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«СИБИРСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ»

Институт Космических и информационных технологий

институт

Кафедра «Информатика»

кафедра

**ОТЧЕТ О ЛАБОРАТОРНОЙ РАБОТЕ**

Лабораторная работа No 5. Взаимодействие процессов в ОС GNU/Linux

тема

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Содержание

[Содержание 2](#_Toc25093965)

[1 Цель работы с постановкой задачи 4](#_Toc25093966)

[1.1 Цель работы 4](#_Toc25093967)

[1.2 Задача работы 4](#_Toc25093968)

[1.3 Описание и пояснение к работе 5](#_Toc25093969)

[2 Исходные тексты программ (с комментариями в стиле системы doxygen) 6](#_Toc25093970)

[3 Содержимое скрипта configure 6](#_Toc25093971)

[3.1 configure 6](#_Toc25093972)

[3.2 сonfigure.ac 6](#_Toc25093973)

[3.3 Makefile.am 7](#_Toc25093974)

[3.4 build/Makefile.am 7](#_Toc25093975)

[4 Примеры работы программ в виде перехватов содержимого экрана 7](#_Toc25093976)

[4.1 Запуск №1 (WSL Ubuntu 18.04, GCC) 8](#_Toc25093977)

[4.1.1. Сборка с помощью autotools 8](#_Toc25093978)

[4.1.2. Запуск клиента без запущенного сервера 13](#_Toc25093979)

[4.1.3. Запуск сервера 14](#_Toc25093980)

[4.1.4. Запуск клиента 14](#_Toc25093981)

[4.1.5. Результат работы сервера 15](#_Toc25093982)

[4.2 Запуск №2 (Клиент – Windows, MSVC; удалённый сервер – Ubuntu 16.04, GCC) 15](#_Toc25093983)

[4.2.1. Сборка с помощью autotools на удалённом сервере 16](#_Toc25093984)

[4.2.2. Сборка на клиенте с помощью CMake и msbuild 20](#_Toc25093985)

[4.2.3. Запуск клиента без запущенного сервера 21](#_Toc25093986)

[4.2.4. Запуск сервера 22](#_Toc25093987)

[4.2.5. Запуск клиента 22](#_Toc25093988)

[4.2.6. Результат работы сервера 22](#_Toc25093989)

# Цель работы с постановкой задачи

## Цель работы

Изучение особенностей межпроцессного взаимодействия в ОС GNU/Linux.

## Задача работы

Требуется: разработать две программы: первая реализует серверную часть, вторая — клиентскую часть. Обмен данными между ними организуется посредством механизма Internet-сокетов и протокола TCP либо UDP. Результат выполнения выводится на терминал/консоль. Должен использоваться интерфейс командной строки (CLI). При реализации обязательно использование изученных в лекционном курсе системных вызовов (ОС Linux), предназначенных для работы с сокетами. Программный код, относящийся к пользовательскому интерфейсу, должен быть физически отделен от кода, реализующего межпроцессное взаимодействие, и оба они, в свою очередь, отделены от кода реализации основной логики, например, вычислений. Допускается реализация одной программы в форме Windows-приложения, авторой — в форме Linux-приложения. Далее оговаривается функционал клиентской и серверной частей. Обе части должны быть устойчивы к некорректному пользовательскому вводу. В нечетных вариантах заданий используются потоковые сокеты, в четных — дейтаграммные сокеты.

**Вариант 17.** Клиент отсылает серверу элементы введенной пользователем квадратной матрицы, а также два введенных им числа – номер столбца и номер строки. Сервер принимает матрицу и номер столбца N и номер строки M, выводит ее на экран, затем «вычеркивает» из матрицы столбец с номером N и строку с номером M, выводит измененную матрицу на экран, вычисляет и выводит на экран значение ее определителя.

## Описание и пояснение к работе

Используется система сборки Autotools на Linux и CMake на Windows и Linux. Используется интерфейс командной строки. Для сборки, вывода справки клиента и сервера требуется:

*# linux, autotools, make, gcc*./configure  
make  
./build/Lab\_05\_Client -h  
./build/Lab\_05\_Server -h  
  
*# linux, autotools, make, clang*./configure CC=clang  
make  
./build/Lab\_05\_Client -h  
./build/Lab\_05\_Server -h  
  
*# linux, cmake, make, gcc*cd build  
cmake ..  
make  
./Lab\_05\_Client/Lab\_05\_Client -h  
./Lab\_05\_Server/Lab\_05\_Server -h  
  
*# linux, cmake, make, clang*cd build  
cmake -DCMAKE\_C\_COMPILER=clang ..  
make  
./Lab\_05\_Client/Lab\_05\_Client -h  
./Lab\_05\_Server/Lab\_05\_Server -h  
  
*# windows, cmake, msbuild, msvc*cd build  
cmake ..  
msbuild .\ALL\_BUILD.vcxproj  
.\Lab\_05\_Client\Debug\Lab\_05\_Client.exe -h  
.\Lab\_05\_Server\Debug\Lab\_05\_Server.exe -h  
  
*# windows, cmake, mingw32-make, mingw*cd build  
cmake -G **"MinGW Makefiles"** ..  
mingw32-make  
.\Lab\_05\_Client\Lab\_05\_Client.exe -h  
.\Lab\_05\_Server\Lab\_05\_Server.exe -h  
  
*# windows, cmake, mingw32-make, clang*cd build  
cmake -G **"MinGW Makefiles"** -DCMAKE\_C\_COMPILER=clang -DCMAKE\_CXX\_COMPILER=clang++ ..  
mingw32-make  
.\Lab\_05\_Client\Lab\_05\_Client.exe -h  
.\Lab\_05\_Server\Lab\_05\_Server.exe -h

# Исходные тексты программ (с комментариями в стиле системы doxygen)

Исходные тексты программ предоставлены в архиве.

# Содержимое скрипта configure

## configure

Предоставлен в архиве.

## сonfigure.ac

# -\*- Autoconf -\*-  
# Process this file with autoconf to produce a configure script.  
  
AC\_PREREQ([2.69])  
AC\_INIT([Lab\_05], [0.1], [misterptits@yandex.ru])  
AC\_CONFIG\_SRCDIR([Lab\_05\_Client/main.c])  
#AC\_CONFIG\_HEADERS([config.h])  
  
# Checks for programs.  
AC\_PROG\_CC  
  
# Checks for libraries.  
  
# Checks for header files.  
AC\_CHECK\_HEADERS([arpa/inet.h fcntl.h limits.h malloc.h netinet/in.h stddef.h stdint.h stdlib.h string.h sys/socket.h unistd.h])  
  
# Checks for typedefs, structures, and compiler characteristics.  
AC\_CHECK\_HEADER\_STDBOOL  
AC\_TYPE\_SIZE\_T  
AC\_TYPE\_UINT16\_T  
AC\_TYPE\_UINT32\_T  
  
# Checks for library functions.  
AC\_FUNC\_MALLOC  
AC\_FUNC\_REALLOC  
AC\_FUNC\_STRERROR\_R  
AC\_CHECK\_FUNCS([socket strchr])  
  
AM\_INIT\_AUTOMAKE  
AC\_PROG\_RANLIB  
  
AC\_CONFIG\_FILES([build/Makefile  
 Makefile])  
AC\_OUTPUT

## Makefile.am

SUBDIRS = build

## build/Makefile.am

AUTOMAKE\_OPTIONS = subdir-objects  
  
noinst\_LIBRARIES = libLab\_05\_Lib.a libLab\_05\_MatrixLib.a   
bin\_PROGRAMS = Lab\_05\_Client Lab\_05\_Server  
  
libLab\_05\_MatrixLib\_a\_SOURCES = \  
 ../Lab\_05\_MatrixLib/Matrix.c  
  
libLab\_05\_Lib\_a\_SOURCES = \  
 ../Lab\_05\_Lib/Input.c \  
 ../Lab\_05\_Lib/ParseInt.c \  
 ../Lab\_05\_Lib/ReturnCodes.c \  
 ../Lab\_05\_Lib/LastErrorMessage.c \  
 ../Lab\_05\_Lib/Request.c \  
 ../Lab\_05\_Lib/Socket.c  
libLab\_05\_Lib\_a\_CFLAGS = -I../Lab\_05\_MatrixLib   
libLab\_05\_Lib\_a\_LIBADD = libLab\_05\_MatrixLib.a  
  
Lab\_05\_Client\_SOURCES = \  
 ../Lab\_05\_Client/Args.c \  
 ../Lab\_05\_Client/Client.c \  
 ../Lab\_05\_Client/main.c  
Lab\_05\_Client\_CFLAGS = -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib  
Lab\_05\_Client\_LDADD = libLab\_05\_MatrixLib.a libLab\_05\_Lib.a  
  
Lab\_05\_Server\_SOURCES = \  
 ../Lab\_05\_Server/Args.c \  
 ../Lab\_05\_Server/Server.c \  
 ../Lab\_05\_Server/main.c  
Lab\_05\_Server\_CFLAGS = -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib  
Lab\_05\_Server\_LDADD = libLab\_05\_MatrixLib.a libLab\_05\_Lib.a

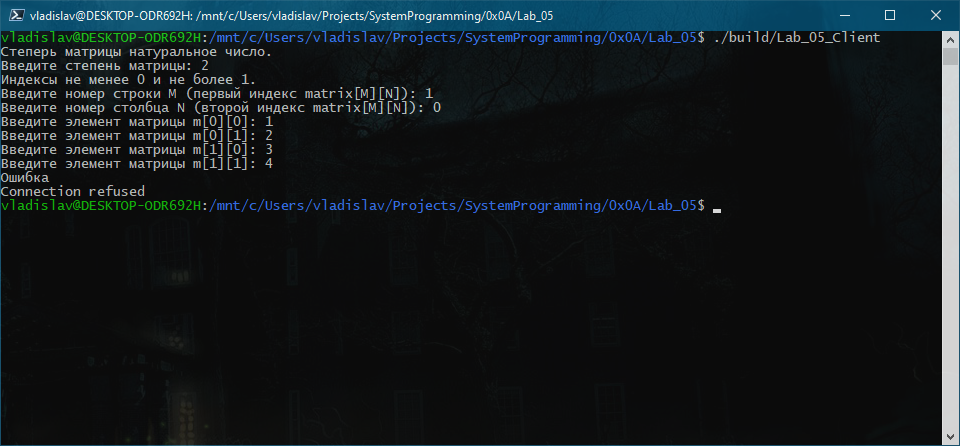
# Примеры работы программ в виде перехватов содержимого экрана

## Запуск №1 (WSL Ubuntu 18.04, GCC)

### Сборка с помощью autotools

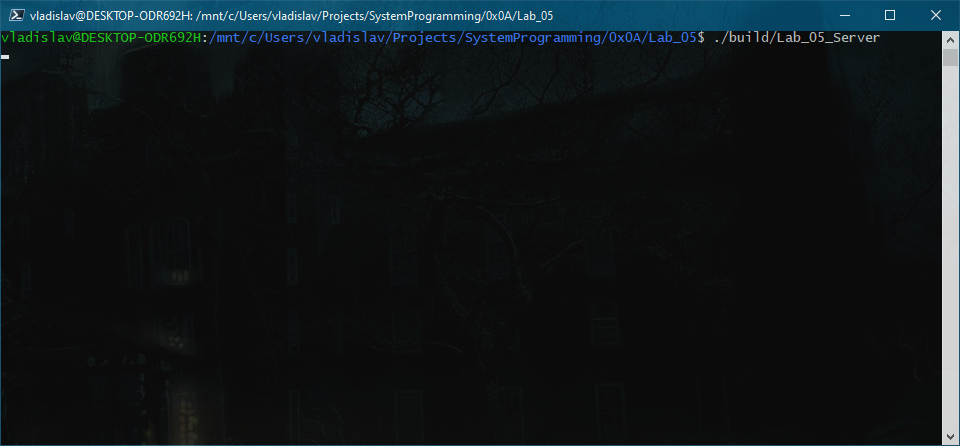
vladislav@DESKTOP-ODR692H:/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05**$** ./configure  
checking **for** gcc... gcc  
checking whether the C compiler works... yes  
checking **for** C compiler default output file name... a.out  
checking **for** suffix of executables...  
checking whether we are cross compiling... no  
checking **for** suffix of object files... o  
checking whether we are using the GNU C compiler... yes  
checking whether gcc accepts -g... yes  
checking **for** gcc option to accept ISO C89... none needed  
checking whether gcc understands -c and -o together... yes  
checking how to run the C preprocessor... gcc -E  
checking **for** grep that handles long lines and -e... /bin/grep  
checking **for** egrep... /bin/grep -E  
checking **for** ANSI C header files... yes  
checking **for** sys/types.h... yes  
checking **for** sys/stat.h... yes  
checking **for** stdlib.h... yes  
checking **for** string.h... yes  
checking **for** memory.h... yes  
checking **for** strings.h... yes  
checking **for** inttypes.h... yes  
checking **for** stdint.h... yes  
checking **for** unistd.h... yes  
checking arpa/inet.h usability... yes  
checking arpa/inet.h presence... yes  
checking **for** arpa/inet.h... yes  
checking fcntl.h usability... yes  
checking fcntl.h presence... yes  
checking **for** fcntl.h... yes  
checking limits.h usability... yes  
checking limits.h presence... yes  
checking **for** limits.h... yes  
checking malloc.h usability... yes  
checking malloc.h presence... yes  
checking **for** malloc.h... yes  
checking netinet/in.h usability... yes  
checking netinet/in.h presence... yes  
checking **for** netinet/in.h... yes  
checking stddef.h usability... yes  
checking stddef.h presence... yes  
checking **for** stddef.h... yes  
checking **for** stdint.h... (cached) yes  
checking **for** stdlib.h... (cached) yes  
checking **for** string.h... (cached) yes  
checking sys/socket.h usability... yes  
checking sys/socket.h presence... yes  
checking **for** sys/socket.h... yes  
checking **for** unistd.h... (cached) yes  
checking **for** stdbool.h that conforms to C99... yes  
checking **for** \_Bool... yes  
checking **for** size\_t... yes  
checking **for** uint16\_t... yes  
checking **for** uint32\_t... yes  
checking **for** stdlib.h... (cached) yes  
checking **for** GNU libc compatible malloc... yes  
checking **for** stdlib.h... (cached) yes  
checking **for** GNU libc compatible realloc... yes  
checking whether strerror\_r is declared... yes  
checking **for** strerror\_r... yes  
checking whether strerror\_r returns char \*... no  
checking **for** socket... yes  
checking **for** strchr... yes  
checking **for** a BSD-compatible install... /usr/bin/install -c  
checking whether build environment is sane... yes  
checking **for** a thread-safe mkdir -p... /bin/mkdir -p  
checking **for** gawk... gawk  
checking whether make sets **$**(MAKE)... yes  
checking **for** style of include used by make... GNU  
checking whether make supports nested variables... yes  
checking dependency style of gcc... gcc3  
checking **for** ranlib... ranlib  
checking that generated files are newer than configure... **done**configure: creating ./config.status  
config.status: creating build/Makefile  
config.status: creating Makefile  
config.status: executing depfiles commands  
vladislav@DESKTOP-ODR692H:/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05**$** make  
Making all in build  
make[1]: Entering directory **'/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05/build'**gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Input.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_  
05\_Lib\_a-Input.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Input.o `test -f **'../Lab\_05\_Lib/Input.c' ||** echo **'./'**`../Lab\_05\_Lib/Input  
.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Input.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Input.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ParseInt.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libL  
ab\_05\_Lib\_a-ParseInt.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ParseInt.o `test -f **'../Lab\_05\_Lib/ParseInt.c' ||** echo **'./'**`../Lab\_  
05\_Lib/ParseInt.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ParseInt.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ParseInt.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ReturnCodes.o -MD -MP -MF ../Lab\_05\_Lib/.deps/l  
ibLab\_05\_Lib\_a-ReturnCodes.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ReturnCodes.o `test -f **'../Lab\_05\_Lib/ReturnCodes.c' ||** echo  
**'./'**`../Lab\_05\_Lib/ReturnCodes.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ReturnCodes.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ReturnCodes.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-LastErrorMessage.o -MD -MP -MF ../Lab\_05\_Lib/.d  
eps/libLab\_05\_Lib\_a-LastErrorMessage.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-LastErrorMessage.o `test -f **'../Lab\_05\_Lib/LastErro  
rMessage.c' ||** echo **'./'**`../Lab\_05\_Lib/LastErrorMessage.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-LastErrorMessage.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-LastErrorMessage.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
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ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Request.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLa  
b\_05\_Lib\_a-Request.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Request.o `test -f **'../Lab\_05\_Lib/Request.c' ||** echo **'./'**`../Lab\_05\_L  
ib/Request.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Request.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Request.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Socket.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab  
\_05\_Lib\_a-Socket.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Socket.o `test -f **'../Lab\_05\_Lib/Socket.c' ||** echo **'./'**`../Lab\_05\_Lib/S  
ocket.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Socket.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Socket.Po  
depbase=`echo ../Lab\_05\_MatrixLib/Matrix.o | sed **'s|[^/]\*$|.deps/&|;s|\.o$||'**`;\  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -g -O2 -MT ../Lab\_05\_MatrixLib/Matrix.o -MD -MP -MF $depbase.Tpo -c -o ../Lab\_05\_MatrixLib/Matrix.o ../Lab\_05\_  
MatrixLib/Matrix.c **&&**\  
mv -f $depbase.Tpo $depbase.Po  
rm -f libLab\_05\_MatrixLib.a  
ar cru libLab\_05\_MatrixLib.a ../Lab\_05\_MatrixLib/Matrix.o  
ar: `u**' modifier ignored since `D'** is the default (see `U**')  
ranlib libLab\_05\_MatrixLib.a  
rm -f libLab\_05\_Lib.a  
ar cru libLab\_05\_Lib.a ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Input.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ParseInt.o ../Lab\_05\_Lib/libLab\_05\_Li  
b\_a-ReturnCodes.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-LastErrorMessage.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Request.o ../Lab\_05\_Lib/libLab\_  
05\_Lib\_a-Socket.o libLab\_05\_MatrixLib.a  
ar: `u'** modifier ignored since `D**' is the default (see `U'**)  
ranlib libLab\_05\_Lib.a  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Client/Lab\_05\_Client-Args.o -MD -MP -MF ../Lab\_05\_Cl  
ient/.deps/Lab\_05\_Client-Args.Tpo -c -o ../Lab\_05\_Client/Lab\_05\_Client-Args.o `test -f **'../Lab\_05\_Client/Args.c' ||** echo **'./'**`..  
/Lab\_05\_Client/Args.c  
mv -f ../Lab\_05\_Client/.deps/Lab\_05\_Client-Args.Tpo ../Lab\_05\_Client/.deps/Lab\_05\_Client-Args.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Client/Lab\_05\_Client-Client.o -MD -MP -MF ../Lab\_05\_  
Client/.deps/Lab\_05\_Client-Client.Tpo -c -o ../Lab\_05\_Client/Lab\_05\_Client-Client.o `test -f **'../Lab\_05\_Client/Client.c' ||** echo  
 **'./'**`../Lab\_05\_Client/Client.c  
mv -f ../Lab\_05\_Client/.deps/Lab\_05\_Client-Client.Tpo ../Lab\_05\_Client/.deps/Lab\_05\_Client-Client.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Client/Lab\_05\_Client-main.o -MD -MP -MF ../Lab\_05\_Cl  
ient/.deps/Lab\_05\_Client-main.Tpo -c -o ../Lab\_05\_Client/Lab\_05\_Client-main.o `test -f **'../Lab\_05\_Client/main.c' ||** echo **'./'**`..  
/Lab\_05\_Client/main.c  
mv -f ../Lab\_05\_Client/.deps/Lab\_05\_Client-main.Tpo ../Lab\_05\_Client/.deps/Lab\_05\_Client-main.Po  
gcc -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -o Lab\_05\_Client ../Lab\_05\_Client/Lab\_05\_Client-Args.o ../Lab\_05\_Client/Lab\_0  
5\_Client-Client.o ../Lab\_05\_Client/Lab\_05\_Client-main.o libLab\_05\_MatrixLib.a libLab\_05\_Lib.a  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Server/Lab\_05\_Server-Args.o -MD -MP -MF ../Lab\_05\_Se  
rver/.deps/Lab\_05\_Server-Args.Tpo -c -o ../Lab\_05\_Server/Lab\_05\_Server-Args.o `test -f **'../Lab\_05\_Server/Args.c' ||** echo **'./'**`..  
/Lab\_05\_Server/Args.c  
mv -f ../Lab\_05\_Server/.deps/Lab\_05\_Server-Args.Tpo ../Lab\_05\_Server/.deps/Lab\_05\_Server-Args.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Server/Lab\_05\_Server-Server.o -MD -MP -MF ../Lab\_05\_  
Server/.deps/Lab\_05\_Server-Server.Tpo -c -o ../Lab\_05\_Server/Lab\_05\_Server-Server.o `test -f **'../Lab\_05\_Server/Server.c' ||** echo  
 **'./'**`../Lab\_05\_Server/Server.c  
mv -f ../Lab\_05\_Server/.deps/Lab\_05\_Server-Server.Tpo ../Lab\_05\_Server/.deps/Lab\_05\_Server-Server.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_  
BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H  
=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_IN  
ET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STD  
LIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB  
\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSIO  
N=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Server/Lab\_05\_Server-main.o -MD -MP -MF ../Lab\_05\_Se  
rver/.deps/Lab\_05\_Server-main.Tpo -c -o ../Lab\_05\_Server/Lab\_05\_Server-main.o `test -f **'../Lab\_05\_Server/main.c' ||** echo **'./'**`..  
/Lab\_05\_Server/main.c  
mv -f ../Lab\_05\_Server/.deps/Lab\_05\_Server-main.Tpo ../Lab\_05\_Server/.deps/Lab\_05\_Server-main.Po  
gcc -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -o Lab\_05\_Server ../Lab\_05\_Server/Lab\_05\_Server-Args.o ../Lab\_05\_Server/Lab\_0  
5\_Server-Server.o ../Lab\_05\_Server/Lab\_05\_Server-main.o libLab\_05\_MatrixLib.a libLab\_05\_Lib.a  
make[1]: Leaving directory **'/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05/build'**make[1]: Entering directory **'/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05'**make[1]: Nothing to be **done for 'all-am'**.  
make[1]: Leaving directory **'/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05'**vladislav@DESKTOP-ODR692H:/mnt/c/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05**$**

### Запуск клиента без запущенного сервера



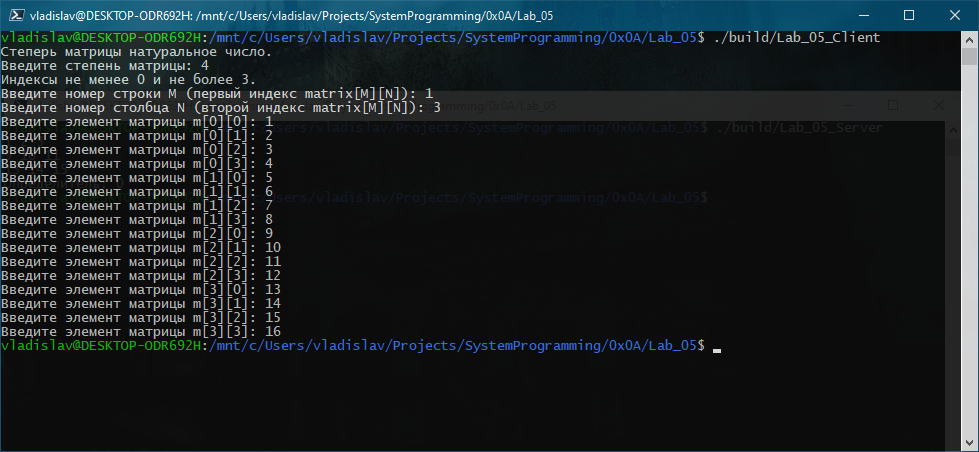
1. Ошибка если сервер не запущен

### Запуск сервера



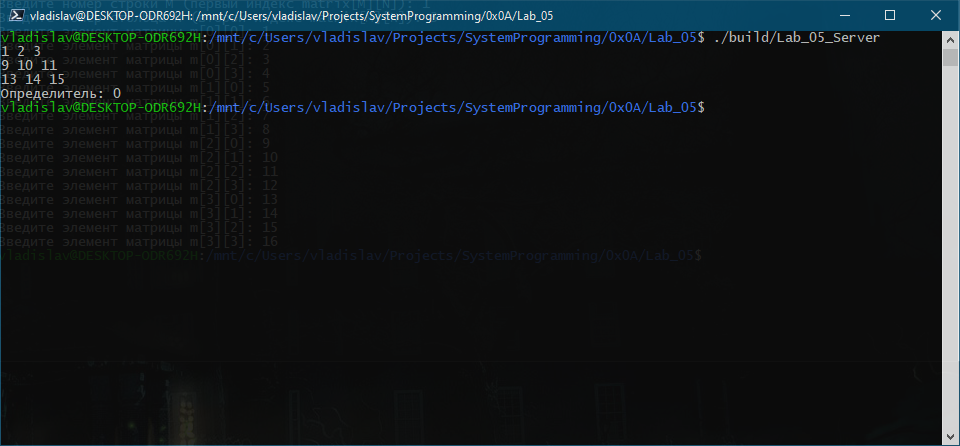
1. Сервер ожидает подключения от клиента

### Запуск клиента



1. Клиент считал данные, передал и успешно завершился

### Результат работы сервера



1. Сервер принял, вычислил, вывел результат и успешно завершился

## Запуск №2 (Клиент – Windows, MSVC; удалённый сервер – Ubuntu 16.04, GCC)

### Сборка с помощью autotools на удалённом сервере

vladislav@MySandbox:~/Projects/SystemProgramming/0x0A/Lab\_05**$** ./configure  
checking **for** gcc... gcc  
checking whether the C compiler works... yes  
checking **for** C compiler default output file name... a.out  
checking **for** suffix of executables...  
checking whether we are cross compiling... no  
checking **for** suffix of object files... o  
checking whether we are using the GNU C compiler... yes  
checking whether gcc accepts -g... yes  
checking **for** gcc option to accept ISO C89... none needed  
checking whether gcc understands -c and -o together... yes  
checking how to run the C preprocessor... gcc -E  
checking **for** grep that handles long lines and -e... /bin/grep  
checking **for** egrep... /bin/grep -E  
checking **for** ANSI C header files... yes  
checking **for** sys/types.h... yes  
checking **for** sys/stat.h... yes  
checking **for** stdlib.h... yes  
checking **for** string.h... yes  
checking **for** memory.h... yes  
checking **for** strings.h... yes  
checking **for** inttypes.h... yes  
checking **for** stdint.h... yes  
checking **for** unistd.h... yes  
checking arpa/inet.h usability... yes  
checking arpa/inet.h presence... yes  
checking **for** arpa/inet.h... yes  
checking fcntl.h usability... yes  
checking fcntl.h presence... yes  
checking **for** fcntl.h... yes  
checking limits.h usability... yes  
checking limits.h presence... yes  
checking **for** limits.h... yes  
checking malloc.h usability... yes  
checking malloc.h presence... yes  
checking **for** malloc.h... yes  
checking netinet/in.h usability... yes  
checking netinet/in.h presence... yes  
checking **for** netinet/in.h... yes  
checking stddef.h usability... yes  
checking stddef.h presence... yes  
checking **for** stddef.h... yes  
checking **for** stdint.h... (cached) yes  
checking **for** stdlib.h... (cached) yes  
checking **for** string.h... (cached) yes  
checking sys/socket.h usability... yes  
checking sys/socket.h presence... yes  
checking **for** sys/socket.h... yes  
checking **for** unistd.h... (cached) yes  
checking **for** stdbool.h that conforms to C99... yes  
checking **for** \_Bool... yes  
checking **for** size\_t... yes  
checking **for** uint16\_t... yes  
checking **for** uint32\_t... yes  
checking **for** stdlib.h... (cached) yes  
checking **for** GNU libc compatible malloc... yes  
checking **for** stdlib.h... (cached) yes  
checking **for** GNU libc compatible realloc... yes  
checking whether strerror\_r is declared... yes  
checking **for** strerror\_r... yes  
checking whether strerror\_r returns char \*... no  
checking **for** socket... yes  
checking **for** strchr... yes  
checking **for** a BSD-compatible install... /usr/bin/install -c  
checking whether build environment is sane... yes  
checking **for** a thread-safe mkdir -p... /bin/mkdir -p  
checking **for** gawk... no  
checking **for** mawk... mawk  
checking whether make sets **$**(MAKE)... yes  
checking **for** style of include used by make... GNU  
checking whether make supports nested variables... yes  
checking dependency style of gcc... gcc3  
checking **for** ranlib... ranlib  
checking that generated files are newer than configure... **done**configure: creating ./config.status  
config.status: creating build/Makefile  
config.status: creating Makefile  
config.status: executing depfiles commands  
vladislav@MySandbox:~/Projects/SystemProgramming/0x0A/Lab\_05**$** make  
Making all in build  
make[1]: Entering directory **'/home/vladislav/Projects/SystemProgramming/0x0A/Lab\_05/build'**gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Input.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Input.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Input.o `test -f **'../Lab\_05\_Lib/Input.c' ||** echo **'./'**`../Lab\_05\_Lib/Input.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Input.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Input.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ParseInt.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ParseInt.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ParseInt.o `test -f **'../Lab\_05\_Lib/ParseInt.c' ||** echo **'./'**`../Lab\_05\_Lib/ParseInt.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ParseInt.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ParseInt.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ReturnCodes.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ReturnCodes.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ReturnCodes.o `test -f **'../Lab\_05\_Lib/ReturnCodes.c' ||** echo **'./'**`../Lab\_05\_Lib/ReturnCodes.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ReturnCodes.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-ReturnCodes.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-LastErrorMessage.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-LastErrorMessage.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-LastErrorMessage.o `test -f **'../Lab\_05\_Lib/LastErrorMessage.c' ||** echo **'./'**`../Lab\_05\_Lib/LastErrorMessage.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-LastErrorMessage.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-LastErrorMessage.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Request.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Request.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Request.o `test -f **'../Lab\_05\_Lib/Request.c' ||** echo **'./'**`../Lab\_05\_Lib/Request.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Request.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Request.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -g -O2 -MT ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Socket.o -MD -MP -MF ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Socket.Tpo -c -o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Socket.o `test -f **'../Lab\_05\_Lib/Socket.c' ||** echo **'./'**`../Lab\_05\_Lib/Socket.c  
mv -f ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Socket.Tpo ../Lab\_05\_Lib/.deps/libLab\_05\_Lib\_a-Socket.Po  
depbase=`echo ../Lab\_05\_MatrixLib/Matrix.o | sed **'s|[^/]\*$|.deps/&|;s|\.o$||'**`;\  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -g -O2 -MT ../Lab\_05\_MatrixLib/Matrix.o -MD -MP -MF $depbase.Tpo -c -o ../Lab\_05\_MatrixLib/Matrix.o ../Lab\_05\_MatrixLib/Matrix.c **&&**\  
mv -f $depbase.Tpo $depbase.Po  
rm -f libLab\_05\_MatrixLib.a  
ar cru libLab\_05\_MatrixLib.a ../Lab\_05\_MatrixLib/Matrix.o  
ar: `u**' modifier ignored since `D'** is the default (see `U**')  
ranlib libLab\_05\_MatrixLib.a  
rm -f libLab\_05\_Lib.a  
ar cru libLab\_05\_Lib.a ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Input.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ParseInt.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-ReturnCodes.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-LastErrorMessage.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Request.o ../Lab\_05\_Lib/libLab\_05\_Lib\_a-Socket.o libLab\_05\_MatrixLib.a  
ar: `u'** modifier ignored since `D**' is the default (see `U'**)  
ranlib libLab\_05\_Lib.a  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Client/Lab\_05\_Client-Args.o -MD -MP -MF ../Lab\_05\_Client/.deps/Lab\_05\_Client-Args.Tpo -c -o ../Lab\_05\_Client/Lab\_05\_Client-Args.o `test -f **'../Lab\_05\_Client/Args.c' ||** echo **'./'**`../Lab\_05\_Client/Args.c  
mv -f ../Lab\_05\_Client/.deps/Lab\_05\_Client-Args.Tpo ../Lab\_05\_Client/.deps/Lab\_05\_Client-Args.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Client/Lab\_05\_Client-Client.o -MD -MP -MF ../Lab\_05\_Client/.deps/Lab\_05\_Client-Client.Tpo -c -o ../Lab\_05\_Client/Lab\_05\_Client-Client.o `test -f **'../Lab\_05\_Client/Client.c' ||** echo **'./'**`../Lab\_05\_Client/Client.c  
mv -f ../Lab\_05\_Client/.deps/Lab\_05\_Client-Client.Tpo ../Lab\_05\_Client/.deps/Lab\_05\_Client-Client.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Client/Lab\_05\_Client-main.o -MD -MP -MF ../Lab\_05\_Client/.deps/Lab\_05\_Client-main.Tpo -c -o ../Lab\_05\_Client/Lab\_05\_Client-main.o `test -f **'../Lab\_05\_Client/main.c' ||** echo **'./'**`../Lab\_05\_Client/main.c  
mv -f ../Lab\_05\_Client/.deps/Lab\_05\_Client-main.Tpo ../Lab\_05\_Client/.deps/Lab\_05\_Client-main.Po  
gcc -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -o Lab\_05\_Client ../Lab\_05\_Client/Lab\_05\_Client-Args.o ../Lab\_05\_Client/Lab\_05\_Client-Client.o ../Lab\_05\_Client/Lab\_05\_Client-main.o libLab\_05\_MatrixLib.a libLab\_05\_Lib.a  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Server/Lab\_05\_Server-Args.o -MD -MP -MF ../Lab\_05\_Server/.deps/Lab\_05\_Server-Args.Tpo -c -o ../Lab\_05\_Server/Lab\_05\_Server-Args.o `test -f **'../Lab\_05\_Server/Args.c' ||** echo **'./'**`../Lab\_05\_Server/Args.c  
mv -f ../Lab\_05\_Server/.deps/Lab\_05\_Server-Args.Tpo ../Lab\_05\_Server/.deps/Lab\_05\_Server-Args.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Server/Lab\_05\_Server-Server.o -MD -MP -MF ../Lab\_05\_Server/.deps/Lab\_05\_Server-Server.Tpo -c -o ../Lab\_05\_Server/Lab\_05\_Server-Server.o `test -f **'../Lab\_05\_Server/Server.c' ||** echo **'./'**`../Lab\_05\_Server/Server.c  
mv -f ../Lab\_05\_Server/.deps/Lab\_05\_Server-Server.Tpo ../Lab\_05\_Server/.deps/Lab\_05\_Server-Server.Po  
gcc -DPACKAGE\_NAME=\"Lab\_05\" -DPACKAGE\_TARNAME=\"lab\_05\" -DPACKAGE\_VERSION=\"0.1\" -DPACKAGE\_STRING=\"Lab\_05\ 0.1\" -DPACKAGE\_BUGREPORT=\"misterptits@yandex.ru\" -DPACKAGE\_URL=\"\" -DSTDC\_HEADERS=1 -DHAVE\_SYS\_TYPES\_H=1 -DHAVE\_SYS\_STAT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_MEMORY\_H=1 -DHAVE\_STRINGS\_H=1 -DHAVE\_INTTYPES\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_ARPA\_INET\_H=1 -DHAVE\_FCNTL\_H=1 -DHAVE\_LIMITS\_H=1 -DHAVE\_MALLOC\_H=1 -DHAVE\_NETINET\_IN\_H=1 -DHAVE\_STDDEF\_H=1 -DHAVE\_STDINT\_H=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_STRING\_H=1 -DHAVE\_SYS\_SOCKET\_H=1 -DHAVE\_UNISTD\_H=1 -DHAVE\_\_BOOL=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_MALLOC=1 -DHAVE\_STDLIB\_H=1 -DHAVE\_REALLOC=1 -DHAVE\_DECL\_STRERROR\_R=1 -DHAVE\_STRERROR\_R=1 -DHAVE\_SOCKET=1 -DHAVE\_STRCHR=1 -DPACKAGE=\"lab\_05\" -DVERSION=\"0.1\" -I. -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -MT ../Lab\_05\_Server/Lab\_05\_Server-main.o -MD -MP -MF ../Lab\_05\_Server/.deps/Lab\_05\_Server-main.Tpo -c -o ../Lab\_05\_Server/Lab\_05\_Server-main.o `test -f **'../Lab\_05\_Server/main.c' ||** echo **'./'**`../Lab\_05\_Server/main.c  
mv -f ../Lab\_05\_Server/.deps/Lab\_05\_Server-main.Tpo ../Lab\_05\_Server/.deps/Lab\_05\_Server-main.Po  
gcc -I../Lab\_05\_MatrixLib -I../Lab\_05\_Lib -g -O2 -o Lab\_05\_Server ../Lab\_05\_Server/Lab\_05\_Server-Args.o ../Lab\_05\_Server/Lab\_05\_Server-Server.o ../Lab\_05\_Server/Lab\_05\_Server-main.o libLab\_05\_MatrixLib.a libLab\_05\_Lib.a  
make[1]: Leaving directory **'/home/vladislav/Projects/SystemProgramming/0x0A/Lab\_05/build'**make[1]: Entering directory **'/home/vladislav/Projects/SystemProgramming/0x0A/Lab\_05'**make[1]: Nothing to be **done for 'all-am'**.  
make[1]: Leaving directory **'/home/vladislav/Projects/SystemProgramming/0x0A/Lab\_05'**

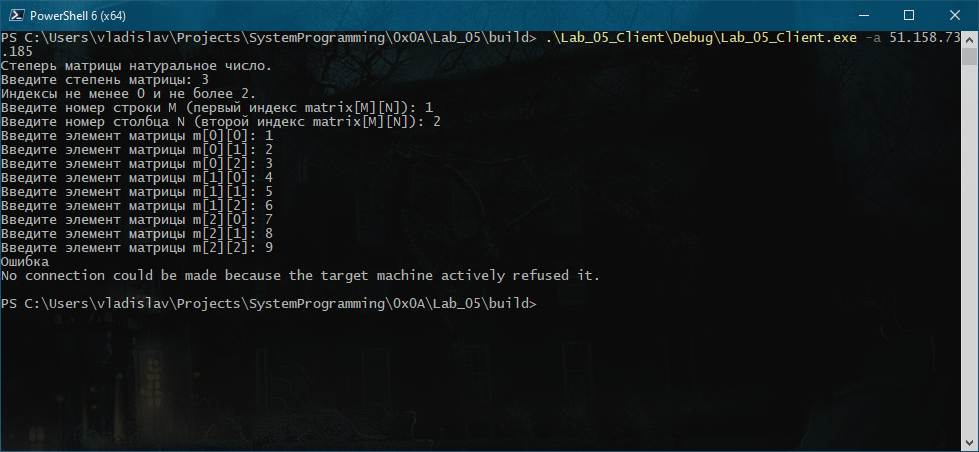
### Сборка на клиенте с помощью CMake и msbuild

PS C:\Users\vladislav\Projects\SystemProgramming\0x0A\Lab\_05\build**>** cmake .. -- Building for: Visual Studio 16 2019  
-- Selecting Windows SDK version 10.0.18362.0 to target Windows 10.0.18363.  
-- The C compiler identification is MSVC 19.24.28207.0  
-- The CXX compiler identification is MSVC 19.24.28207.0  
-- Check **for** working C compiler: C:/Program Files (x86)/Microsoft Visual Studio/2019/Preview/VC/Tools/MSVC/14.24.28207/bin/Hostx64/x64/cl.exe  
-- Check **for** working C compiler: C:/Program Files (x86)/Microsoft Visual Studio/2019/Preview/VC/Tools/MSVC/14.24.28207/bin/Hostx64/x64/cl.exe -- works  
-- Detecting C compiler ABI info  
-- Detecting C compiler ABI info - **done**-- Detecting C compile features  
-- Detecting C compile features - **done**-- Check **for** working CXX compiler: C:/Program Files (x86)/Microsoft Visual Studio/2019/Preview/VC/Tools/MSVC/14.24.28207/bin/Hostx64/x64/cl.exe  
-- Check **for** working CXX compiler: C:/Program Files (x86)/Microsoft Visual Studio/2019/Preview/VC/Tools/MSVC/14.24.28207/bin/Hostx64/x64/cl.exe -- works  
-- Detecting CXX compiler ABI info  
-- Detecting CXX compiler ABI info - **done**-- Detecting CXX compile features  
-- Detecting CXX compile features - **done**-- Configuring **done**-- Generating **done**-- Build files have been written to: C:/Users/vladislav/Projects/SystemProgramming/0x0A/Lab\_05/build  
PS C:\Users\vladislav\Projects\SystemProgramming\0x0A\Lab\_05\build**>** msbuild .\ALL\_BUILD.vcxproj Microsoft (R) Build Engine version 16.4.0-preview-19502-03+3af680463 **for** .NET Framework  
Copyright (C) Microsoft Corporation. All rights reserved.  
  
Build started 19.11.2019 21:50:58.

Пропущена работа msbuild

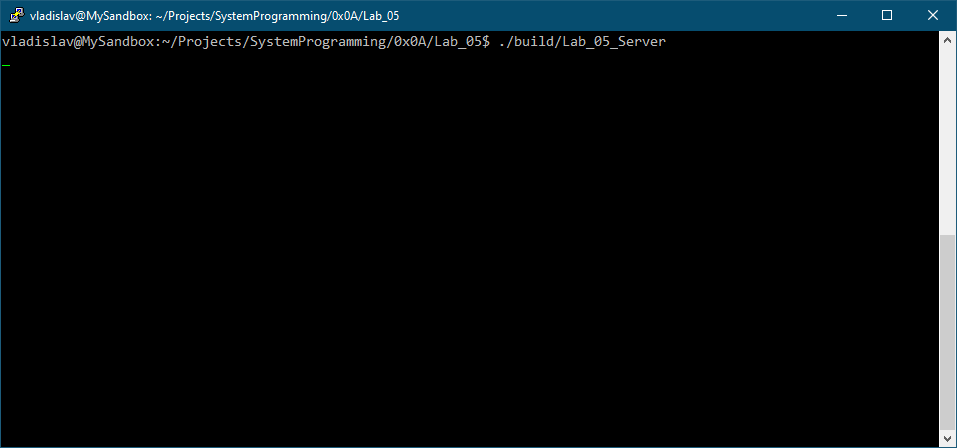
**20 Warning(s)  
 0 Error(s)  
  
Time Elapsed 00:00:06.55**

### Запуск клиента без запущенного сервера



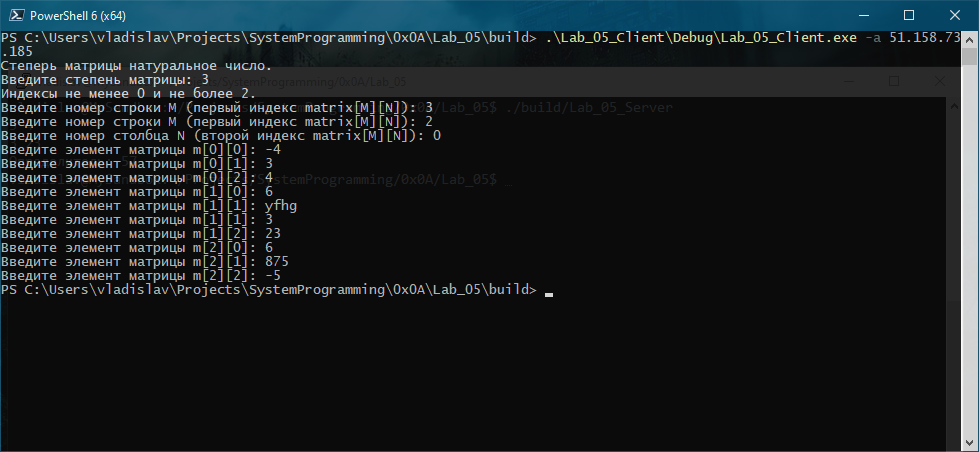
1. Ошибка если сервер не запущен

### Запуск сервера



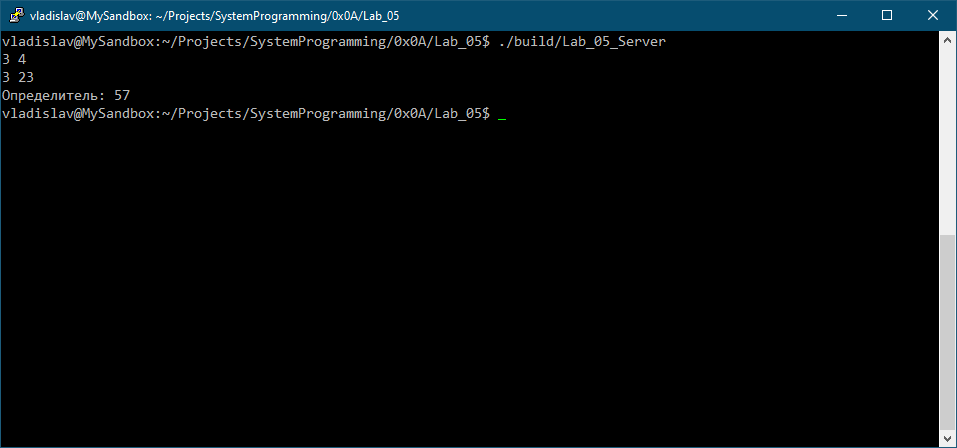
1. Сервер ожидает подключения от клиента

### Запуск клиента



1. Клиент считал данные, передал и успешно завершился

### Результат работы сервера



1. Сервер принял, вычислил, вывел результат и успешно завершился