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| Witut2005  07.07.2022 |

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| **xaninOS developer manual** |

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# C libary

## stdiox.h – standard input/output library

screen\_clear() – clears screen

putchar(char character) – puts single character to the screen without any interpretation

print\_bcd\_number(uint8\_t x) - prints bcd number to the screen

xprintf(char\* str, …) – xaninOS printf implementation

xscanf(char\* str, …) – xaninOS scanf implementation

inputg(void) – returns current keyboard character and scan code in struct

## stdlibx.h – standard library

bool key\_presssed(void) – returns true if any key is pressed

void wait\_key(uint8\_t key) – waits until given key is not pressed

char getchar(void) – gets a character from the keyboard

char getscan(void) – gets a scan code from the keyboard

char\* keyboard\_buffer\_refresh(uint16\_t\* screen\_buffer) – refreshes keyboard buffer

CmosTime\* time\_get(CmosTime\* Time) – returns current time

uint8\_t floppy\_type\_get\_cmos(void) – returns floppy type

void swap\_int(int\* xp, int\* yp) – swaps xp with yp

void swap\_int(char\* xp, char\* yp) – swaps xp with yp

void swap\_int(uint16\_t\* xp, uint16\_t\* yp) – swaps xp with yp

void srand(uint32\_t seed) – set randomizer variable to seed

uint32\_t rand(void) – returns random number

void bubble\_sort(int\* array, int n) – sorts array using bubble sort algorithm

void merge(int\* array, int first, int middle, int last) – merge for merge\_sort

void merge\_sort(int\* array, int first, int last) – sorts array using merge sort algorithm

void\* malloc(uint16\_t size) – allocates memory

void\* realloc(void\* ptr, uint32\_t size\_old, uint32\_t size\_new) – reallocates memory

void free(void\* ptr) – realizes memory

## hal.h

void oubIO(uint16\_t port, uint8\_t al) – sends al value to IO port8 (outb)

void outwIO(uint16\_t port, uint16\_t ax) – sends ax value to IO port16 (outw)

void outdIO(uint16\_t port, uint32\_t eax) – sends eax value to IO port32 (outd)

uint8\_t inbIO(uint16\_t port) – reads IO port8 value (inb)

uint16\_t inwIO(uint16\_t port) – reads IO port16 value (inw)

uint32\_t indIO(uint16\_t port) – reads IO port32 value (ind)

void interrupt\_disable(void) – disables interrupts

void interrupt\_enable(void) – enables interrupts

void eoi\_send(void) – sends EOI signal to APIC chip

void io\_wait(void) – wait

real\_mode\_enter(uint16\_t segment, uint16\_t offset, uint32\_t return\_address) – enters real mode and after end of real mode program execute program at return\_address