Санкт-Петербургский национальный исследовательский университет информационных технологий, механики и оптики.

Кафедра вычислительной техники

Языки системного программирования

Лабораторная работа №1

Выполнил

Студент группы P3210

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Санкт-Петербург
2018 г.

Задание:

Написать библиотеку ввода/вывода на языке Ассемблер, содержащую следующие функции:

Function	Definition
`exit`	Accepts an exit code and terminates current process.
`string_length`	Accepts a pointer to a string and returns its length.
`print_string`	Accepts a pointer to a null-terminated string and prints it to **stdout**.
`print_char`	Accepts a character code directly as its first argument and prints it to **stdout**.
`print_newline`	Prints a character with code `0xA`.
`print_uint`	Outputs an unsigned 8-byte integer in decimal format.
	We suggest you create a buffer on the stack[6] and store the division results there. Each time you divide the last value by 10 and store the corresponding digit inside the buffer. Do not forget, that you should transform each digit into its ASCII code (e.g., `0x04` becomes`0x34`).
`print_int`	Output a signed 8-byte integer in decimal format.
`read_char`	Read one character from **stdin and return it**. If the end of input stream occurs, return 0.
`read_word`	Accepts a buffer address and size as arguments. Reads next word from **stdin** (skipping whitespaces[7] into buffer). Stops and returns 0 if word is too big for the buffer specified; otherwise returns a buffer address.
	This function should null-terminate the accepted string.
`parse_uint`	Accepts a null-terminated string and tries to parse an unsigned number from its start.
	Returns the number parsed in `rax`, its characters count in `rdx`.
`parse_int`	Accepts a null-terminated string and tries to parse a signed number from its start. Returns the number parsed in `rax`; its characters count in `rdx` (including sign if any). No spaces between sign and digits are allowed.
`string_equals`	Accepts two pointers to strings and compares them. Returns 1 if they are equal, otherwise 0.
`string_copy`	Accepts a pointer to a string, a pointer to a buffer, and buffer's length. Copies string to the destination. The destination address is returned if the string fits the buffer; otherwise zero is returned.

Вывод:

В результате выполнения лабораторной работы была создан файл lib.inc, содержащий в себе описание требуемых функций. Были изучены и применены некоторые инструкции языка Ассемблер.