C Library - <stdlib.h>

The **stdlib.h** header defines four variable types, several macros, and various functions for performing general functions.

Library Variables

Following are the variable types defined in the header stdlib.h −

Sr.No.	Variable & Description
1	**size_t** This is the unsigned integral type and is the result of the **sizeof** keyword.
2	**wchar_t** This is an integer type of the size of a **wide** character constant.
3	**div_t** This is the structure returned by the **div** function.
4	**ldiv_t** This is the structure returned by the **ldiv** function.

Library Macros

Following are the macros defined in the header stdlib.h −

Sr.No.	Macro & Description
1	**NULL** This macro is the value of a null pointer constant.
2	**EXIT_FAILURE** This is the value for the exit function to return in case of failure.
3	**EXIT_SUCCESS** This is the value for the exit function to return in case of success.
4	**RAND_MAX** This macro is the maximum value returned by the rand function.
5	**MB_CUR_MAX** This macro is the maximum number of bytes in a multi-byte character set which cannot be larger than MB_LEN_MAX.

Library Functions

Following are the functions defined in the header stlib.h −

Sr.No.	Function & Description
1	double atof(const char *str) Converts the string pointed to, by the argument *str* to a floating-point number (type double).
2	int atoi(const char *str) Converts the string pointed to, by the argument *str* to an integer (type int).
3	long int atol(const char *str) Converts the string pointed to, by the argument *str* to a long integer (type long int).
4	double strtod(const char *str, char **endptr) Converts the string pointed to, by the argument *str* to a floating-point number (type double).
5	long int strtol(const char *str, char **endptr, int base) Converts the string pointed to, by the argument *str* to a long integer (type long int).
6	unsigned long int strtoul(const char *str, char **endptr, int base) Converts the string pointed to, by the argument *str* to an unsigned long integer (type unsigned long int).
7	void *calloc(size_t nitems, size_t size) Allocates the requested memory and returns a pointer to it.
8	void free(void *ptr Deallocates the memory previously allocated by a call to *calloc, malloc,* or *realloc*.
9	void *malloc(size_t size) Allocates the requested memory and returns a pointer to it.
10	void *realloc(void *ptr, size_t size) Attempts to resize the memory block pointed to by ptr that was previously allocated with a call to *malloc* or *calloc*.
11	void abort(void) Causes an abnormal program termination.

12	int atexit(void (*func)(void)) Causes the specified function **func** to be called when the program terminates normally.
13	void exit(int status) Causes the program to terminate normally.
14	char *getenv(const char *name) Searches for the environment string pointed to by name and returns the associated value to the string.
15	int system(const char *string) The command specified by string is passed to the host environment to be executed by the command processor.
16	void *bsearch(const void *key, const void *base, size_t nitems, size_t size, int (*compar)(const void *, const void *)) Performs a binary search.
17	void qsort(void *base, size_t nitems, size_t size, int (*compar)(const void *, const void*)) Sorts an array.
18	int abs(int x) Returns the absolute value of x.
19	div_t div(int numer, int denom) Divides numer (numerator) by denom (denominator).
20	long int labs(long int x) Returns the absolute value of x.
21	ldiv_t ldiv(long int numer, long int denom) Divides numer (numerator) by denom (denominator).
22	int rand(void) Returns a pseudo-random number in the range of 0 to *RAND_MAX*.

23	void srand(unsigned int seed) This function seeds the random number generator used by the function **rand**.
24	int mblen(const char *str, size_t n) Returns the length of a multibyte character pointed to by the argument *str*.
25	size_t mbstowcs(schar_t *pwcs, const char *str, size_t n) Converts the string of multibyte characters pointed to by the argument *str* to the array pointed to by *pwcs*.
26	int mbtowc(whcar_t *pwc, const char *str, size_t n) Examines the multibyte character pointed to by the argument *str*.
27	size_t wcstombs(char *str, const wchar_t *pwcs, size_t n) Converts the codes stored in the array *pwcs* to multibyte characters and stores them in the string *str*.
28	int wctomb(char *str, wchar_t wchar) Examines the code which corresponds to a multibyte character given by the argument *wchar*.