9')
37     {
38         num *= 10;
39         num += (str[i] - '0');
40         i++;
41     }
42     return (is_neg ? -num : num);
43 }
```

#### 5.1.1.3 ft_bzero() `void ft_bzero (`

```
void * s,
size_t n )
```

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_bzero.c.

```
20 {
21     size_t          i;
22     unsigned char   *s1;
23
24     i = 0;
25     s1 = (unsigned char *)s;
26     while (i < n)
27         s1[i++] = 0;
28 }
```

Referenced by ft_calloc().

#### 5.1.1.4 ft_calloc() `void* ft_calloc (`

```
size_t count,
size_t size )
```

Mimic behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 20 of file ft_calloc.c.

```
21 {
22     void    *mem;
23
24     mem = malloc(count * size);
25     if (mem == NULL)
26         return (NULL);
27     ft_bzero(mem, count * size);
28     return (mem);
29 }
```

References ft_bzero().

Here is the call graph for this function:


#### 5.1.1.5 ft_isalnum() `int ft_isalnum ( int c )`

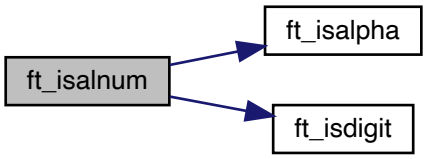
Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_isalnum.c.

```
20 {
21     return (ft_isalpha(c) || ft_isdigit(c));
22 }
```

References ft_isalpha(), and ft_isdigit().

Here is the call graph for this function:




#### 5.1.1.6 ft_isalpha() `int ft_isalpha ( int c )`

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_isalpha.c.

```
20 {
21     if (c >= 'a' && c <= 'z')
22         return (1);
23     else if (c >= 'A' && c <= 'Z')
24         return (1);
25     else
26         return (0);
27 }
```

Referenced by ft_isalnum().

#### 5.1.1.7 ft_isascii() int ft_isascii ( int c )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_isascii.c.

```
20 {
21     return (c >= 0 && c <= 127);
22 }
```

#### 5.1.1.8 ft_isdigit() int ft_isdigit ( int c )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_isdigit.c.

```
20 {
21     if (c >= '0' && c <= '9')
22         return (1);
23     else
24         return (0);
25 }
```

Referenced by ft_isalnum().

#### 5.1.1.9 ft_isprint() int ft_isprint ( int c )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_isprint.c.

```
20 {
21     return (c >= 040 && c <= 0176);
22 }
```

#### 5.1.1.10 ft_isspace() int ft_isspace ( int c )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_isspace.c.

```
20 {
21     return ((c >= 9 && c <= 13) || c == ' ');
22 }
```

#### 5.1.1.11 ft_itoa() char* ft_itoa ( int n )

Allocate (with malloc) and returns a “fresh” string ending with '\0' representing the integer n given as argument. Negative numbers must be supported. If the allocation fails, the function returns NULL.

**Parameters**

| | |
|---|---|
| *n* | The integer to be transformed into a string. |

**Returns**

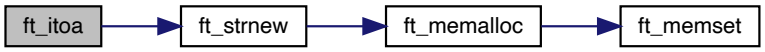
The string representing the integer passed as argument.

Definition at line 36 of file ft_itoa.c.

```
37 {
38     char    *str;
39     size_t  len;
40     int     tmp;
41
42     len = ft_int_len(n);
43     tmp = n < 0 ? n : -n;
44     if (n < 0)
45         len++;
46     if (!(str = ft_strnew(len)))
47         return (NULL);
48     while (tmp)
49     {
50         str[--len] = -(tmp % 10) + '0';
51         tmp /= 10;
52     }
53     if (n < 0)
54         str[--len] = '-';
55     return (str);
56 }
```

References ft_strnew().

Here is the call graph for this function:




#### 5.1.1.12 ft_lstadd() `void ft_lstadd ( t_list ** alst, t_list * new )`

Adds the element new at the beginning of the list.

**Parameters**

| | |
|---|---|
| *alst* | The address of a pointer to the first link of a list. |
| *new* | The link to add at the beginning of the list. |

Definition at line 21 of file ft_lstadd.c.

```
22 {
23     if (!alst || !new)
24         return ;
```

```
25      new->next = *alst;
26      *alst = new;
27  }
```

#### 5.1.1.13 ft_lstappend() `void ft_lstappend (`

```
t_list ** alst,
t_list * new )
```

Adds the element new at the end of the list.

**Parameters**

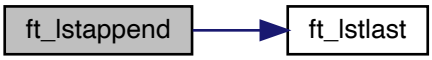
| | |
|---|---|
| *alst* | The address of a pointer to the first link of a list. |
| *new* | The link to add at the beginning of the list. |

Definition at line 21 of file ft_lstappend.c.

```
22  {
23      t_list    *last;
24
25      if (!alst || !new)
26          return ;
27      if (!*alst)
28      {
29          *alst = new;
30          return ;
31      }
32      last = ft_lstlast(*alst);
33      last->next = new;
34  }
```

References ft_lstlast(), and s_list::next.

Here is the call graph for this function:




#### 5.1.1.14 ft_lstdel() `void ft_lstdel (`

```
t_list ** alst,
void(*)(void *, size_t) del )
```

Takes as a parameter the address of a pointer to a link and frees the memory of this link and every successors of that link using the functions `del` and `free`. Finally the pointer to the link that was just freed must be set to `NULL` (quite similar to the function `memdel`).

**Parameters**

| | |
|---|---|
| *alst* | The address of a pointer to the first link of a list that needs to be freed. |
| *del* | The address of a function to apply to each link of a list. |

Definition at line 27 of file ft_lstdel.c.

```
28 {
29     t_list *head;
30     t_list *new_head;
31
32     if (!alst || !(*alst) || !del)
33         return ;
34     head = *alst;
35     while (head)
36     {
37         new_head = head->next;
38         del(head->content, head->content_size);
39         free(head);
40         head = new_head;
41     }
42     *alst = NULL;
43 }
```

References s_list::content, s_list::content_size, and s_list::next.

#### 5.1.1.15 ft_lstdelone() `void ft_lstdelone (`

```
t_list ** alst,
void(*)(void *, size_t) del )
```

Takes as a parameter a link's pointer address and frees the memory of the link's content using the function `del` given as a parameter, then frees the link's memory using `free`. The memory of next must not be freed under any circumstance. Finally, the pointer to the link that was just freed must be set to `NULL` (quite similar to the function `memdel`).

**Parameters**

| | |
|---|---|
| *alst* | The adress of a pointer to a link that needs to be freed. |
| *del* | The address of a function to apply to each link of a list. |

Definition at line 27 of file ft_lstdelone.c.

```
28 {
29     t_list    *link;
30
31     if (!alst || !(*alst) || !del || !(*del))
32         return ;
33     link = *alst;
34     link->next = NULL;
35     del(link->content, link->content_size);
36     free(link);
37     *alst = NULL;
38 }
```

References s_list::content, s_list::content_size, and s_list::next.

#### 5.1.1.16 ft_lstiter() `void ft_lstiter (`

```
t_list * lst,
void(*)(t_list *elem) f )
```

Iterates the list lst and applies the function `f` to each link.

**Parameters**

| | |
|---|---|
| *lst* | A pointer to the first link of a list. |
| *f* | The address of a function to apply to each link of a list. |

Definition at line 21 of file ft_lstiter.c.

```
22 {
23     if (!f)
24         return ;
25     while (lst)
26     {
27         f(lst);
28         lst = lst->next;
29     }
30 }
```

References s_list::next.

#### 5.1.1.17 ft_lstlast() t_list* ft_lstlast ( t_list * *lst* )

Return last element of the list.

**Parameters**

| | |
|---|---|
| *lst* | A pointer's to the first link of a list. |

**Returns**

The last link of the list.

Definition at line 21 of file ft_lstlast.c.

```
22 {
23     if (!lst)
24         return (NULL);
25     while (lst->next)
26         lst = lst->next;
27     return (lst);
28 }
```

References s_list::next.

Referenced by ft_lstappend().

#### 5.1.1.18 ft_lstmap() t_list* ft_lstmap ( t_list * *lst*, t_list *(*)(t_list *elem) *f* )

Iterates a list lst and applies the function `f` to each link to create a "fresh" list (using `malloc`) resulting from the successive applications of f. If the allocation fails, the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *lst* | A pointer's to the first link of a list. |
| *f* | The address of a function to apply to each link of a list. |

**Returns**

The new list.

**Remarks**

This function fails if `f` returns `NULL`;

Definition at line 26 of file ft_lstmap.c.

```
27 {
28     t_list    *new;
29     t_list    *tmp;
30
31     if (!lst)
32         return (NULL);
33     tmp = f(lst);
34     new = tmp;
35     while (lst->next)
36     {
37         lst = lst->next;
38         tmp->next = f(lst);
39         tmp = tmp->next;
40     }
41     return (new);
42 }
```

References s_list::next.

#### 5.1.1.19 ft_lstnew() `t_list* ft_lstnew ( void const * content, size_t content_size )`

Allocates (with `malloc`) and returns a "fresh" link. The variables content and content_size of the new link are initialized by copy of the parameters of the function. If the parameter `content` is `NULL`, the variable `content` is initialized to `NULL` and the variable `content_size` is initialized to `0` even if the parameter `content_size` isn't. The variable `next` is initialized to `NULL`. If the allocation fails, the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *content* | The content to put in the new link. |
| *content_size* | The size of the content of the new link. |

**Returns**

The new link.

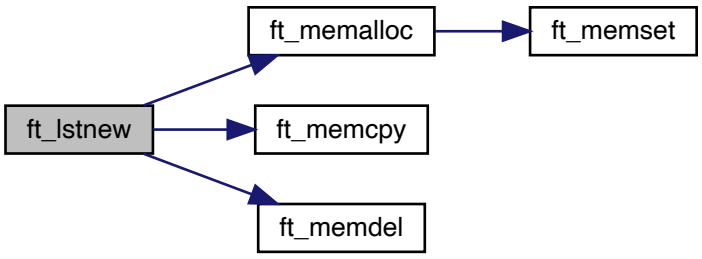
Definition at line 29 of file ft_lstnew.c.

```
30 {
31     t_list    *link;
32
33     if (!(link = (t_list *)malloc(sizeof(t_list))))
```

```
34          return (NULL);
35      if (content)
36      {
37          if (!(link->content = ft_memalloc(content_size)))
38          {
39              ft_memdel((void **)&link);
40              return (NULL);
41          }
42          ft_memcpy(link->content, content, content_size);
43          link->content_size = content_size;
44      }
45      else
46      {
47          link->content = NULL;
48          link->content_size = 0;
49      }
50      link->next = NULL;
51      return (link);
52  }
```

References s_list::content, s_list::content_size, ft_memalloc(), ft_memcpy(), ft_memdel(), and s_list::next.

Here is the call graph for this function:




#### 5.1.1.20 ft_max() `int ft_max (`

```
int a,
int b )
```

Returns the maximum of two integer arguments.

**Note**

This function is only needed, since "The Norme" (the code standard at School 42) forbids the use of parametrized macros.

**Parameters**

| | | |
|---|---|---|
| in | *a* | The first integer to compare. |
| in | *b* | The second integer to compare. |

**Returns**

The larger of the two integers.

Definition at line 22 of file ft_max.c.

```
23 {
24     return (a > b ? a : b);
25 }
```

#### 5.1.1.21 ft_memalloc() `void* ft_memalloc ( size_t size )`

Allocates (with `malloc`) and returns a “fresh” memory area. The memory allocated is initialized to 0. If the allocation fails, the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *size* | The size of the memory that needs to be allocated. |

**Returns**

The allocated memory area.

Definition at line 24 of file ft_memalloc.c.

```
25 {
26     char    *mem;
27
28     mem = malloc(size);
29     if (mem == NULL)
30         return (NULL);
31     ft_memset(mem, 0, size);
32     return (mem);
33 }
```

References ft_memset().

Referenced by ft_lstnew(), ft_strnew(), and ft_strsplit().

Here is the call graph for this function:

#### 5.1.1.22 ft_memccpy() void* ft_memccpy (

```
void * dst,
const void * src,
int c,
size_t n )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_memccpy.c.

```
20 {
21     size_t          i;
22     unsigned char   *s1;
23     unsigned char   *s2;
24     unsigned char   c1;
25
26     s1 = (unsigned char *)dst;
27     s2 = (unsigned char *)src;
28     c1 = (unsigned char)c;
29     i = 0;
30     while (i < n)
31     {
32         s1[i] = s2[i];
33         if (s1[i] == c1)
34             return (s1 + i + 1);
35         i++;
36     }
37     return (NULL);
38 }
```

#### 5.1.1.23 ft_memchr() void* ft_memchr (

```
const void * s,
int c,
size_t n )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_memchr.c.

```
20 {
21     size_t          i;
22     unsigned char   *s1;
23     unsigned char   c1;
24
25     i = 0;
26     s1 = (unsigned char *)s;
27     c1 = (unsigned char)c;
28     while (i < n)
29     {
30         if (s1[i] == c1)
31             return (s1 + i);
32         i++;
33     }
34     return (NULL);
35 }
```

#### 5.1.1.24 ft_memcmp() int ft_memcmp (

```
const void * s1,
const void * s2,
size_t n )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_memcmp.c.

```
20 {
21     unsigned char   *str1;
22     unsigned char   *str2;
```

```
23      size_t          i;
24
25      i = 0;
26      str1 = (unsigned char *)s1;
27      str2 = (unsigned char *)s2;
28      while (i < n)
29      {
30          if (str1[i] - str2[i])
31              return (str1[i] - str2[i]);
32          i++;
33      }
34      return (0);
35  }
```

#### 5.1.1.25 ft_memcpy() void* ft_memcpy (

```
            void * dst,
            const void * src,
            size_t n )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_memcpy.c.

```
20  {
21      size_t          i;
22      unsigned char   *dst1;
23      unsigned char   *src1;
24
25      if (!dst && !src)
26          return (NULL);
27      i = 0;
28      dst1 = (unsigned char *)dst;
29      src1 = (unsigned char *)src;
30      while (i < n)
31      {
32          dst1[i] = src1[i];
33          i++;
34      }
35      return (dst);
36  }
```

Referenced by ft_lstnew(), and ft_strlcpy().

#### 5.1.1.26 ft_memdel() void ft_memdel (

```
            void ** ap )
```

Takes as a parameter the address of a memory area that needs to be freed with free, then puts the pointer to NULL.

**Parameters**

| | |
|---|---|
| *ap* | A pointer's address that needs its memory freed and set to NULL. |

Definition at line 22 of file ft_memdel.c.

```
23  {
24      if (!ap || !(*ap))
25          return ;
26      free(*ap);
27      *ap = 0;
28  }
```

Referenced by ft_lstnew(), and ft_strdel().

#### 5.1.1.27 ft_memmove() void* ft_memmove (

```
void * dst,
const void * src,
size_t n )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_memmove.c.

```
20 {
21     unsigned char   *s1;
22     unsigned char   *s2;
23
24     if (!dst && !src)
25         return (NULL);
26     s1 = (unsigned char *)dst;
27     s2 = (unsigned char *)src;
28     while (n > 0)
29     {
30         if (s1 < s2)
31             *(s1++) = *(s2++);
32         else
33             s1[n - 1] = s2[n - 1];
34         n--;
35     }
36     return (dst);
37 }
```

#### 5.1.1.28 ft_memset() void* ft_memset (

```
void * b,
int c,
size_t len )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_memset.c.

```
20 {
21     unsigned char   *s;
22     unsigned char   c1;
23
24     s = (unsigned char *)b;
25     c1 = (unsigned char)c;
26     while (len-- > 0)
27     {
28         *s = c1;
29         s++;
30     }
31     return (b);
32 }
```

Referenced by ft_memalloc(), and ft_strclr().

#### 5.1.1.29 ft_min() int ft_min (

```
int a,
int b )
```

Returns the minimum of two integer arguments.

**Note**

This function is only needed, since "The Norme" (the code standard at School 42) forbids the use of parametrized macros.

**Parameters**

| | | |
|---|---|---|
| in | *a* | The first integer to compare. |
| in | *b* | The second integer to compare. |

**Returns**

The smaller of the two integers.

Definition at line 22 of file ft_min.c.

```
23 {
24     return (a < b ? a : b);
25 }
```

#### 5.1.1.30 ft_power() `int ft_power (`

```
int num,
unsigned int exponent )
```

Raises a number to a given power.

**Parameters**

| | |
|---|---|
| *num* | The base. |
| *exponent* | The exponent. |

**Returns**

The result or `0` if an integer overflow occurred.

Definition at line 23 of file ft_power.c.

```
24 {
25     long long result;
26
27     result = 1;
28     while (exponent-- > 0)
29         result *= num;
30     if (result > INT_MAX)
31         return (0);
32     else
33         return ((int)result);
34 }
```

#### 5.1.1.31 ft_putchar() `void ft_putchar (`

```
char c )
```

Outputs the character `c` to the standard output.

**Parameters**

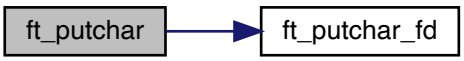
| | |
|---|---|
| *c* | The character to output. |

Definition at line 21 of file ft_putchar.c.

```
22 {
23     ft_putchar_fd(c, 1);
24 }
```

References ft_putchar_fd().

Here is the call graph for this function:




#### 5.1.1.32 ft_putchar_fd() `void ft_putchar_fd (`

```
char c,
int fd )
```

Outputs the char `c` to the file descriptor `fd`.

**Parameters**

| | |
|---|---|
| *c* | The character to output. |
| *fd* | The file descriptor. |

Definition at line 22 of file ft_putchar_fd.c.

```
23 {
24     write(fd, &c, 1);
25 }
```

Referenced by ft_putchar(), ft_putendl_fd(), and ft_putnbr_fd().

#### 5.1.1.33 ft_putendl() `void ft_putendl (`

```
char const * s )
```

Outputs the string `s` to the standard output followed by a `'\n'`.

**Parameters**

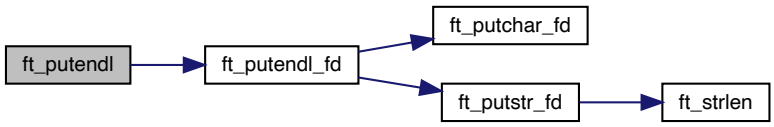
| | |
|---|---|
| *s* | The string to output. |

Definition at line 20 of file ft_putendl.c.

```
21 {
22     ft_putendl_fd(s, 1);
23 }
```

References ft_putendl_fd().

Here is the call graph for this function:




#### 5.1.1.34 ft_putendl_fd()

```
void ft_putendl_fd (
        char const * s,
        int fd )
```

Outputs the string `s` to the file descriptor `fd` followed by a `'\n'`.

**Parameters**

| | |
|---|---|
| *s* | The string to output. |
| *fd* | The file descriptor. |

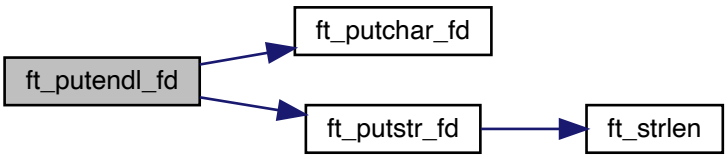
Definition at line 21 of file ft_putendl_fd.c.

```
22 {
23     ft_putstr_fd(s, fd);
24     ft_putchar_fd('\n', fd);
25 }
```

References ft_putchar_fd(), and ft_putstr_fd().

Referenced by ft_putendl().

Here is the call graph for this function:



#### 5.1.1.35 ft_putnbr() `void ft_putnbr ( int n )`

Outputs the integer `n` to the standard output.

**Parameters**

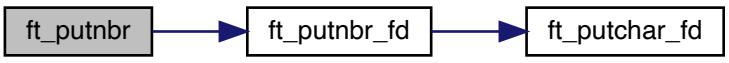
| | |
|---|---|
| *n* | The integer to output. |

Definition at line 20 of file ft_putnbr.c.

```
21 {
22     ft_putnbr_fd(n, 1);
23 }
```

References ft_putnbr_fd().

Here is the call graph for this function:




#### 5.1.1.36 ft_putnbr_fd() `void ft_putnbr_fd ( int n, int fd )`

Outputs the integer `n` to the file descriptor `fd`.

**Parameters**

| | |
|---|---|
| *n* | The integer to print. |
| *fd* | The file descriptor. |

Definition at line 22 of file ft_putnbr_fd.c.

```
23 {
24     if (n == INT_MIN)
25     {
26         ft_putnbr_fd(n / 10, fd);
27         ft_putnbr_fd(-(n % 10), fd);
28     }
29     else if (n < 0)
30     {
31         ft_putchar_fd('-', fd);
32         ft_putnbr_fd(-n, fd);
33     }
34     else if (n > 9)
35     {
36         ft_putnbr_fd(n / 10, fd);
37         ft_putchar_fd(n % 10 + '0', fd);
38     }
39     else
```

```
40          ft_putchar_fd(n % 10 + '0', fd);
41 }
```

References ft_putchar_fd().

Referenced by ft_putnbr().

Here is the call graph for this function:


#### 5.1.1.37 ft_putnstr() `void ft_putnstr (`

```
char * s,
size_t n )
```

Outputs the first n characters of the string `s` to the standard output.

**Parameters**

| | |
|---|---|
| *s* | The string, the characters of which to output. |
| *n* | The number of characters to output. |

**Remarks**

If `s` contains less than `n` characters, behaviour is undefined.

Definition at line 23 of file ft_putnstr.c.

```
24 {
25     write(1, s, n);
26 }
```

#### 5.1.1.38 ft_putnstr_fd() `void ft_putnstr_fd (`

```
char * s,
size_t n,
int fd )
```

Outputs the first n characters of the string `s` to the file descriptor `fd`.

**Parameters**

| | |
|---|---|
| *s* | The string, the characters of which to output. |
| *n* | The number of characters to output. |
| *fd* | The file descriptor. |

**Remarks**

If `s` contains less than `n` characters, behaviour is undefined.

Definition at line 24 of file ft_putnstr_fd.c.

```
25 {
26     write(fd, s, n);
27 }
```

#### 5.1.1.39 ft_puts() `int ft_puts ( const char * s )`

Replicates behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 20 of file ft_puts.c.

```
21 {
22     return (write(1, s, ft_strlen(s)));
23 }
```

References ft_strlen().

Here is the call graph for this function:


#### 5.1.1.40 ft_putstr() `void ft_putstr ( char const * s )`

Outputs the string `s` to the standard output.

**Parameters**

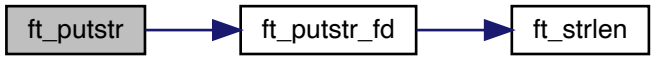
| | |
|---|---|
| *s* | The string to output. |

Definition at line 21 of file ft_putstr.c.

```
22 {
23     ft_putstr_fd(s, 1);
24 }
```

References ft_putstr_fd().

Here is the call graph for this function:




#### 5.1.1.41 ft_putstr_fd()

```
void ft_putstr_fd (
        char const * s,
        int fd )
```

Outputs the string `s` to the file descriptor `fd`.

**Parameters**

| | |
|---|---|
| *s* | The string to output. |
| *fd* | The file descriptor. |

Definition at line 22 of file ft_putstr_fd.c.

```
23 {
24     write(fd, s, ft_strlen(s));
25 }
```

References ft_strlen().

Referenced by ft_putendl_fd(), and ft_putstr().

Here is the call graph for this function:


#### 5.1.1.42 ft_sqrt()

```
int ft_sqrt (
        int num )
```

Computes an integer square root of a given number.

**Parameters**

| | |
|---|---|
| *num* | The number of which to take a square root. |

**Returns**

The integer square root, or `-1` if it doesn't exit.

Definition at line 19 of file ft_sqrt.c.

```
20 {
21     int factor;
22
23     if (num < 0 ||
24         (num % 2 == 0 && num % 4 != 0) ||
25         (num % 3 == 0 && num % 9 != 0))
26         return (-1);
27     factor = (num % 2) ? 1 : 0;
28     while (factor < num / 2)
29     {
30         if (factor * factor == num)
31             return (factor);
32         factor += 2;
33     }
34     return (-1);
35 }
```

#### 5.1.1.43 ft_strcapitalize() `char* ft_strcapitalize ( const char * s1 )`

Capitalizes all words (defined as stretches of alpha-numeric characters) in a `NULL`-terminated string and writes them to a newly allocated string.

Example: `ft_strcapitalize("My word IS 42about%8THEM")` returns `"My Word Is 42about%8them"`

**Parameters**

| | |
|---|---|
| *s1* | The string to capitalize. |

**Returns**

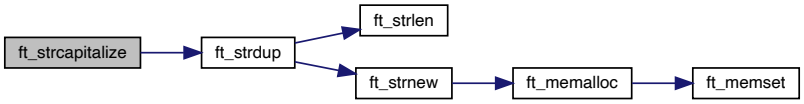
A duplicate of `str` in which all words have been capitalized. If `str` is a `NULL` pointer or allocation fails, `NULL` is returned.

Definition at line 49 of file ft_strcapitalize.c.

```
50 {
51     char    *s2;
52
53     if (!s1 || !(s2 = ft_strdup(s1)))
54         return (0);
55     while (scroll_to_word(&s2))
56         capitalize_word(&s2);
57     return (s2);
58 }
```

References ft_strdup().

Here is the call graph for this function:




#### 5.1.1.44 ft_strcat() `char* ft_strcat (`

```
char * s1,
const char * s2 )
```

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strcat.c.

```
20 {
21     size_t  i;
22     size_t  len;
23
24     len = ft_strlen(s1);
25     i = 0;
26     while (s2[i])
27     {
28         s1[len + i] = s2[i];
29         i++;
30     }
31     s1[len + i] = '\0';
32     return (s1);
33 }
```

References ft_strlen().

Referenced by ft_strjoin().

Here is the call graph for this function:


#### 5.1.1.45 ft_strcchr() `int ft_strcchr (`

```
char const * str,
char c )
```

Count the number of occurrences of a character in a string.

**Parameters**

| | |
|---|---|
| *str* | The string in which to search. |
| *c* | The character for which to search. |

**Returns**

The number of occurences.

Definition at line 22 of file ft_strcchr.c.

```
23 {
24     int count;
25
26     count = 0;
27     if (!str || !c)
28         return (-1);
29     while (*str)
30     {
31         if (*str == c)
32             count++;
33         str++;
34     }
35     return (count);
36 }
```

#### 5.1.1.46 ft_strchr() char* ft_strchr ( const char * s, int c )

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strchr.c.

```
20 {
21     size_t  i;
22
23     i = 0;
24     while (s[i])
25     {
26         if (s[i] == c)
27             return ((char *)(s + i));
28         i++;
29     }
30     if (c == 0)
31         return ((char *)(s + i));
32     else
33         return (NULL);
34 }
```

#### 5.1.1.47 ft_strclr() void ft_strclr ( char * s )

Sets every character of the string to the value `'\0'`.

**Parameters**

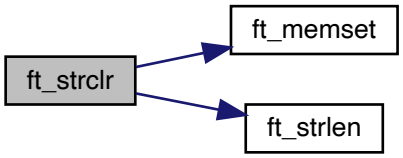
| | |
|---|---|
| *s* | The string that needs to be cleared. |

Definition at line 20 of file ft_strclr.c.

```
21 {
22     if (!s)
23         return ;
24     ft_memset(s, 0, ft_strlen(s));
25 }
```

References ft_memset(), and ft_strlen().

Here is the call graph for this function:




#### 5.1.1.48 ft_strcmp() int ft_strcmp ( const char * s1, const char * s2 )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_strcmp.c.

```
20 {
21     unsigned char   *s1u;
22     unsigned char   *s2u;
23 
24     s1u = (unsigned char *)s1;
25     s2u = (unsigned char *)s2;
26     while (*s1u || *s2u)
27     {
28         if (*s1u - *s2u)
29             return (*s1u - *s2u);
30         s1u++;
31         s2u++;
32     }
33     return (0);
34 }
```

#### 5.1.1.49 ft_strcpy() char* ft_strcpy ( char * dst, const char * src )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_strcpy.c.

```
20 {
21     size_t  i;
22 
23     i = 0;
24     while (src[i])
25     {
26         dst[i] = src[i];
27         i++;
28     }
29     dst[i] = 0;
30     return (dst);
31 }
```

Referenced by ft_strjoin().

#### 5.1.1.50 ft_strdel() `void ft_strdel (`

`char ** as )`

Takes as a parameter the address of a string that need to be freed with `free`, then sets its pointer to `NULL`.

**Parameters**

| | |
|---|---|
| *as* | The string's address that needs to be freed and its pointer set to `NULL`. |

Definition at line 22 of file ft_strdel.c.

```
23 {
24     ft_memdel((void **)as);
25 }
```

References ft_memdel().

Here is the call graph for this function:


#### 5.1.1.51 ft_strdup() `char* ft_strdup (`

`const char * s1 )`

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

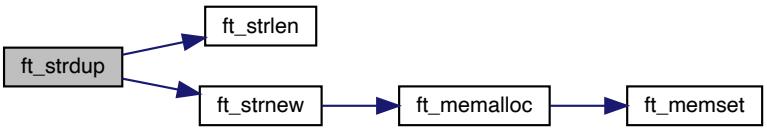
Definition at line 19 of file ft_strdup.c.

```
20 {
21     size_t  i;
22     char    *cpy;
23
24     if (!(cpy = ft_strnew(ft_strlen(s1))))
25         return (NULL);
26     i = 0;
27     while (s1[i])
28     {
29         cpy[i] = s1[i];
30         i++;
31     }
32     cpy[i] = 0;
33     return (cpy);
34 }
```

References ft_strlen(), and ft_strnew().

Referenced by ft_strcapitalize(), ft_strmap(), ft_strmapi(), and ft_strtrim().

Here is the call graph for this function:




#### 5.1.1.52 ft_strequ() `int ft_strequ (`

```
const char * s1,
const char * s2 )
```

Lexicographical comparison between `s1` and `s2` up to n characters or until a `'\0'` is reached. If the 2 strings are identical, the function returns `1`, or `0` otherwise.

**Parameters**

| | |
|---|---|
| *s1* | The first string to be compared. |
| *s2* | The second string to be compared. |

**Returns**

`1` or `0` according to if the 2 strings are identical or not.

Definition at line 24 of file ft_strequ.c.

```
25 {
26     if (!s1 && !s2)
27         return (1);
28     else if (!s1 || !s2)
29         return (0);
30     while (*s1 || *s2)
31     {
32         if (*s1 != *s2)
33             return (0);
34         s1++;
35         s2++;
36     }
37     return (1);
38 }
```

Referenced by ft_strintab().

#### 5.1.1.53 ft_strintab() `int ft_strintab (`

```
const char * str,
char *const tab[] )
```

Perform lexicographical comparison between a given string and strings contained in a `NULL`-terminated tab. If the tab contains an identical string, the function returns `1`, or `0` otherwise.

**Parameters**

| | |
|---|---|
| *str* | The string to search for. |
| *tab* | The NULL-terminated tab to search in. |

**Returns**

1 or 0 depending on whether the tab contains an identical string.

Definition at line 25 of file ft_strintab.c.

```
26 {
27     while (*tab)
28     {
29         if (ft_strequ(str, *tab))
30             return (1);
31         tab++;
32     }
33     return (0);
34 }
```

References ft_strequ().

Here is the call graph for this function:


#### 5.1.1.54 ft_striter() void ft_striter ( char * s, void(*)(char *) f )

Applies the function f to each character of the string passed as argument. Each character is passed by address to f to be modified if necessary.

**Parameters**

| | |
|---|---|
| *s* | The string to iterate. |
| *f* | The function to apply to each character of s. |

Definition at line 22 of file ft_striter.c.

```
23 {
24     if (!s || !f)
25         return ;
26     while (*s)
27         f(s++);
28 }
```

#### 5.1.1.55 ft_striteri() `void ft_striteri (`

```
char * s,
void(*)(unsigned int, char *) f )
```

Applies the function `f` to each character of the string passed as argument, and passing its index as first argument. Each character is passed by address to `f` to be modified if necessary.

**Parameters**

| | |
|---|---|
| *s* | The string to iterate. |
| *f* | The function to apply to each character of `s` and its index. |

Definition at line 23 of file ft_striteri.c.

```
24 {
25     size_t  i;
26
27     if (!s || !f)
28         return ;
29     i = 0;
30     while (*s)
31         f(i++, s++);
32 }
```

#### 5.1.1.56 ft_strjoin() `char* ft_strjoin (`

```
const char * s1,
const char * s2 )
```

Allocates (with `malloc`) and returns a “fresh” string ending with `'\0'`, result of the concatenation of `s1` and `s2`. If the allocation fails the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *s1* | The prefix string. |
| *s2* | The suffix string. |

**Returns**

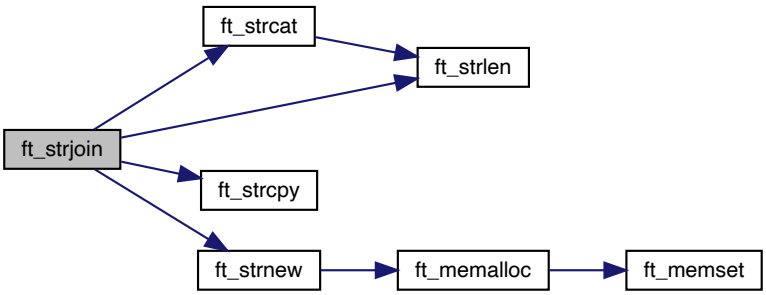
The “fresh” string result of the concatenation of the 2 strings.

Definition at line 24 of file ft_strjoin.c.

```
25 {
26     char    *s_joined;
27
28     if (!s1 && !s2)
29         return (NULL);
30     else if (!s1)
31         return (char *)s2;
32     else if (!s2)
33         return (char *)s1;
34     if (!(s_joined = ft_strnew(ft_strlen(s1) + ft_strlen(s2))))
35         return (NULL);
36     s_joined = ft_strcpy(s_joined, s1);
37     s_joined = ft_strcat(s_joined, s2);
38     return (s_joined);
39 }
```

References ft_strcat(), ft_strcpy(), ft_strlen(), and ft_strnew().

Here is the call graph for this function:




#### 5.1.1.57 ft_strlast() `char ft_strlast (`

```
char const * str )
```

Returns the last characters (excluding `NULL`-termination) of a string.

**Parameters**

| | |
|---|---|
| *str* | The string. |

**Returns**

The last character of the string, or `0` if it is empty.

Definition at line 21 of file ft_strlast.c.

```
22 {
23     size_t  i;
24
25     i = 0;
26     while (str[i + 1])
27         i++;
28     return (str[i]);
29 }
```

#### 5.1.1.58 ft_strlcat() `size_t ft_strlcat (`

```
char * dst,
const char * src,
size_t dstsize )
```

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strlcat.c.

```
20 {
21     size_t  dstlen;
22     size_t  srclen;
```

```
23      size_t  i;
24
25      dstlen = ft_strlen(dst);
26      srclen = ft_strlen(src);
27      if (dstlen >= dstsize)
28          return (srclen + dstsize);
29      i = 0;
30      while (i < dstsize - dstlen - 1 && src[i])
31      {
32          dst[dstlen + i] = src[i];
33          i++;
34      }
35      dst[dstlen + i] = '\0';
36      return (srclen + dstlen);
37  }
```

References ft_strlen().

Here is the call graph for this function:


#### 5.1.1.59 ft_strlcpy() size_t ft_strlcpy ( char * *dst*, const char * *src*, size_t *maxlen* )

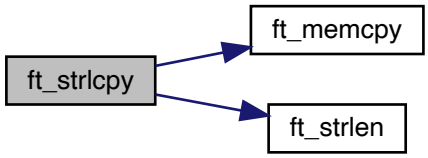
Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strlcpy.c.

```
20  {
21      size_t srclen;
22
23      srclen = ft_strlen(src);
24      if (srclen + 1 < maxlen)
25      {
26          ft_memcpy(dst, src, srclen + 1);
27      }
28      else if (maxlen != 0)
29      {
30          ft_memcpy(dst, src, maxlen - 1);
31          dst[maxlen - 1] = '\0';
32      }
33      return (srclen);
34  }
```

References ft_memcpy(), and ft_strlen().

Here is the call graph for this function:




#### 5.1.1.60 ft_strlen() size_t ft_strlen ( const char * s )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_strlen.c.

```
20 {
21     size_t  i;
22
23     i = 0;
24     while (s[i])
25         i++;
26     return (i);
27 }
```

Referenced by ft_puts(), ft_putstr_fd(), ft_strcat(), ft_strclr(), ft_strdup(), ft_strjoin(), ft_strlcat(), ft_strlcpy(), ft_strncat(), ft_strrev(), and ft_strtrim().

#### 5.1.1.61 ft_strmap() char* ft_strmap ( char const * s, char(*)(char) f )

Applies the function f to each character of the string given as argument to create a "fresh" new string (with malloc) resulting from the successive applications of f.

**Parameters**

| | |
|---|---|
| *s* | The string to map. |
| *f* | The function to apply to each character of s. |

**Returns**

The "fresh" string created from the successive applications of f.

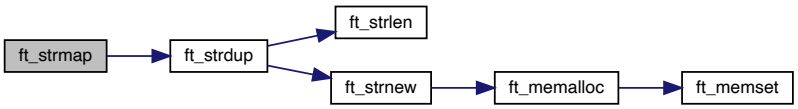
Definition at line 24 of file ft_strmap.c.

```
25 {
```

```
26      char    *s_new;
27      size_t  i;
28
29      if (!s || !f)
30          return (NULL);
31      s_new = ft_strdup(s);
32      if (!s_new)
33          return (NULL);
34      i = 0;
35      while (s[i])
36      {
37          s_new[i] = f(s[i]);
38          i++;
39      }
40      return (s_new);
41  }
```

References ft_strdup().

Here is the call graph for this function:




#### 5.1.1.62 ft_strmapi() `char* ft_strmapi ( char const * s, char(*)(unsigned int, char) f )`

Applies the function `f` to each character of the string passed as argument by giving its index as first argument to create a “fresh” new string (with `malloc`) resulting from the successive applications of `f`.

**Parameters**

| | |
|---|---|
| *s* | The string to map. |
| *f* | The function to apply to each character and its index of `s`. |

**Returns**

The “fresh” string created from the successive applications of f.

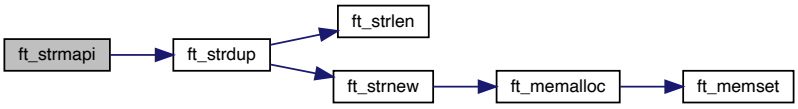
Definition at line 25 of file ft_strmapi.c.

```
26  {
27      char    *s_new;
28      size_t  i;
29
30      if (!s || !f)
31          return (NULL);
32      s_new = ft_strdup(s);
33      if (!s_new)
34          return (NULL);
35      i = 0;
36      while (s[i])
37      {
38          s_new[i] = f(i, s[i]);
39          i++;
```

```
40      }
41      return (s_new);
42  }
```

References ft_strdup().

Here is the call graph for this function:




#### 5.1.1.63 ft_strncat() char* ft_strncat ( char * *s1*, const char * *s2*, size_t *n* )

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strncat.c.

```
20  {
21      size_t  i;
22      size_t  len;
23
24      i = 0;
25      len = ft_strlen(s1);
26      while (i < n && s2[i])
27      {
28          s1[len + i] = s2[i];
29          i++;
30      }
31      s1[len + i] = 0;
32      return (s1);
33  }
```

References ft_strlen().

Here is the call graph for this function:

#### 5.1.1.64 ft_strncmp() int ft_strncmp (

```
const char * s1,
const char * s2,
size_t n )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_strncmp.c.

```
20 {
21     unsigned char *s1u;
22     unsigned char *s2u;
23
24     s1u = (unsigned char *)s1;
25     s2u = (unsigned char *)s2;
26     while ((*s1u || *s2u) && n-- > 0)
27     {
28         if (*s1u - *s2u)
29             return (*s1u - *s2u);
30         s1u++;
31         s2u++;
32     }
33     return (0);
34 }
```

#### 5.1.1.65 ft_strncpy() char* ft_strncpy (

```
char * dst,
const char * src,
size_t len )
```

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_strncpy.c.

```
20 {
21     size_t  i;
22
23     i = 0;
24     while (i < len && src[i])
25     {
26         dst[i] = src[i];
27         i++;
28     }
29     while (i < len)
30     {
31         dst[i] = '\0';
32         i++;
33     }
34     return (dst);
35 }
```

Referenced by ft_strsub().

#### 5.1.1.66 ft_strndup() char* ft_strndup (

```
const char * s1,
size_t len )
```

Allocate sufficient memory for a string of len characters, do the copy of len characters, NULL terminate the string, and return a pointer to it. The pointer may subsequently be used as an argument to the function free.

**Parameters**

| | |
|---|---|
| *s1* | String to be copied from. |
| *len* | Number of characters to copy. |

#### Returns

String of length `len` with copied characters.

#### Remarks

If `s1` contains less than `len` characters, behaviour is undefined.

Definition at line 27 of file ft_strndup.c.

```
28 {
29     size_t  i;
30     char    *cpy;
31
32     if (!(cpy = (char *)malloc(sizeof(char) * (len + 1))))
33         return (NULL);
34     i = 0;
35     while (i < len)
36     {
37         cpy[i] = s1[i];
38         i++;
39     }
40     cpy[i] = '\0';
41     return (cpy);
42 }
```

Referenced by ft_strsplit().

### 5.1.1.67 ft_strnequ() `int ft_strnequ (`

```
char const * s1,
char const * s2,
size_t n )
```

Lexicographical comparison between `s1` and `s2` up to n characters or until a `'\0'` is reached. If the 2 strings are identical, the function returns `1`, or `0` otherwise.

#### Parameters

| | |
|---|---|
| *s1* | The first string to be compared. |
| *s2* | The second string to be compared. |
| *n* | The maximum number of characters to be compared. |

#### Returns

`1` or `0` according to if the 2 strings are identical or not.

Definition at line 25 of file ft_strnequ.c.

```
26 {
27     if (!s1 && !s2)
28         return (1);
29     else if (!s1 || !s2)
30         return (0);
31     while ((*s1 || *s2) && n-- > 0)
32     {
33         if (*s1 != *s2)
34             return (0);
35         s1++;
36         s2++;
37     }
38     return (1);
39 }
```

#### 5.1.1.68 ft_strnew()

```
char* ft_strnew (
        size_t size )
```

Allocates (with `malloc`) and returns a “fresh” string ending with `'\0'`. Each character of the string is initialized at `'\0'`. If the allocation fails the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *size* | The size of the string to be allocated. |

**Returns**

The string allocated and initialized to `0`.

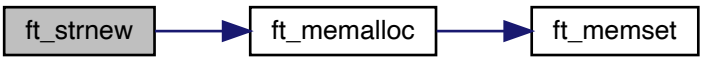
Definition at line 23 of file ft_strnew.c.

```
24 {
25     if (size + 1 < size)
26         return (NULL);
27     return (ft_memalloc(sizeof(char) * (size + 1)));
28 }
```

References ft_memalloc().

Referenced by ft_itoa(), ft_strdup(), ft_strjoin(), ft_strrev(), and ft_strsub().

Here is the call graph for this function:




#### 5.1.1.69 ft_strnstr()

```
char* ft_strnstr (
        const char * haystack,
        const char * needle,
        size_t len )
```

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strnstr.c.

```
20 {
21     size_t  i;
22     size_t  j;
23
24     i = 0;
25     if (*needle == '\0')
26         return ((char *)haystack);
27     while (haystack[i] && i < len)
28     {
29         if (haystack[i] == needle[0])
30         {
31             j = 0;
32             while (needle[j] &&
```

```
33                      i + j < len &&
34                      haystack[i + j] == needle[j])
35                  j++;
36              if (needle[j] == 0)
37                  return ((char *)(haystack + i));
38          }
39          i++;
40      }
41      return (NULL);
42  }
```

#### 5.1.1.70 ft_strrchr() char* ft_strrchr ( const char * s, int c )

Replicate behaviour of a function of the same name (sans ft_) from libc.

Definition at line 19 of file ft_strrchr.c.

```
20  {
21      size_t  i;
22      size_t  last;
23      int     found;
24
25      i = 0;
26      last = 0;
27      found = 0;
28      while (s[i])
29      {
30          if (s[i] == c)
31          {
32              last = i;
33              found = 1;
34          }
35          i++;
36      }
37      if (found)
38          return ((char *)(s + last));
39      else if (c == 0)
40          return ((char *)(s + i));
41      else
42          return (NULL);
43  }
```

#### 5.1.1.71 ft_strrev() char* ft_strrev ( const char * s )

Allocates (with malloc) and returns a “reversed” NULL-terminated string or NULL if allocation fails.

Example: ft_strrev("0123456789") returns "9876543210"

**Parameters**

| | |
|---|---|
| *s* | String to be reversed. |

**Returns**

Reversed string.

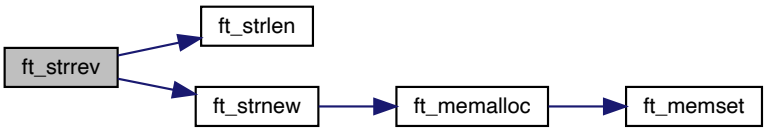
Definition at line 24 of file ft_strrev.c.

```
25  {
26      size_t  len;
```

```
27      size_t  i;
28      char    *srev;
29
30      if (!s)
31          return (NULL);
32      len = ft_strlen(s);
33      if (!(srev = ft_strnew(len)))
34          return (NULL);
35      i = 0;
36      while (i < len)
37      {
38          srev[i] = s[len - i - 1];
39          i++;
40      }
41      return (srev);
42  }
```

References ft_strlen(), and ft_strnew().

Here is the call graph for this function:




#### 5.1.1.72 ft_strsplit()

```
char** ft_strsplit (
        char const * s,
        char delim )
```

Allocates (with `malloc`) and returns an array of “fresh” strings (all ending with `'\0'`, including the array itself) obtained by splitting `s` using the character `c` as a delimiter. If the allocation fails the function returns `NULL`.

Example : `ft_strsplit("*hello*fellow***students*", '*')` returns the array `["hello", "fellow", "students"]`.

**Parameters**

| | |
|---|---|
| *s* | The string to split. |
| *delim* | The delimiter character. |

**Returns**

The array of “fresh” strings result of the split.

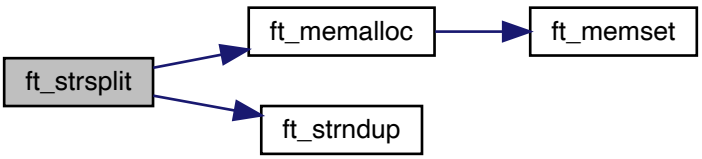
Definition at line 69 of file ft_strsplit.c.

```
70  {
71      char        **tab;
72      const char  *start;
73      const char  *end;
74      size_t      wcount;
75      size_t      i;
76
```

```
77      wcount = count_words(s, delim);
78      if (!(tab = ft_memalloc(sizeof(char *) * (wcount + 1))))
79          return (NULL);
80      i = 0;
81      end = s;
82      while (i < wcount)
83      {
84          start = search_not_delim(end, delim);
85          end = search_delim(start, delim);
86          if (!(tab[i] = ft_strndup(start, end - start)))
87          {
88              free_tab(tab);
89              return (NULL);
90          }
91          i++;
92      }
93      tab[i++] = NULL;
94      return (tab);
95  }
```

References ft_memalloc(), and ft_strndup().

Here is the call graph for this function:




#### 5.1.1.73 ft_strstr() `char* ft_strstr ( const char * haystack, const char * needle )`

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_strstr.c.

```
20  {
21      size_t  i;
22      size_t  j;
23
24      i = 0;
25      if (*needle == 0)
26          return ((char *)haystack);
27      while (haystack[i])
28      {
29          if (haystack[i] == needle[0])
30          {
31              j = 0;
32              while (needle[j] && haystack[i + j] == needle[j])
33                  j++;
34              if (needle[j] == 0)
35                  return ((char *)(haystack + i));
36          }
37          i++;
38      }
39      return (NULL);
40  }
```

#### 5.1.1.74 ft_strsub() char* ft_strsub (

```
char const * s,
unsigned int start,
size_t len )
```

Allocates (with `malloc`) and returns a "fresh" substring from the string given as argument. The substring begins at index `start` and is of size `len`. If `start` and `len` aren't refering to a valid substring, the behavior is undefined. If the allocation fails, the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *s* | The string from which create the substring. |
| *start* | The start index of the substring. |
| *len* | The size of the substring. |

**Returns**

The substring.

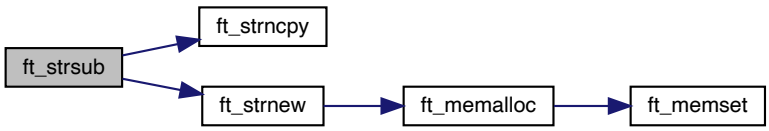
Definition at line 27 of file ft_strsub.c.

```
28 {
29     char    *sub;
30
31     if (!s ||
32         !(sub = ft_strnew(len)))
33         return (NULL);
34     ft_strncpy(sub, s + start, len);
35     return (sub);
36 }
```

References ft_strncpy(), and ft_strnew().

Referenced by ft_strtrim().

Here is the call graph for this function:




#### 5.1.1.75 ft_strtrim() char* ft_strtrim (

```
char const * s )
```

Allocates (with `malloc`) and returns a copy of the string given as argument without whitespaces at the beginning or at the end of the string. Will be considered as whitespaces the following characters `' '`, `'\n'` and `'\t'`. If `s` has no whitespaces at the beginning or at the end, the function returns a copy of `s`. If the allocation fails the function returns `NULL`.

**Parameters**

| | |
|---|---|
| *s* | The string to be trimmed. |

**Returns**

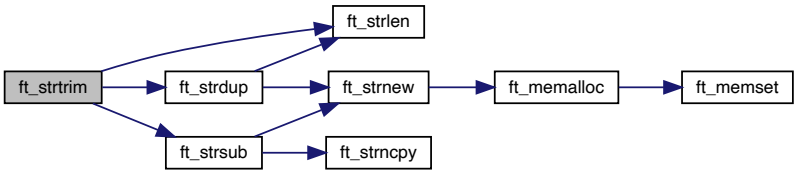
The “fresh” trimmed string or a copy of `s`.

Definition at line 31 of file ft_strtrim.c.

```
32 {
33     size_t  i;
34     size_t  j;
35
36     i = 0;
37     while (is_trimmable(s[i]))
38         i++;
39     if (s[i] == '\0')
40         return (ft_strdup(""));
41     j = ft_strlen(s) - 1;
42     while (is_trimmable(s[j]))
43         j--;
44     return (ft_strsub(s, i, j - i + 1));
45 }
```

References ft_strdup(), ft_strlen(), and ft_strsub().

Here is the call graph for this function:




### 5.1.1.76 ft_tolower() `int ft_tolower ( int c )`

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_tolower.c.

```
20 {
21     if (c >= 'A' && c <= 'Z')
22         return (c + 'a' - 'A');
23     else
24         return (c);
25 }
```

### 5.1.1.77 ft_toupper() `int ft_toupper ( int c )`

Replicate behaviour of a function of the same name (sans `ft_`) from `libc`.

Definition at line 19 of file ft_toupper.c.

```
20 {
21     if (c >= 'a' && c <= 'z')
22         return (c + 'A' - 'a');
23     else
24         return (c);
25 }
```

# Index