

GUIDE

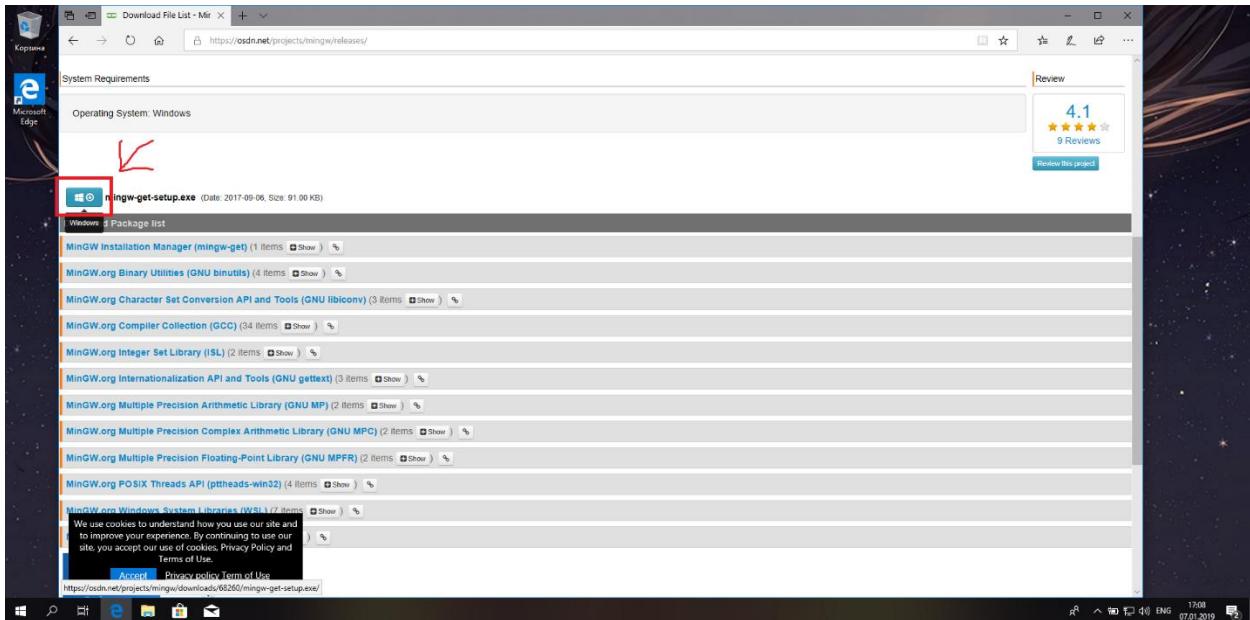
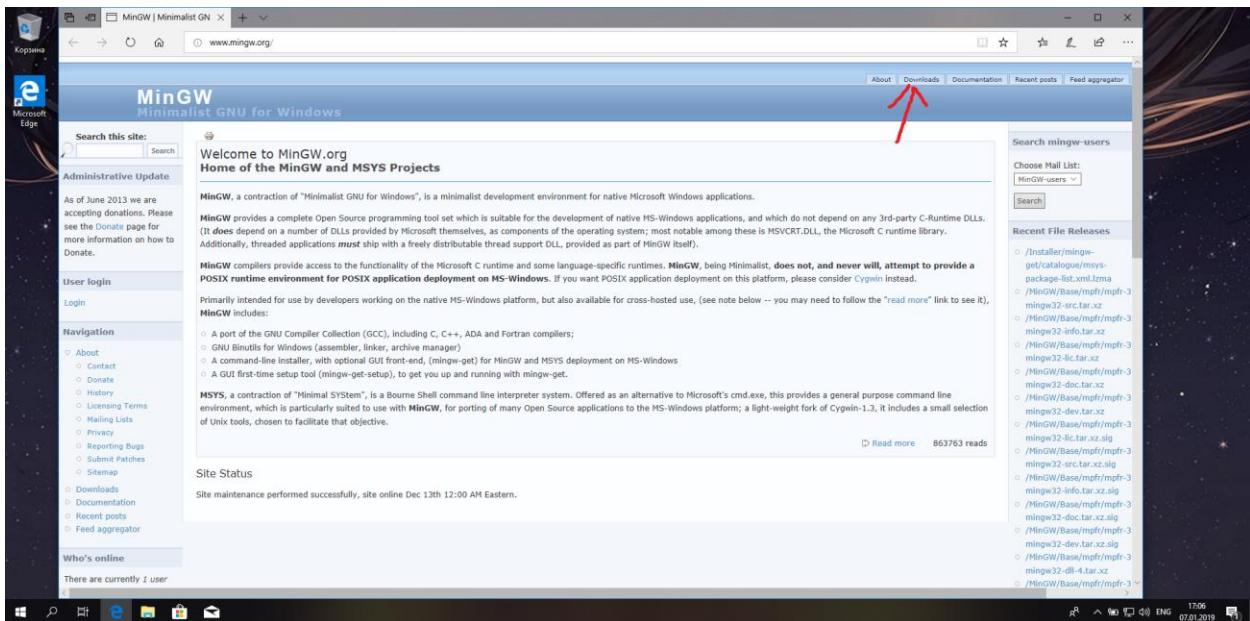
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Development tools for Windows(10) installation

C\ C++ compiler and CMake installation

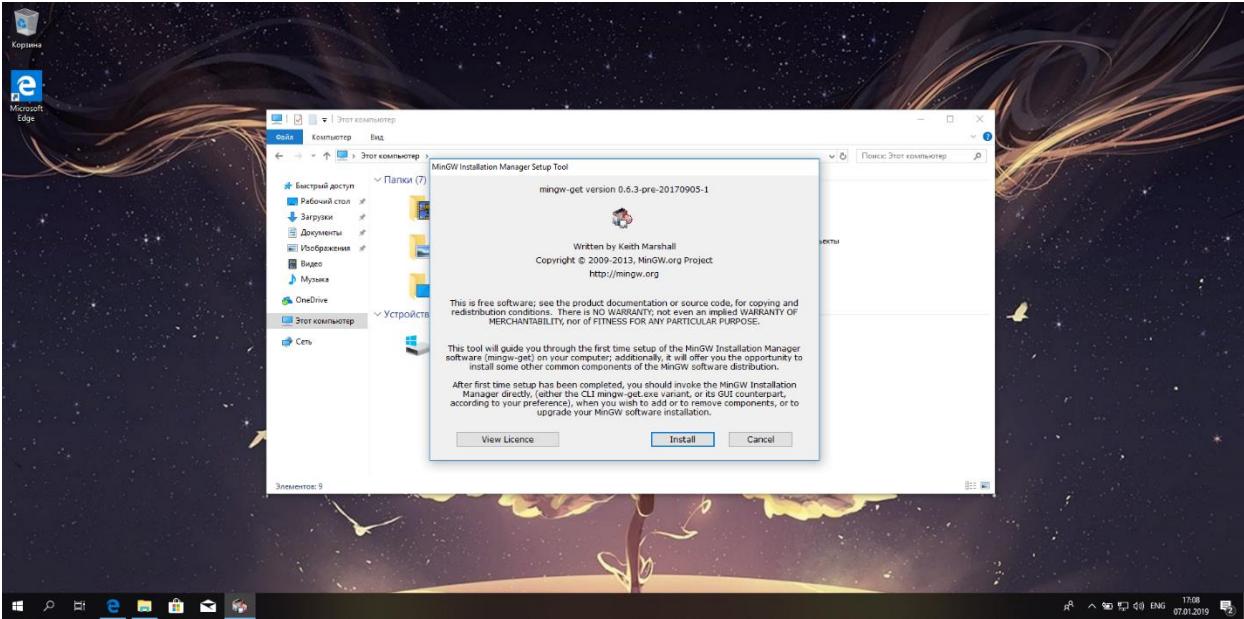
Mingw download

<http://mingw.org/>

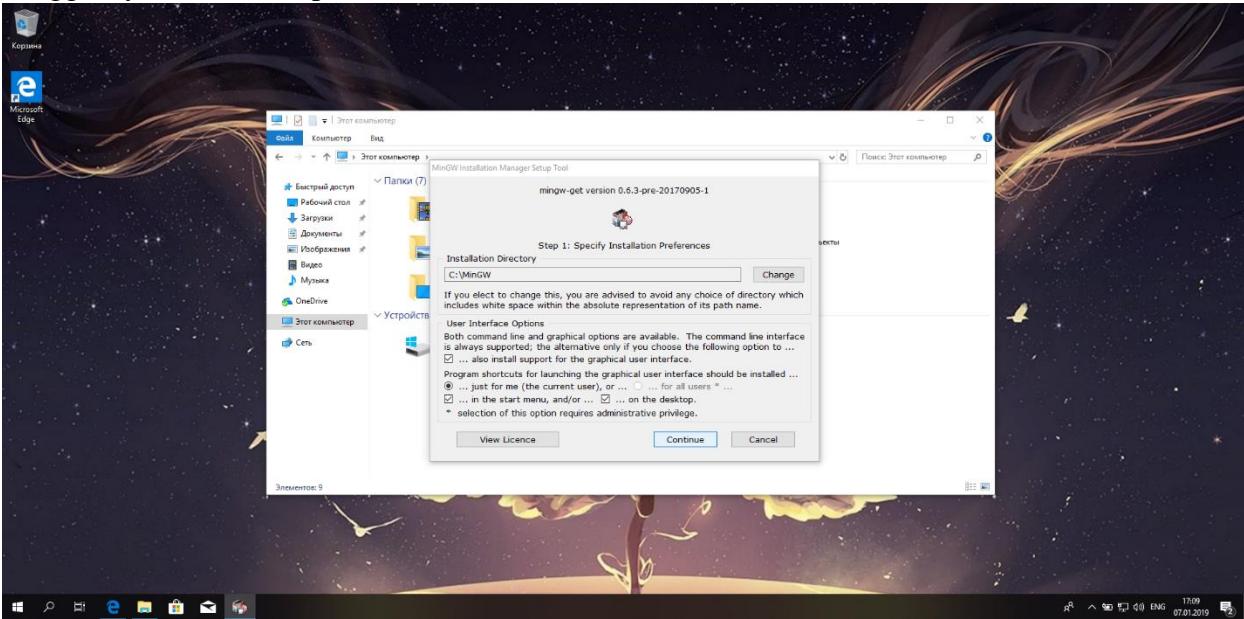


Mingw installation

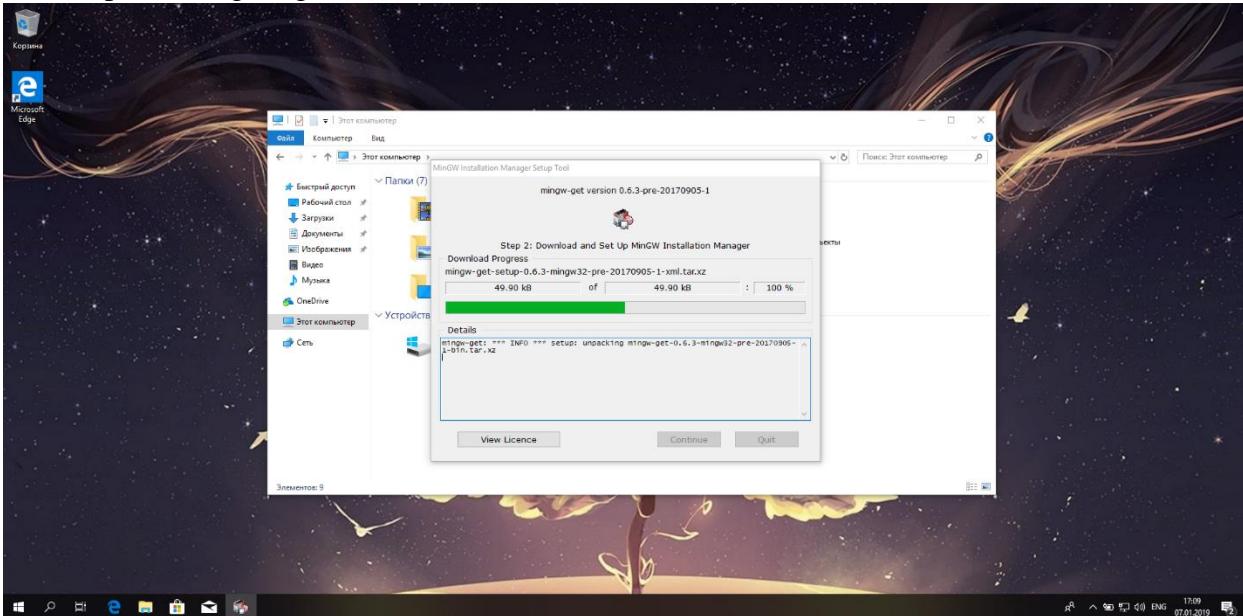
Click install



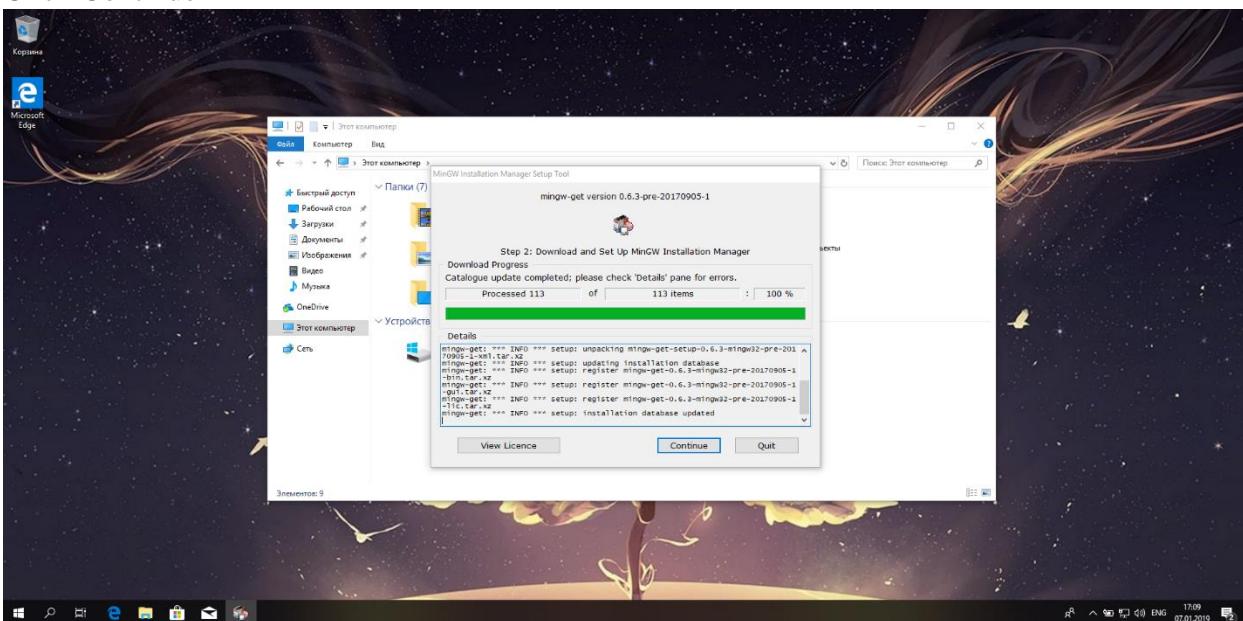
I suggest you leave all options as on this screenshot



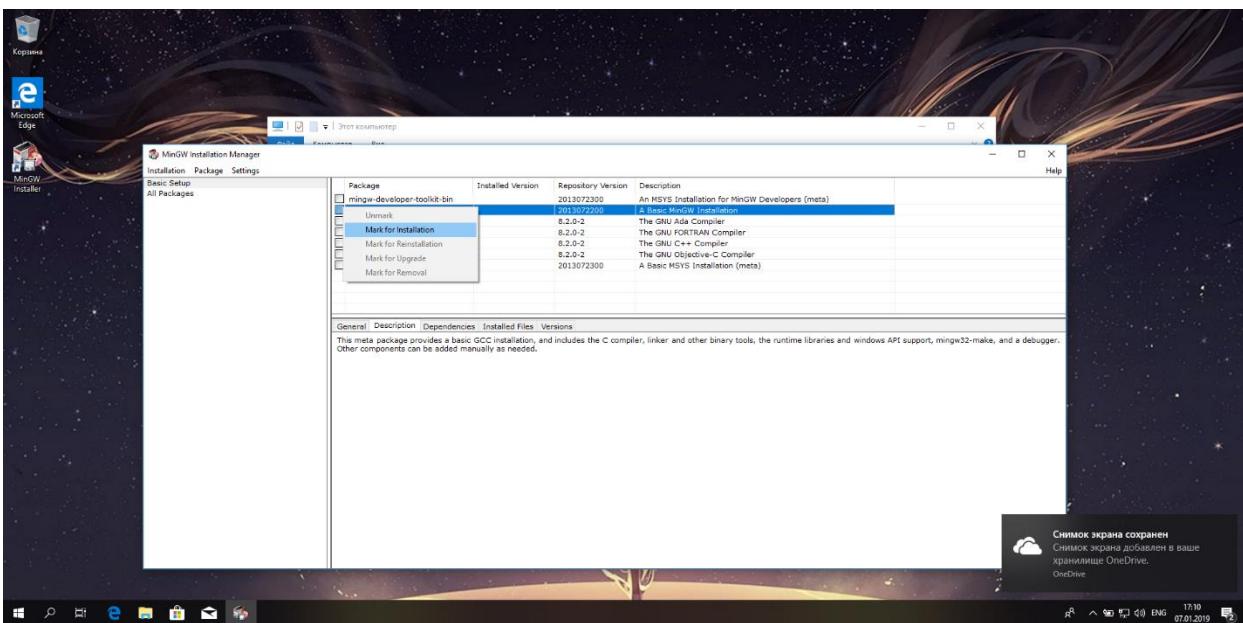
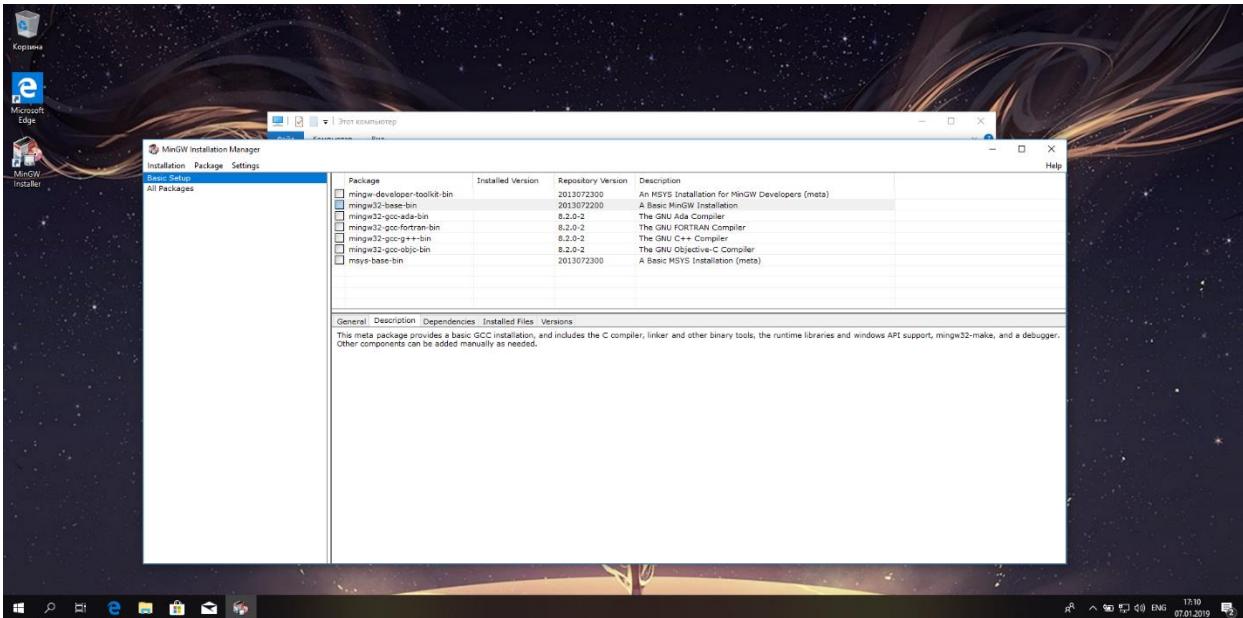
Just keep watching on green bar



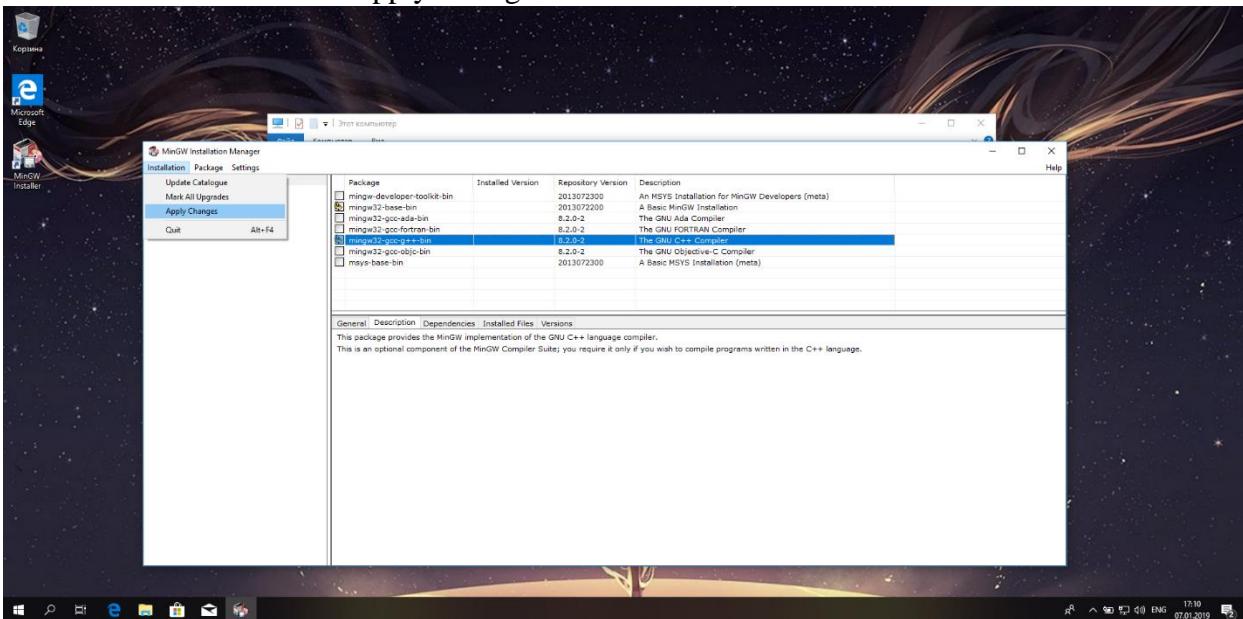
Click Continue



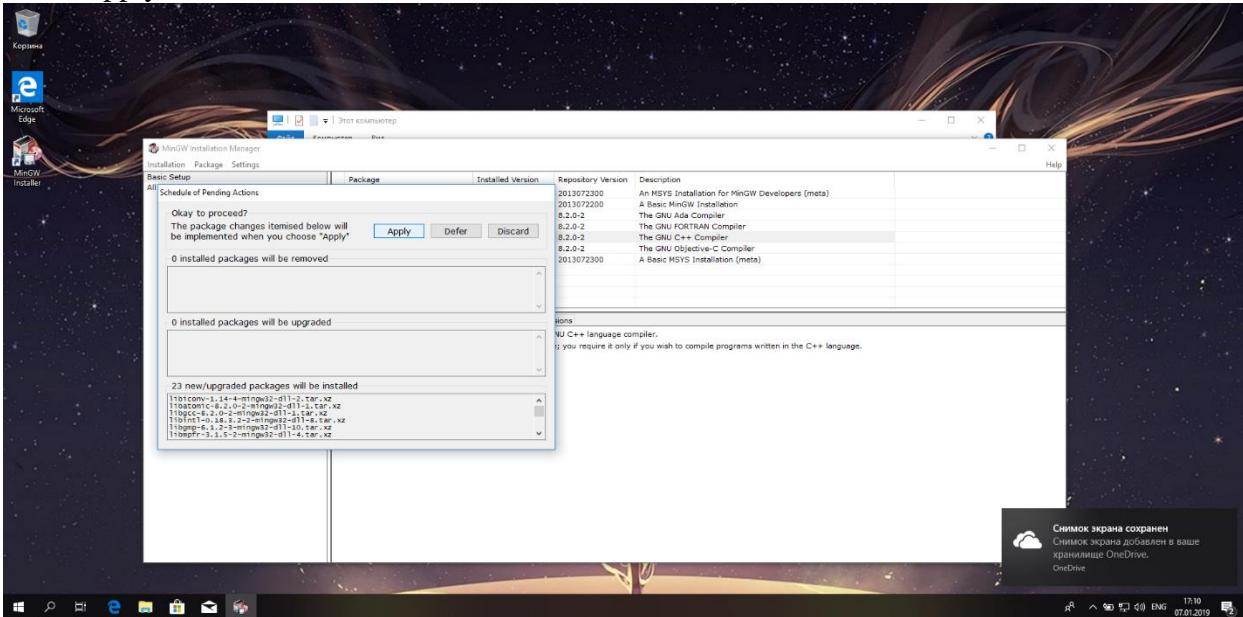
Then you'll see this window. We need to install only mingw32-base-bin and mingw32-gcc-g++-bin



Click Installation and then Apply Changes

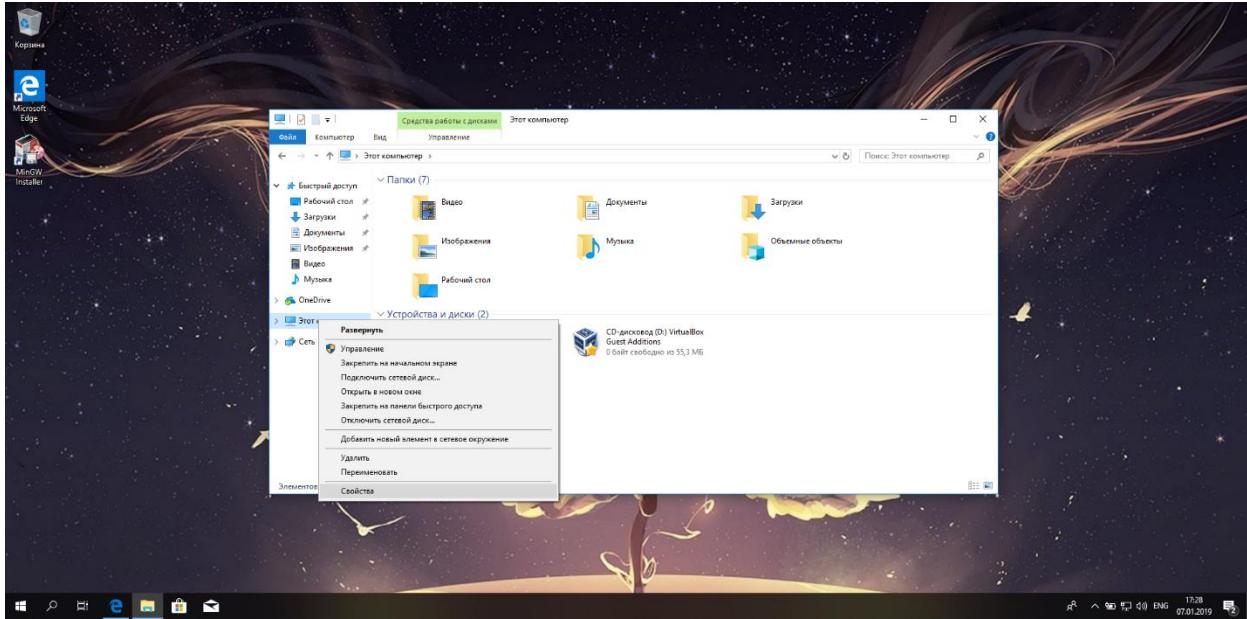


Click Apply

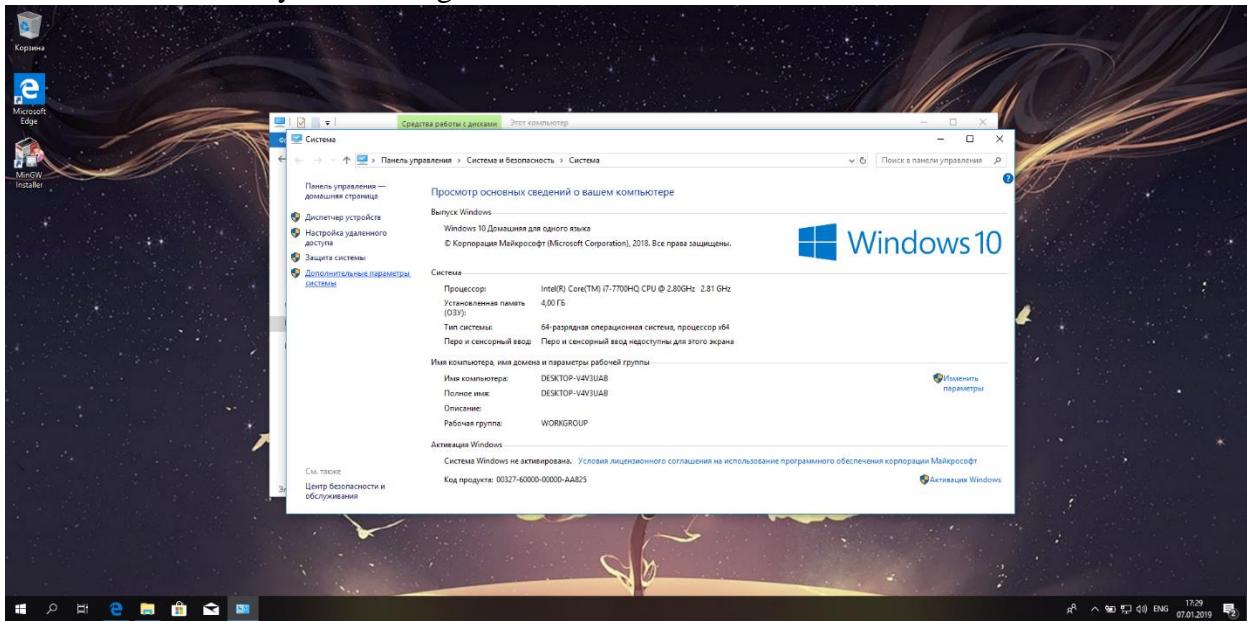


Adding Mingw compilers' folder to PATH variable

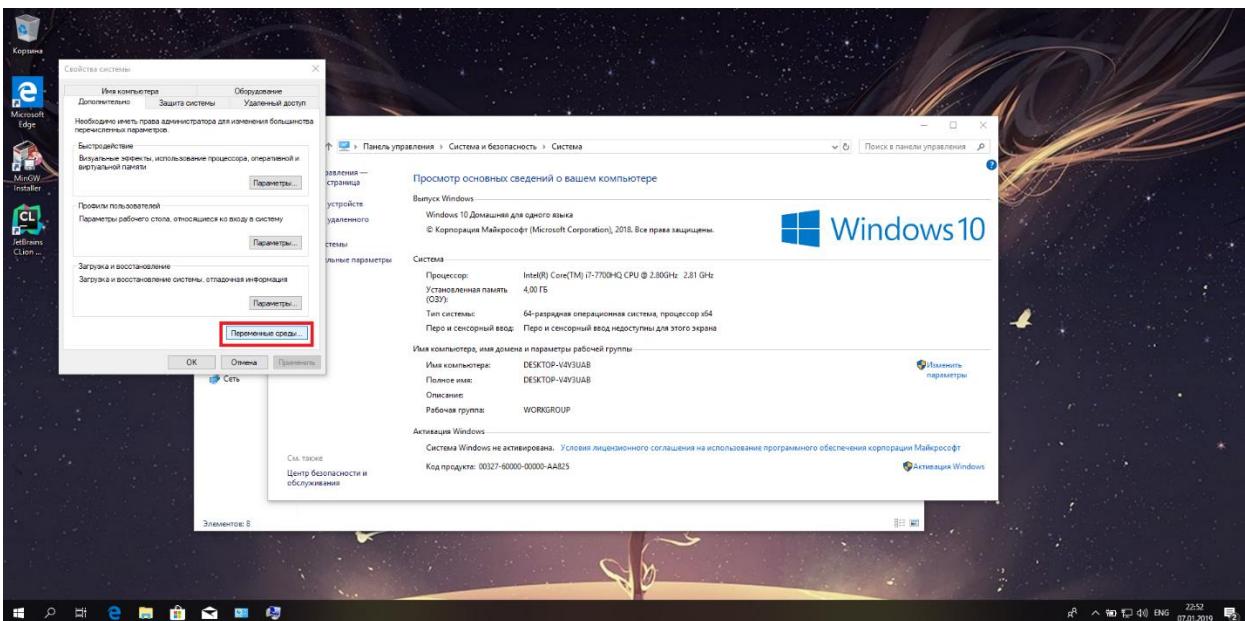
Rightclick on This PC and then Properties



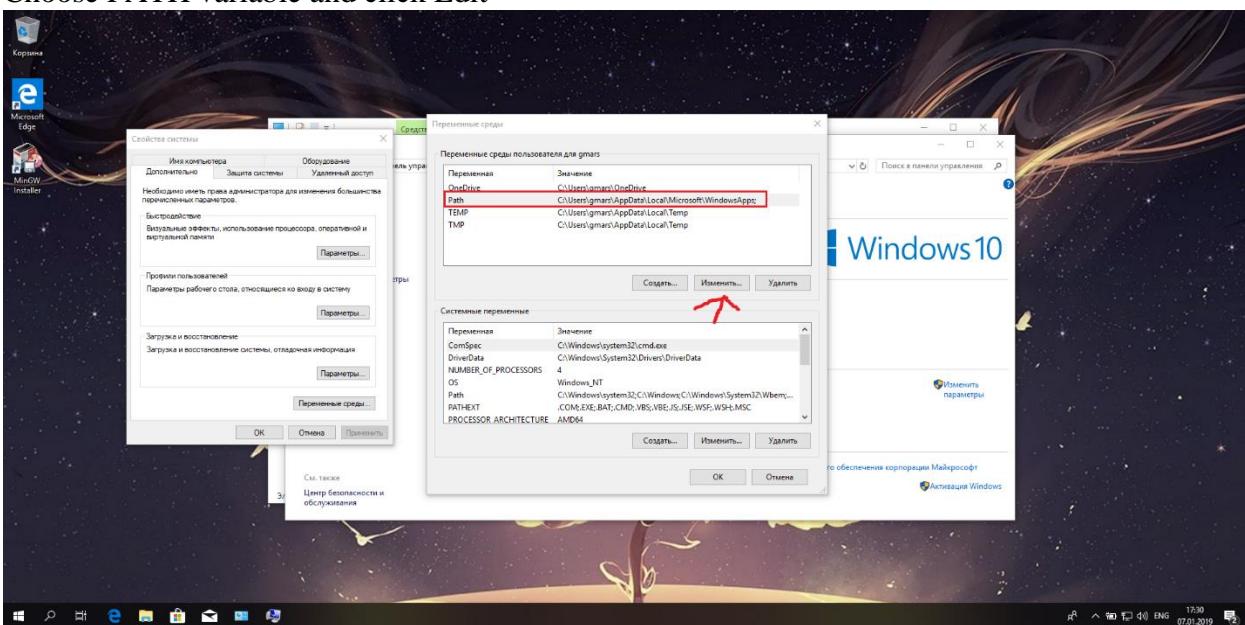
Click on Advanced System Settings



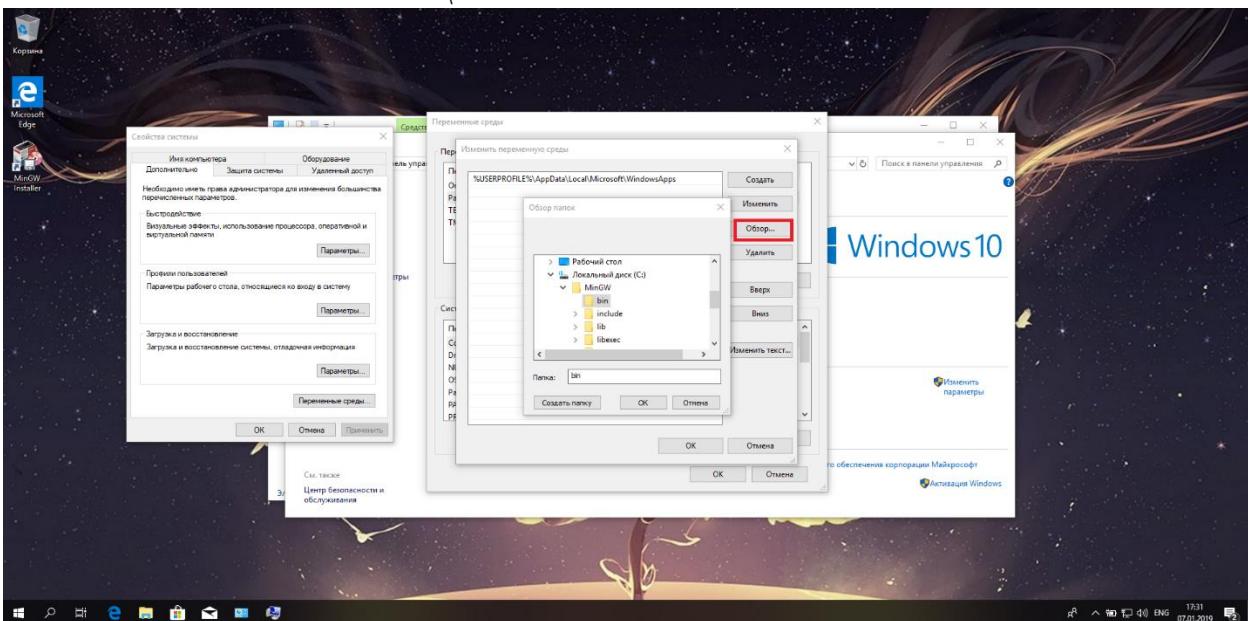
Click on Environment Variables



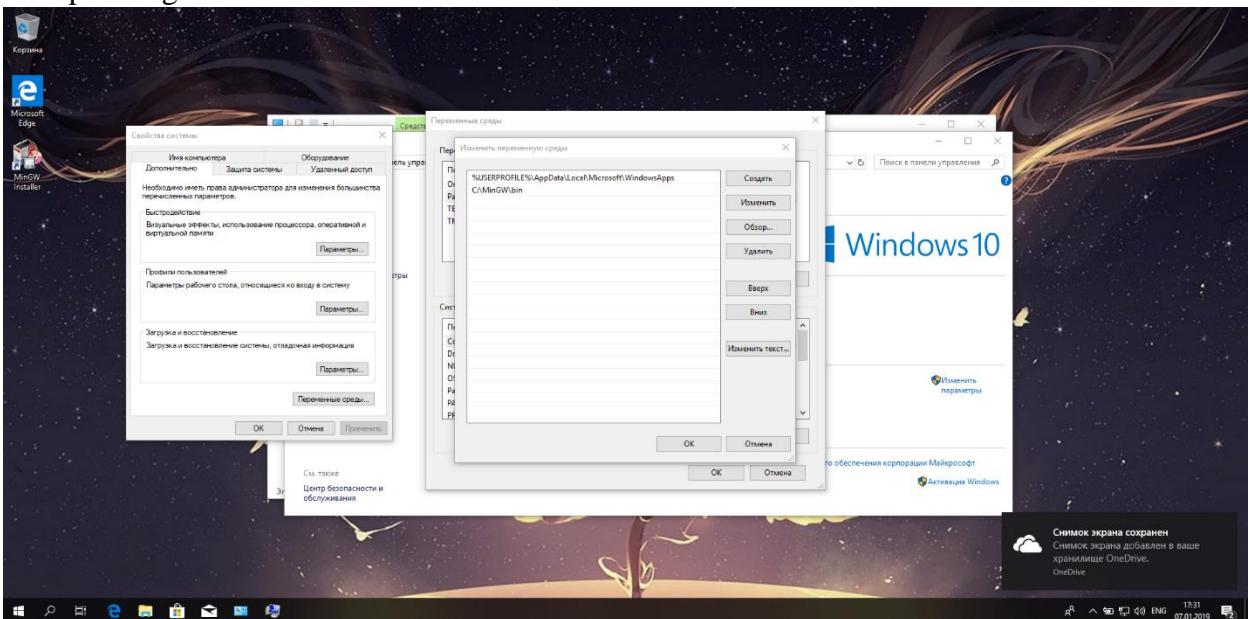
Choose PATH variable and click Edit



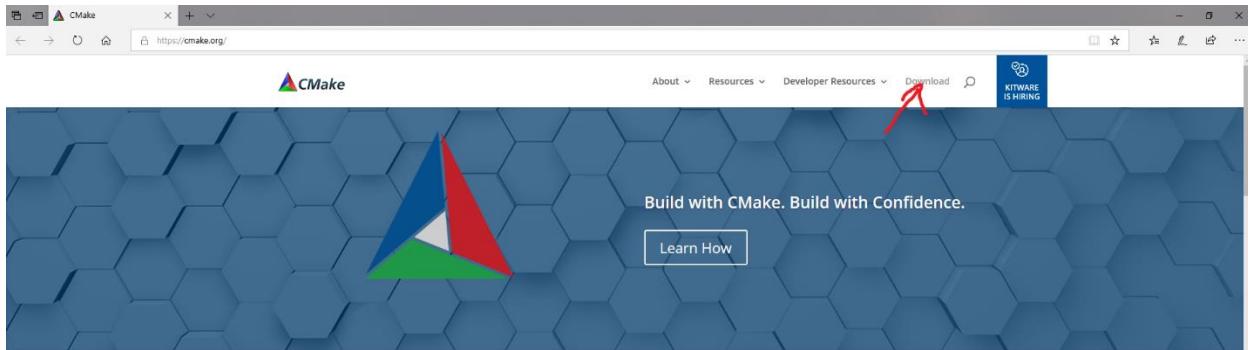
Click Browse and choose MinGW\bin folder



Accept changes



CMake download



CMake is an open-source, cross-platform family of tools designed to build, test and package software. CMake is used to control the software compilation process using simple platform and compiler independent configuration files, and generate native makefiles and workspaces that can be used in the compiler environment of your choice. The suite of CMake tools were created by Kitware in response to the need for a powerful, cross-platform build environment for open-source projects such as ITK and VTK.

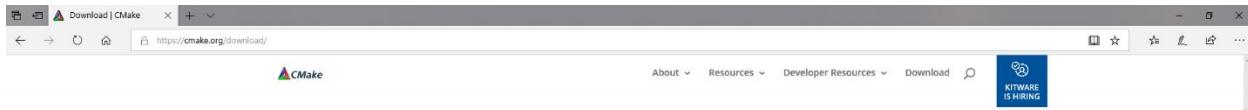
CMake is part of Kitware's collection of commercially supported [open-source platforms](#) for software development.



Recent Posts

CMake 3.13.2 available for download

We are pleased to announce that CMake 3.13.2 is now available for download. Please use the latest release from our download page: <https://cmake.org/download/> CMake 3.13.0 ... [Read More](#)



Latest Release (3.13.2)

The release was packaged with CPack which is included as part of the release. The .sh files are self extracting gzipped tar files. To install a .sh file, run it with /bin/sh and follow the directions. The OS-machine.tar.gz files are gzipped tar files of the install tree. The OS-machine.tar.Z files are compressed tar files of the install tree. The tar file distributions can be untared in any directory. They are prefixed by the version of CMake. For example, the Linux-x86_64.tar file is all under the directory cmake-Linux-x86_64. This prefix can be removed as long as the share, bin, man and doc directories are moved relative to each other. To build the source distributions: unpack them with zip or tar and follow the instructions in Readme.txt at the top of the source tree. See also the CMake 3.13 Release Notes. Source distributions:

Platform	Files
Unix/Linux Source (has \n line feeds)	cmake-3.13.2.tar.gz cmake-3.13.2.tar.Z
Windows Source (has \r\n line feeds)	cmake-3.13.2.zip

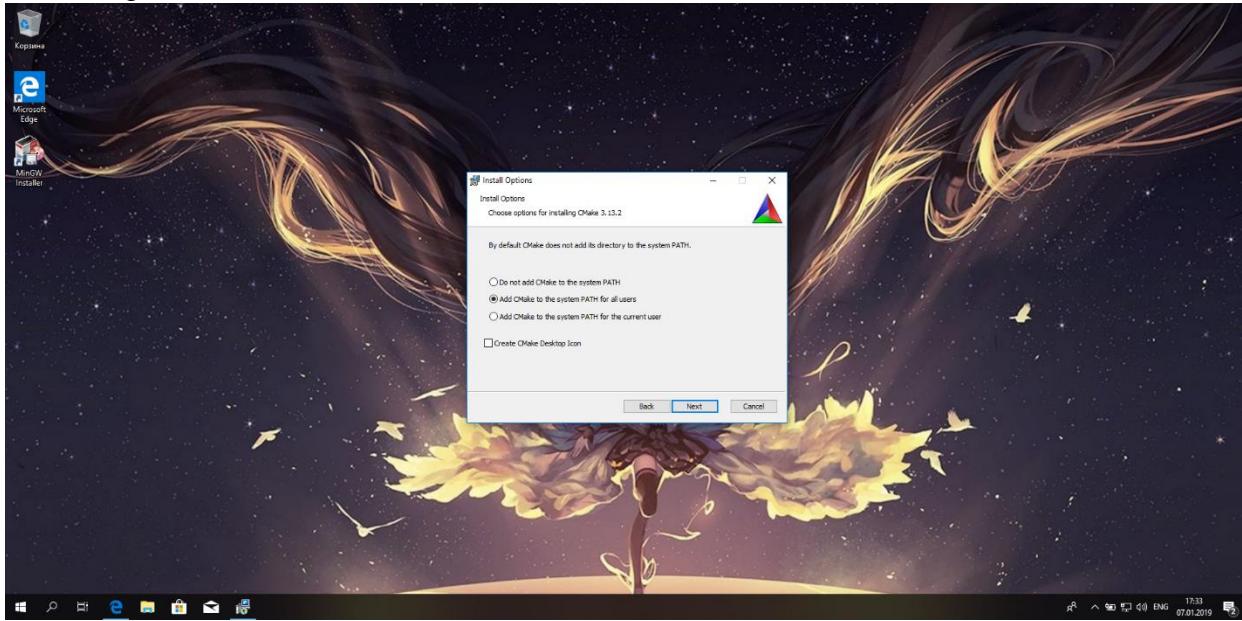
Binary distributions:

Platform	Files
Windows win64-x64 Installer: Installer tool has changed. Uninstall CMake 3.4 or lower first!	cmake-3.13.2-win64-x64.msi
Windows win64-x64 ZIP	cmake-3.13.2-win64-x64.zip
Windows win32-x86 Installer: Installer tool has changed. Uninstall CMake 3.4 or lower first!	cmake-3.13.2-win32-x86.msi
Windows win32-x86 ZIP	cmake-3.13.2-win32-x86.zip
Mac OS X 10.7 or later	cmake-3.13.2-Darwin-x86_64.dmg cmake-3.13.2-Darwin-x86_64.tar.gz
Linux x86_64	cmake-3.13.2-Linux-x86_64.sh cmake-3.13.2-Linux-x86_64.tar.gz



CMake installation

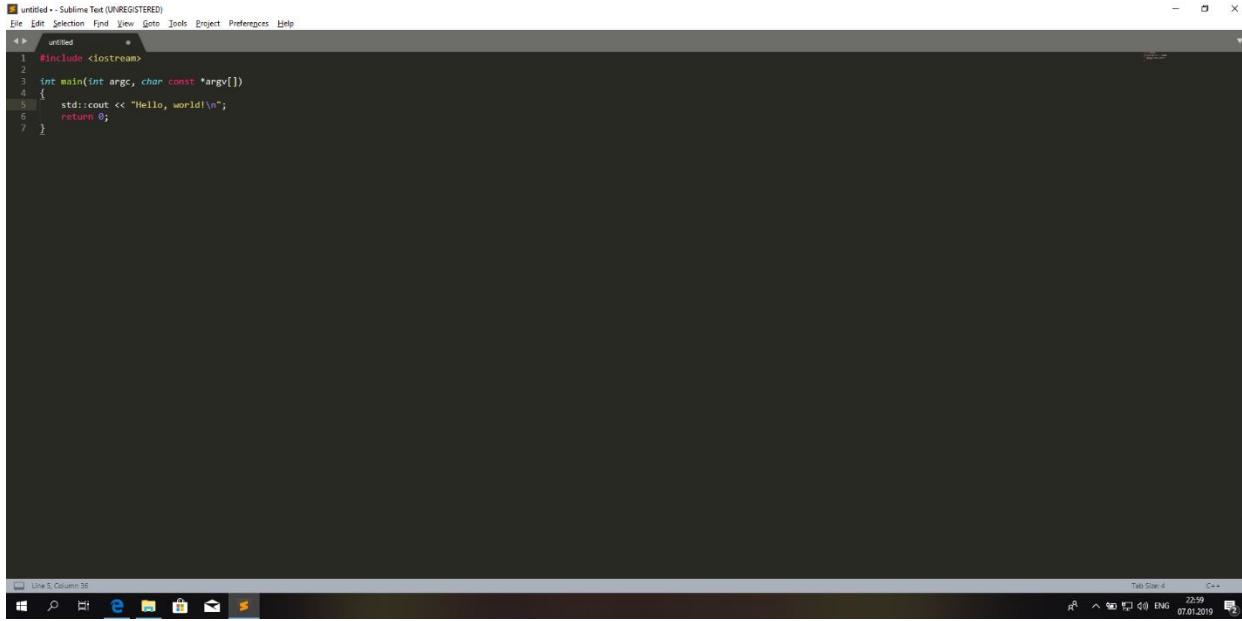
Don't forget to add CMake to PATH



Developing C\C++ programs without IDE

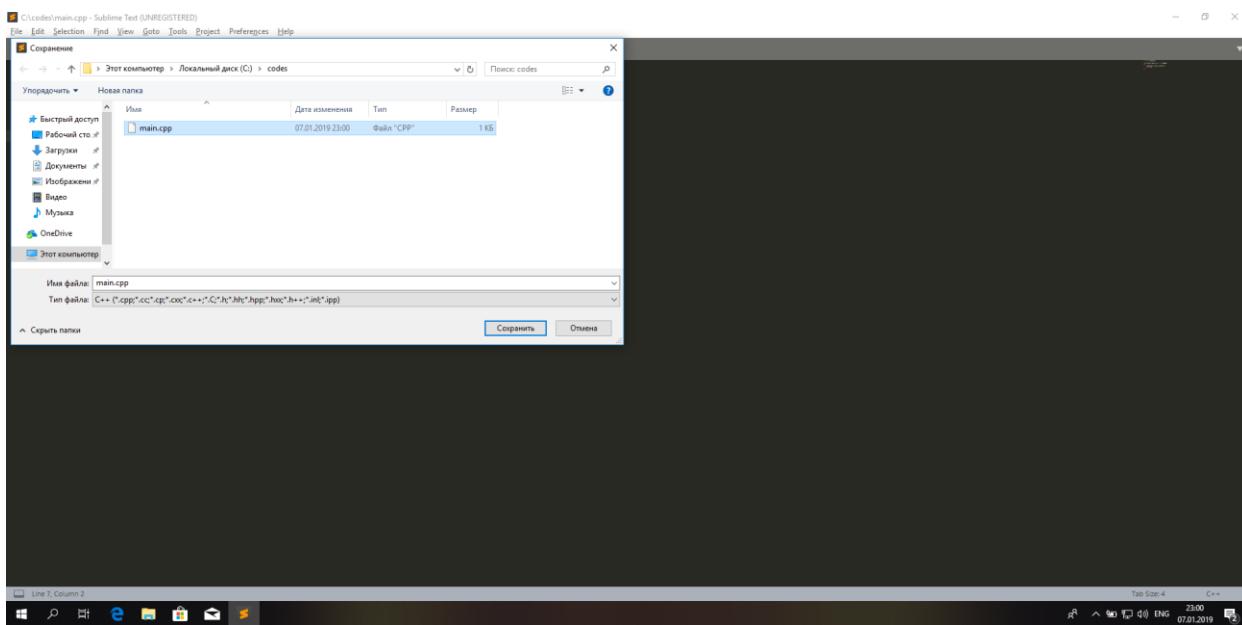
Now we can already create programs with text editors (for example I'll use Sublime Text)

Lets's create a simple program and save source code in main.cpp file

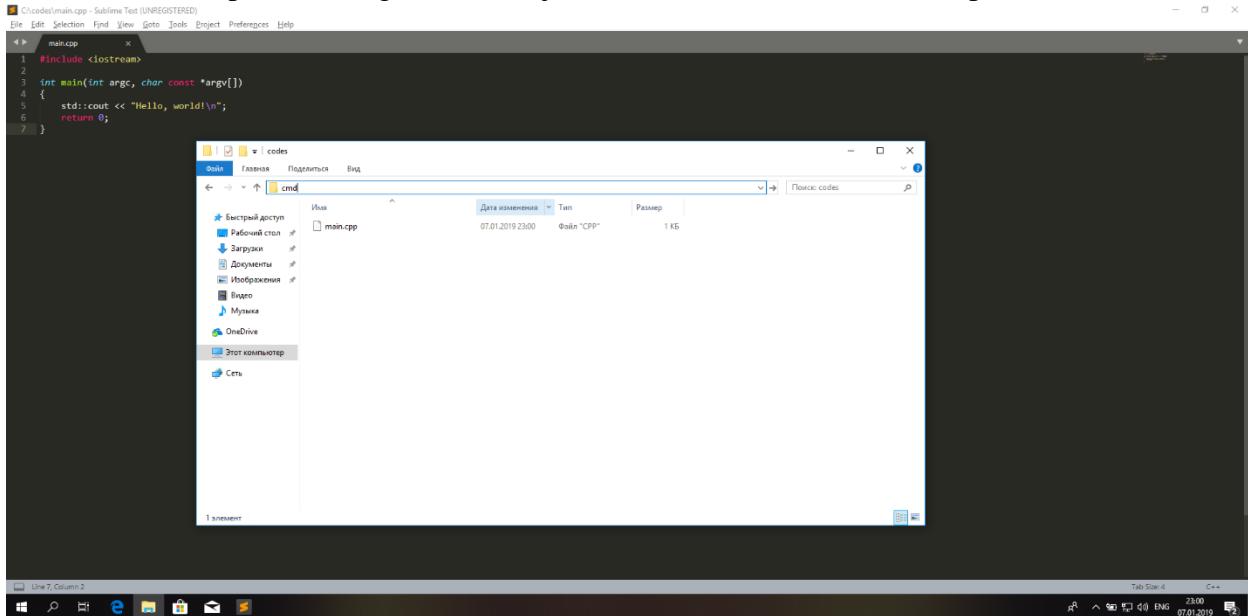


A screenshot of the Sublime Text editor window. The title bar says "untitled - Sublime Text (UNREGISTERED)". The menu bar includes File, Edit, Selection, Find, View, Goto, Tools, Project, Preferences, Help. The status bar at the bottom shows "Line 5, Column 36", "Tab Size: 4", "C++", "22:59", "ENG", and the date "07.01.2019". The main editor area contains the following C++ code:

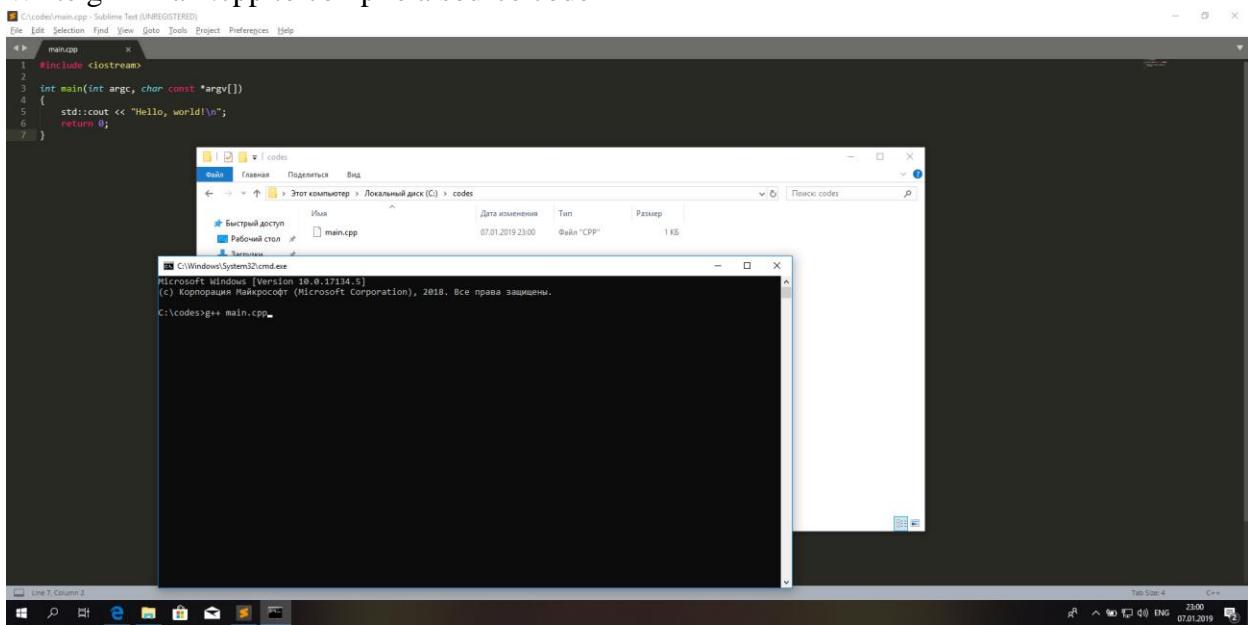
```
#include <iostream>
int main(int argc, char const *argv[])
{
    std::cout << "Hello, world!\n";
    return 0;
}
```



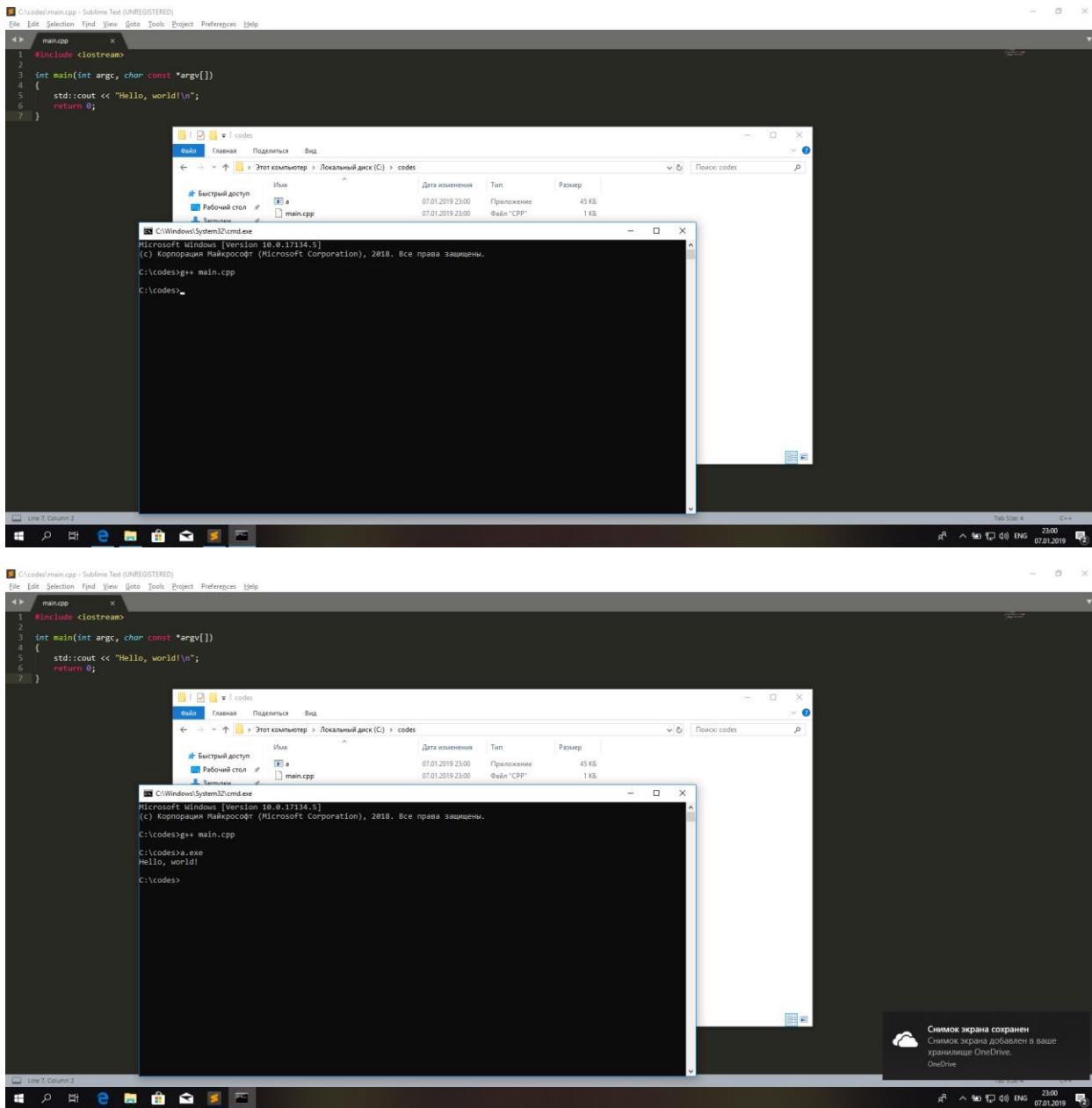
Now we can compile it through terminal (just write cmd in address bar to open it)



Write g++ main.cpp to compile a source code



Now we have a.exe file that we can run

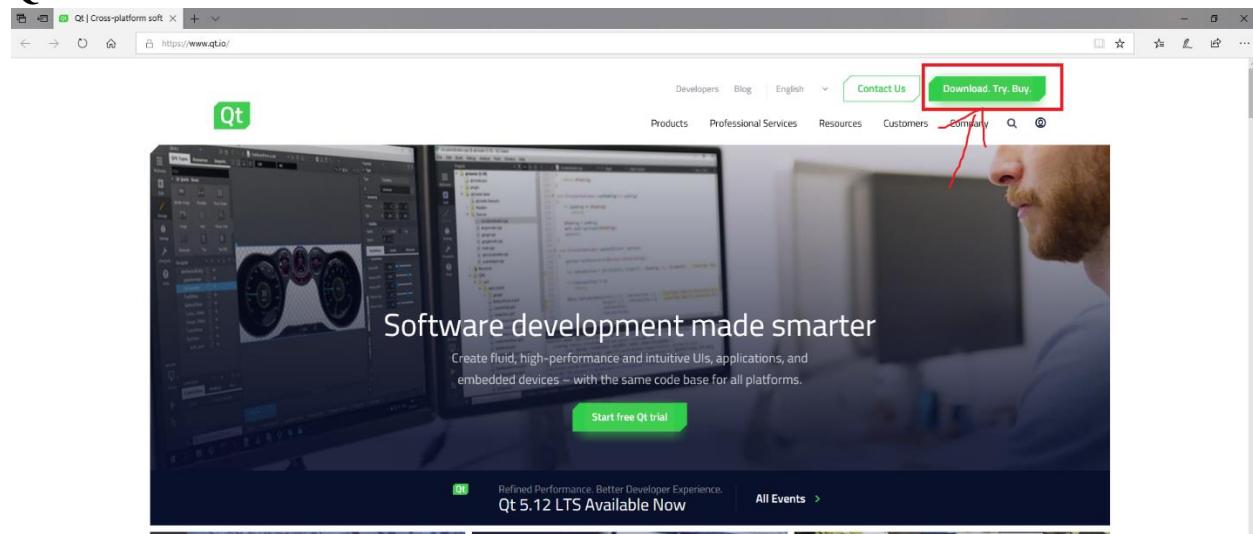


IDE installation

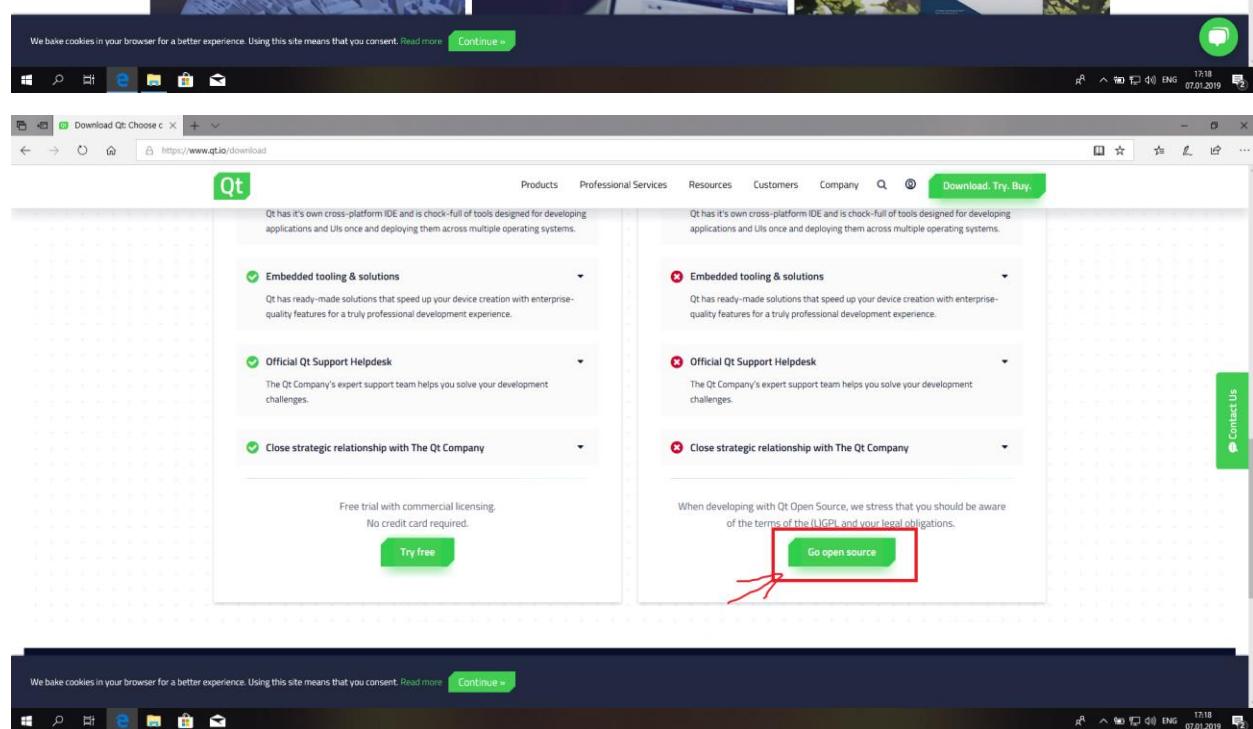
Developing programs with text editor is cool, but it would be better to develop program with IDE. In this guide I'll show you how to install CLion and Qt IDEs. You can choose any of them. As for me, I like both, so it's for you to decide. But if you have weak PC, I suggest you choose Qt.

Qt

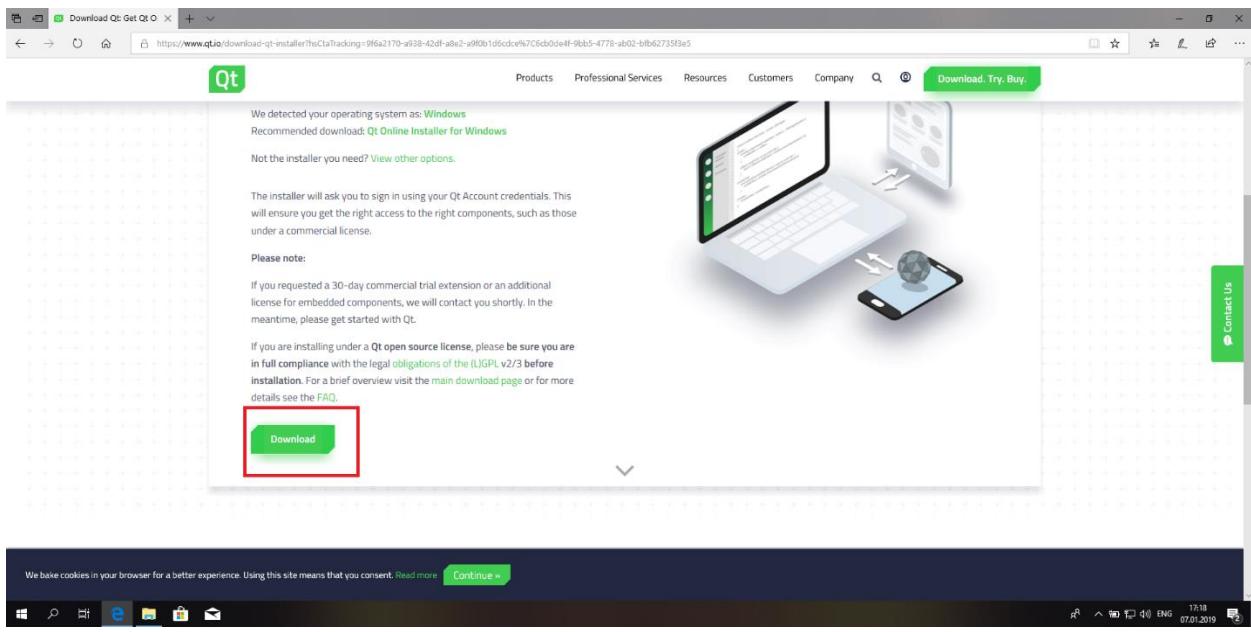
Qt download



The screenshot shows the main homepage of the Qt website. At the top right, there is a green button labeled "Download. Try. Buy." with a red box and a red arrow pointing to it. Below the button, there is a navigation bar with links for Developers, Blog, English, Contact Us, Products, Professional Services, Resources, Customers, and Company. The main content area features a large image of a person working at a computer, with two smaller windows showing the Qt IDE interface. The text "Software development made smarter" is displayed above a "Start free QT trial" button. A banner at the bottom of the page announces "Qt 5.12 LTS Available Now".

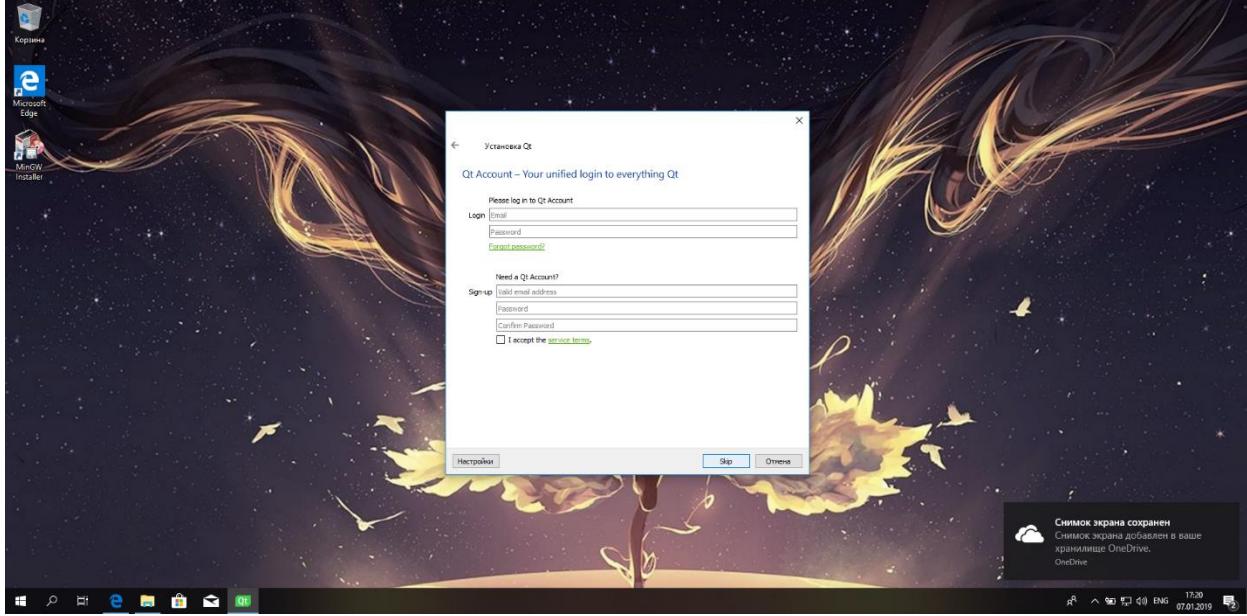


The screenshot shows the "Download" page of the Qt website. It displays two columns of features. The left column includes "Embedded tooling & solutions" (with a green checkmark), "Official Qt Support Helpdesk" (with a green checkmark), and "Close strategic relationship with The Qt Company" (with a green checkmark). The right column includes "Embedded tooling & solutions" (with a red cross), "Official Qt Support Helpdesk" (with a red cross), and "Close strategic relationship with The Qt Company" (with a red cross). Below these columns, there is a note about developing with Qt Open Source and a "Go open source" button, which is highlighted with a red box and a red arrow. The bottom of the page has a "Contact Us" button and a cookie consent message.

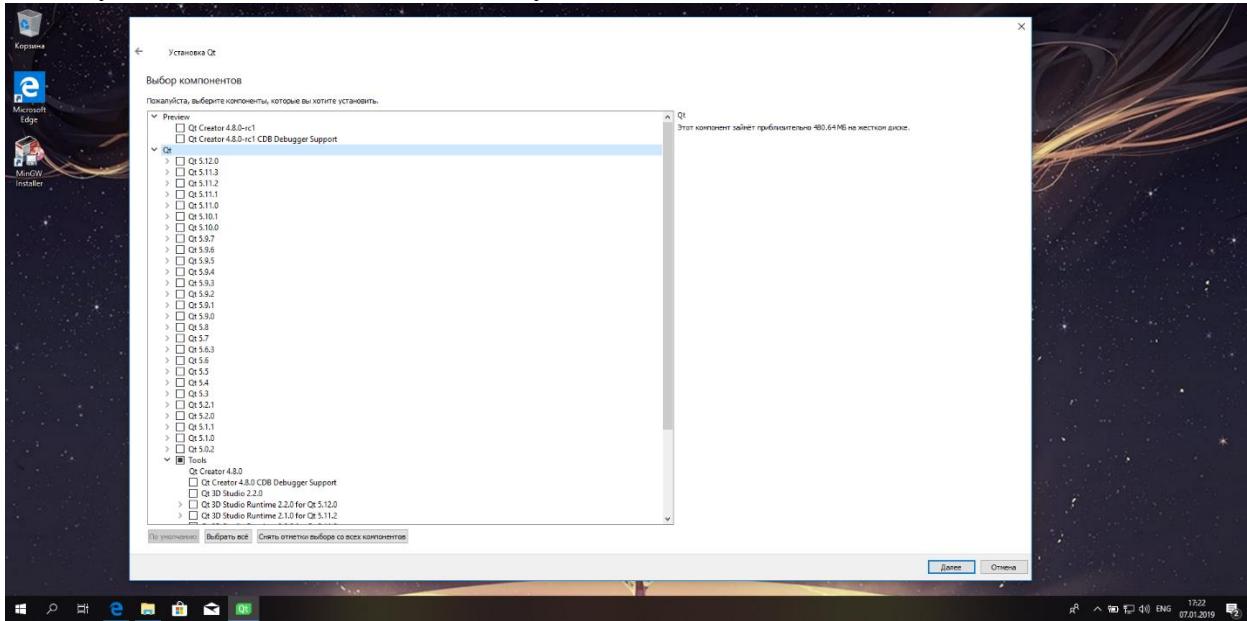


Qt installation

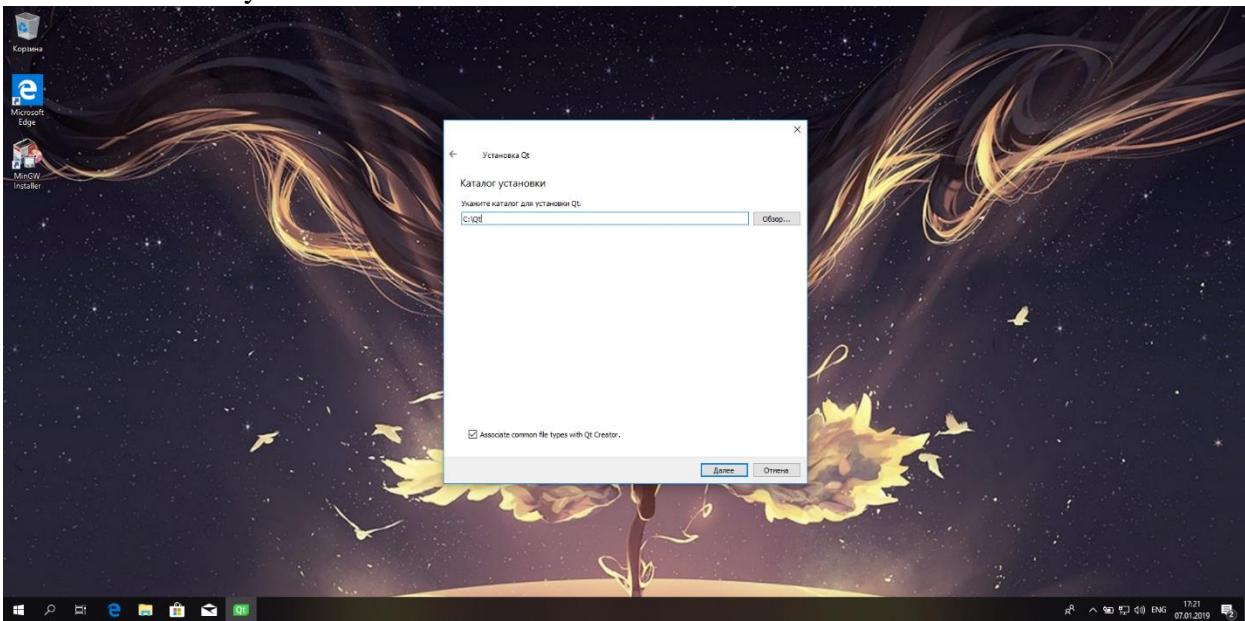
You can just skip this step



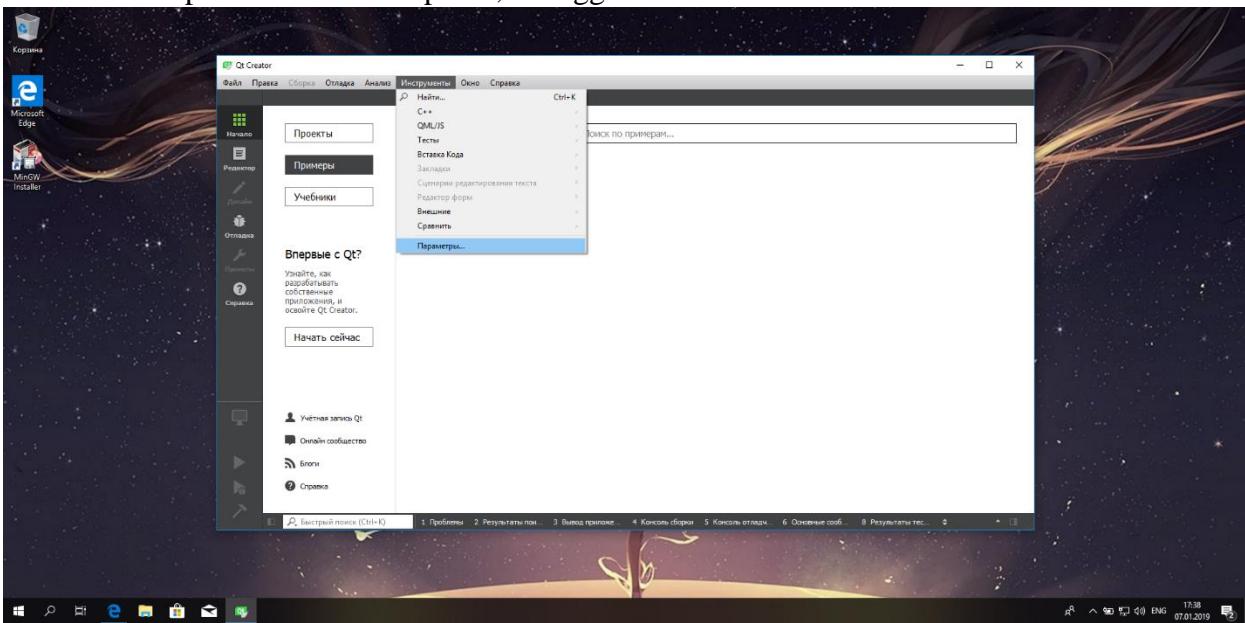
We only need Qt Creator that is chosen by default

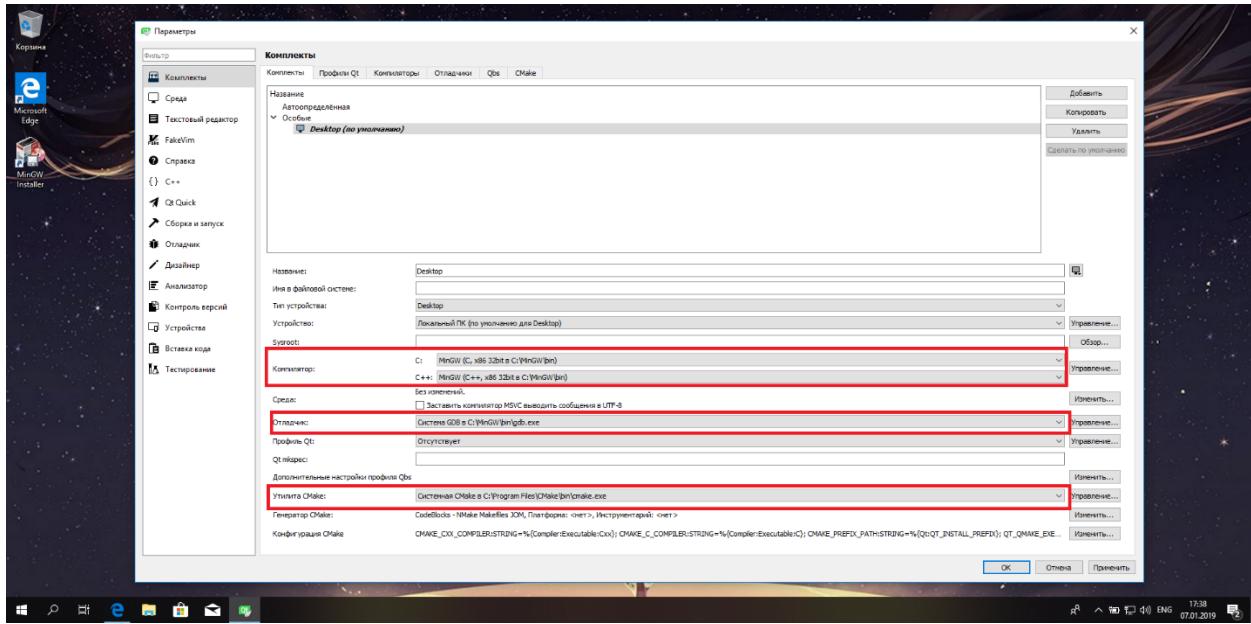


Install it wherever you want



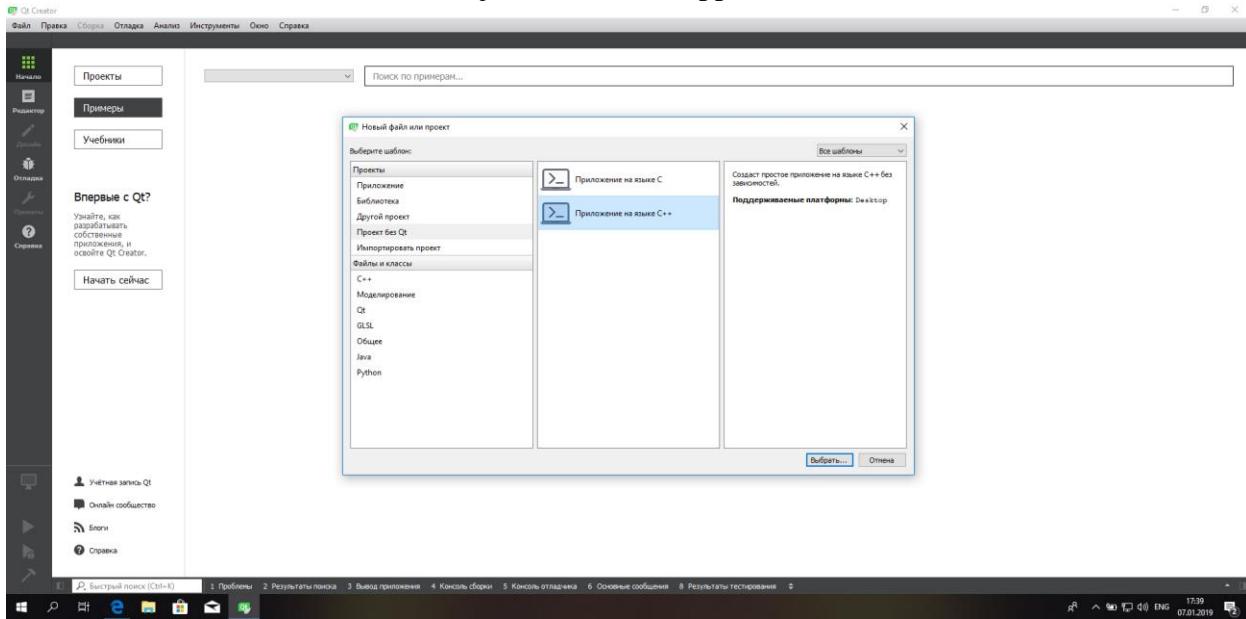
Click Tools/Options and set compilers, debugger and CMake



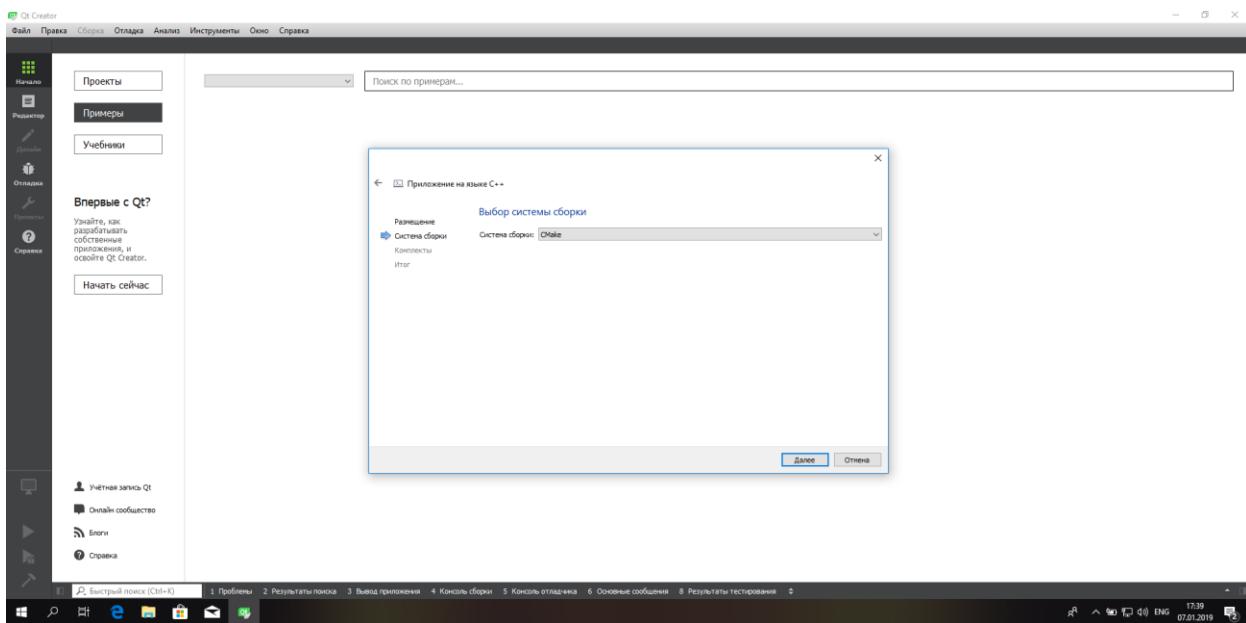


First project

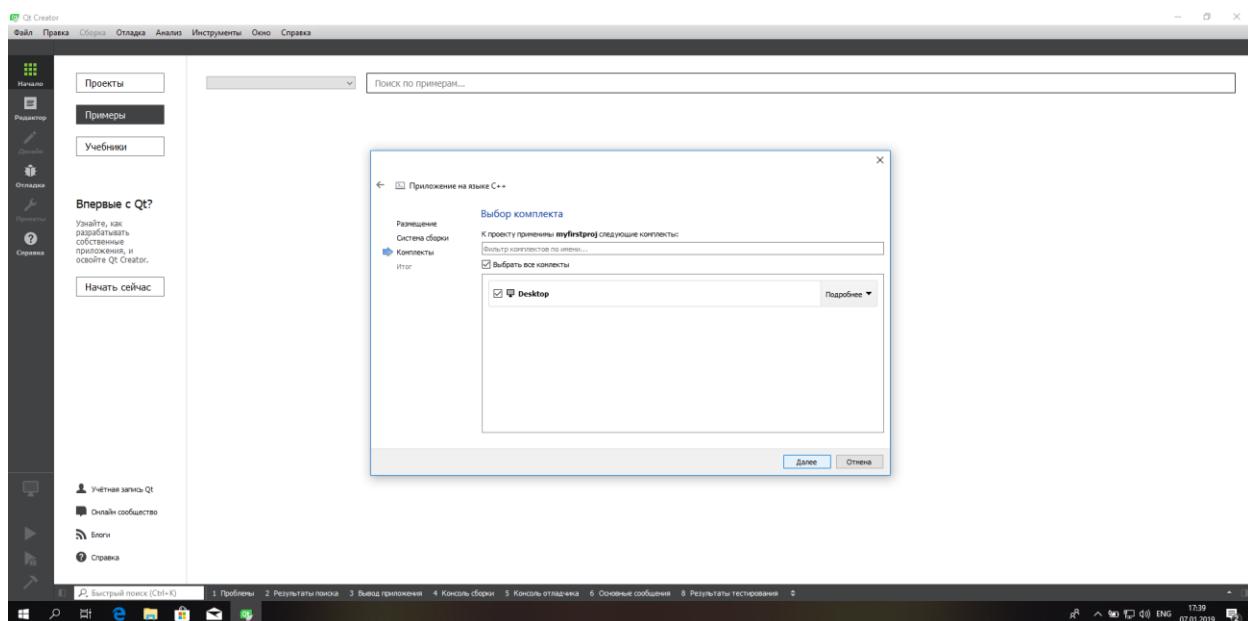
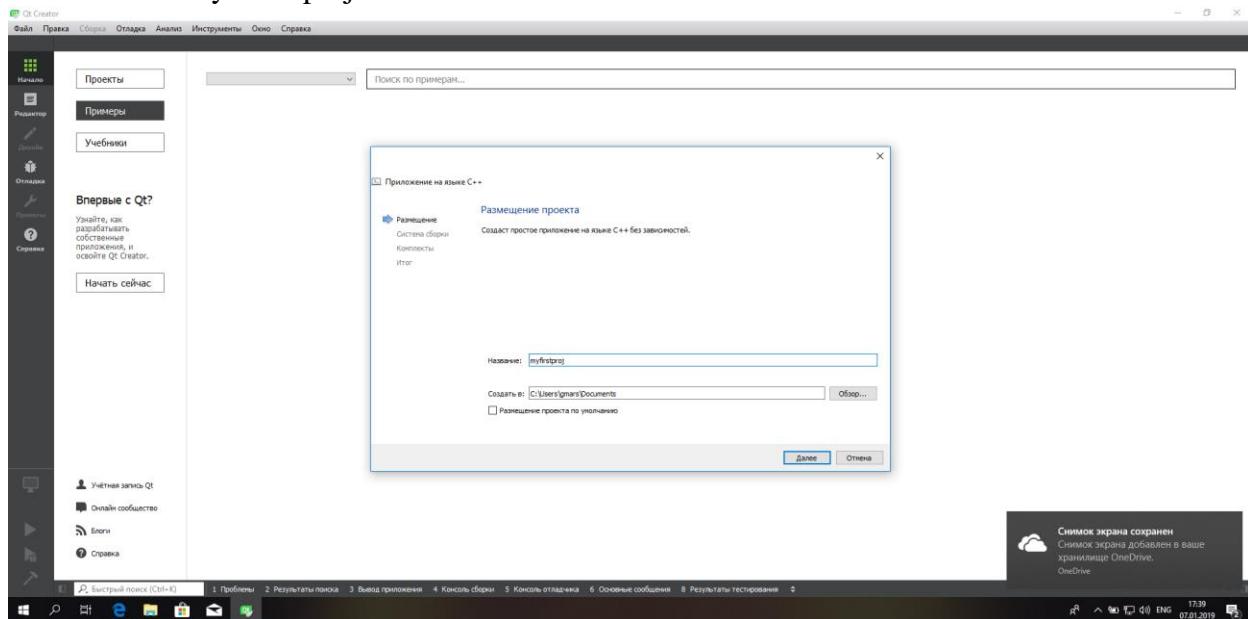
Press Ctrl+N and choose Non-Qt Project/Plain C++ Application

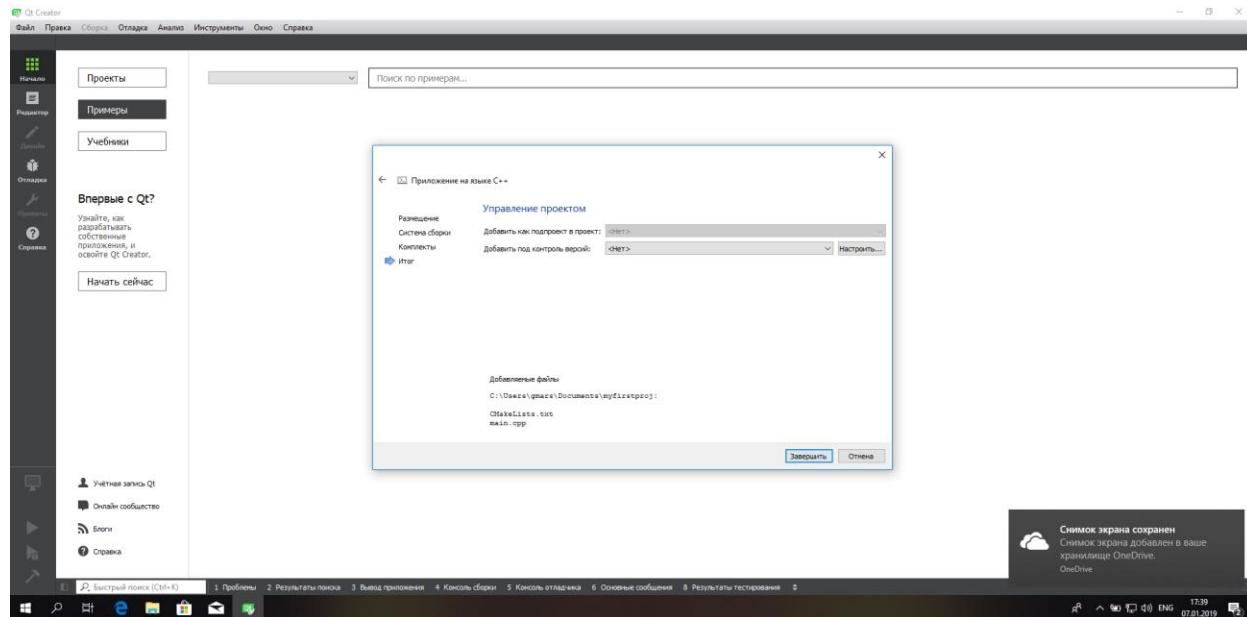


Choose CMake

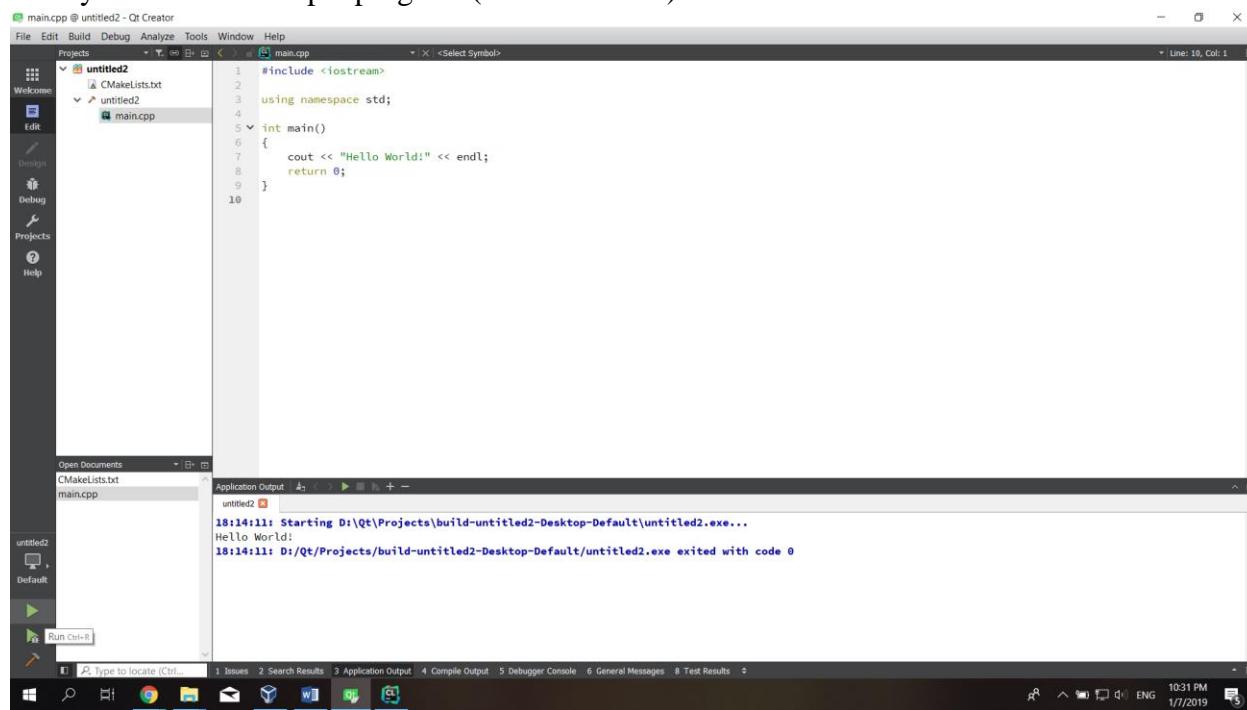


Choose directory for a project



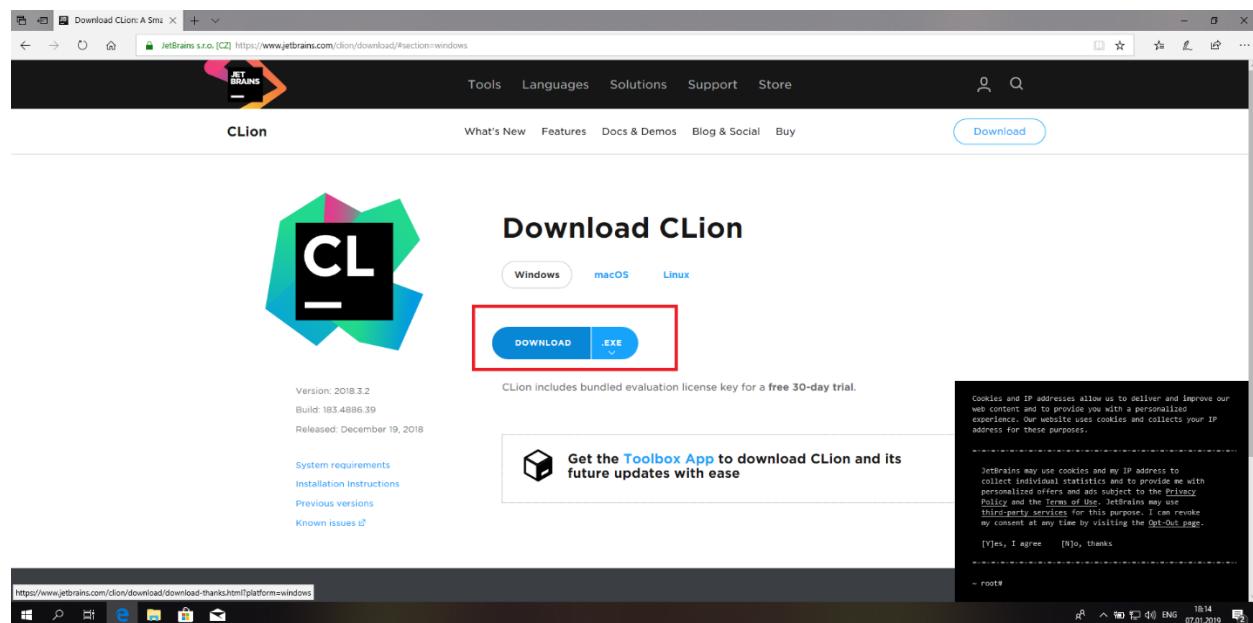
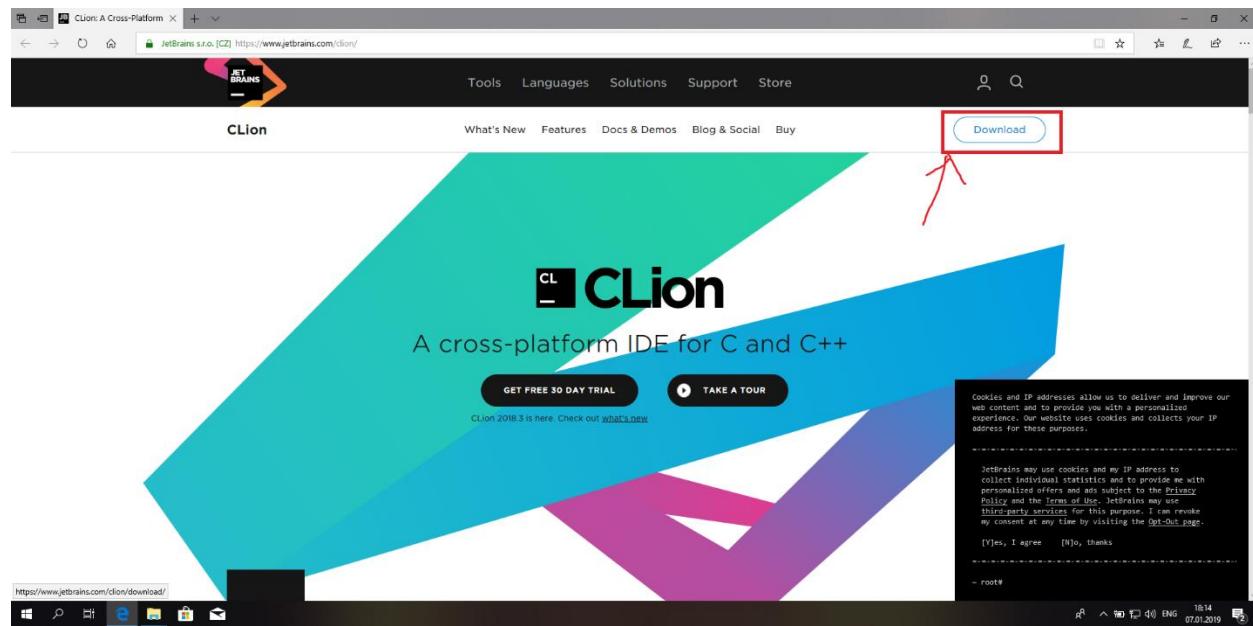


Now you can run a simple program (Run or Ctrl+R)



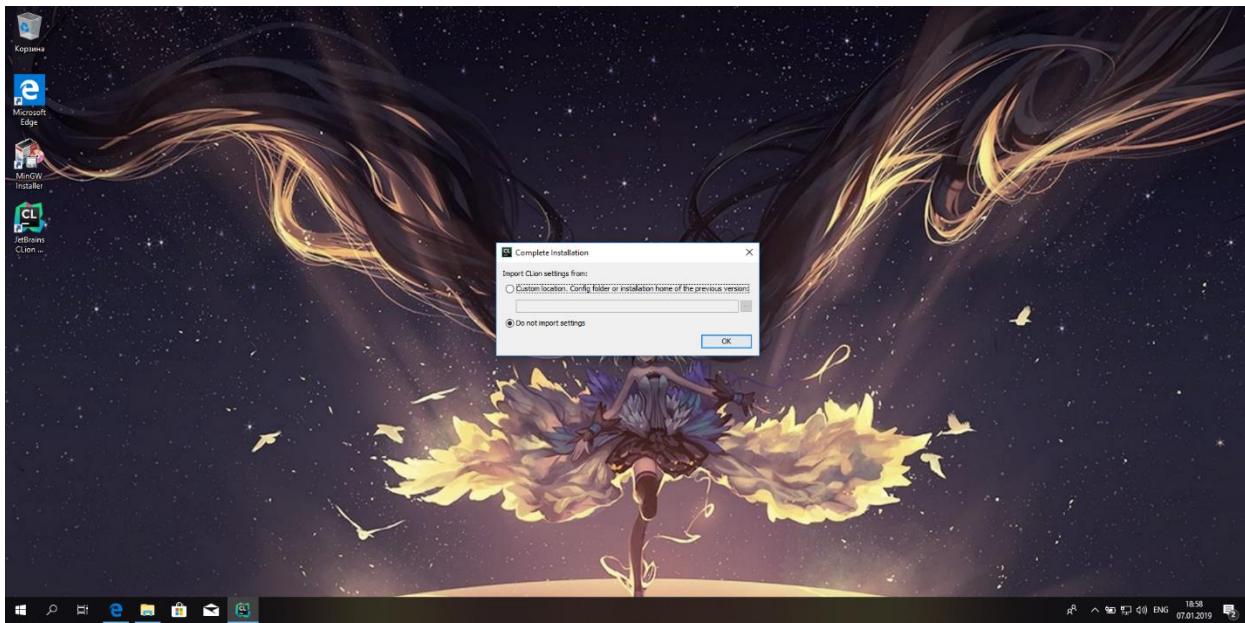
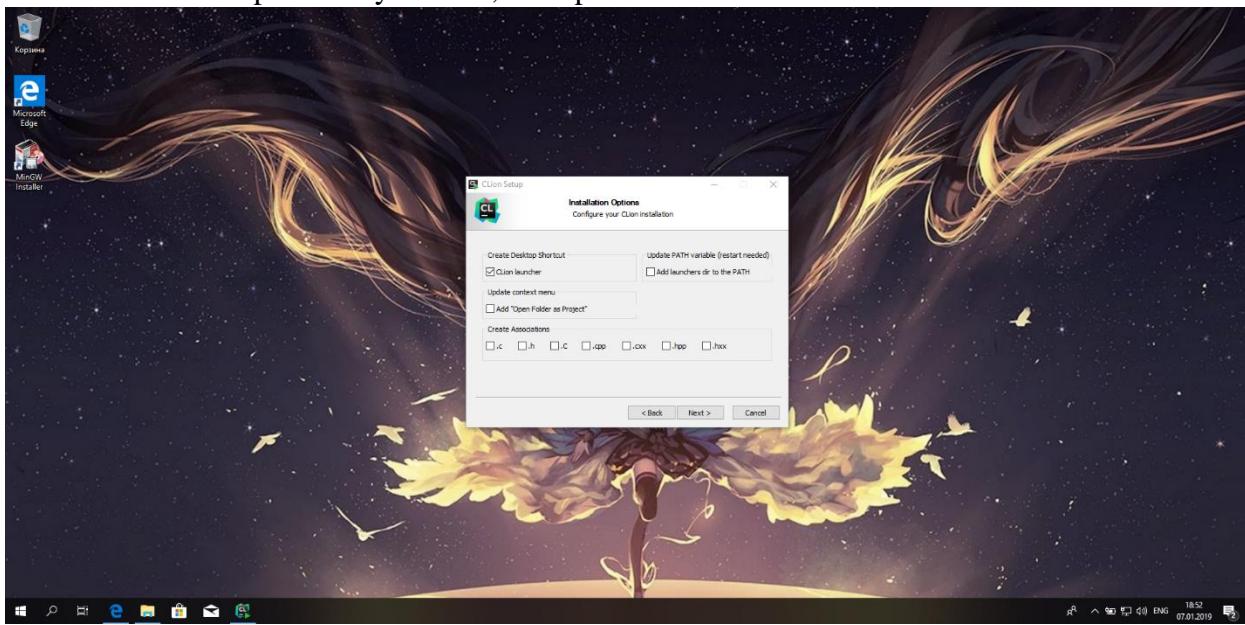
CLion

CLion download

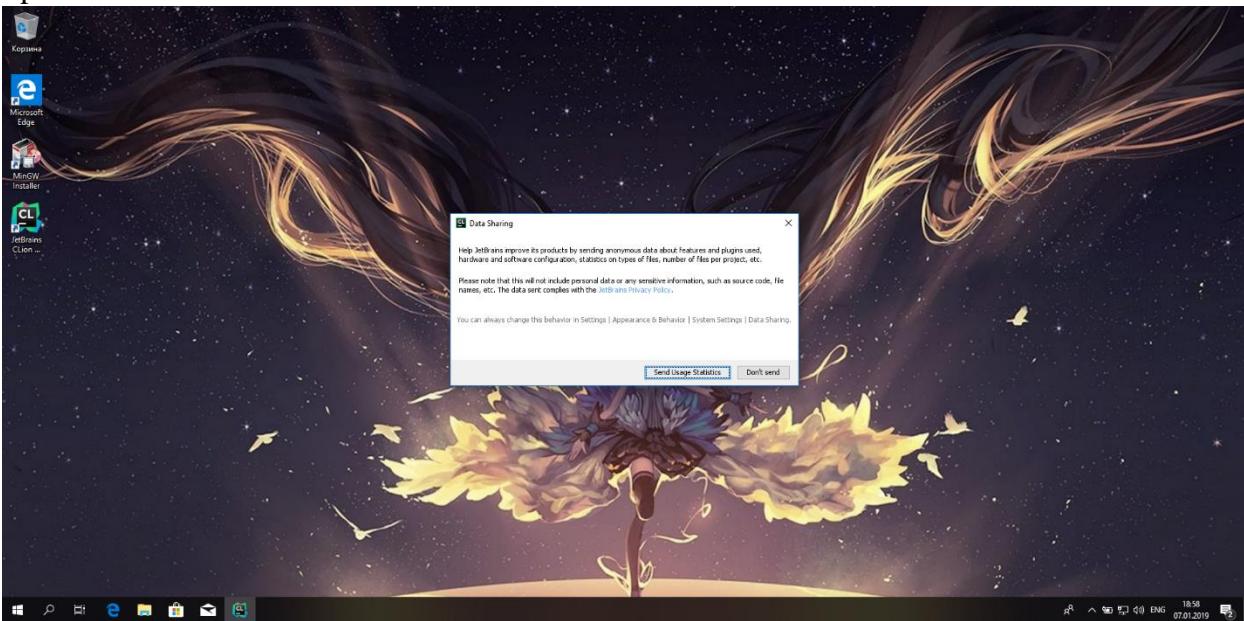


CLion installation

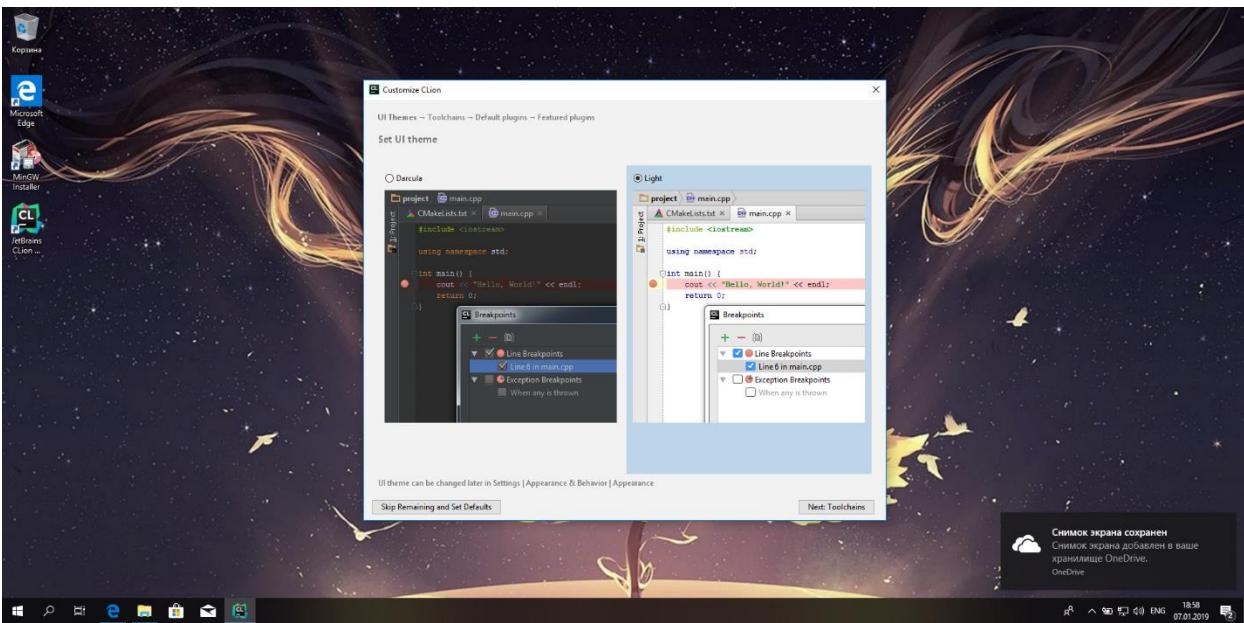
You can set these options as you wish, but I prefer like on screenshot



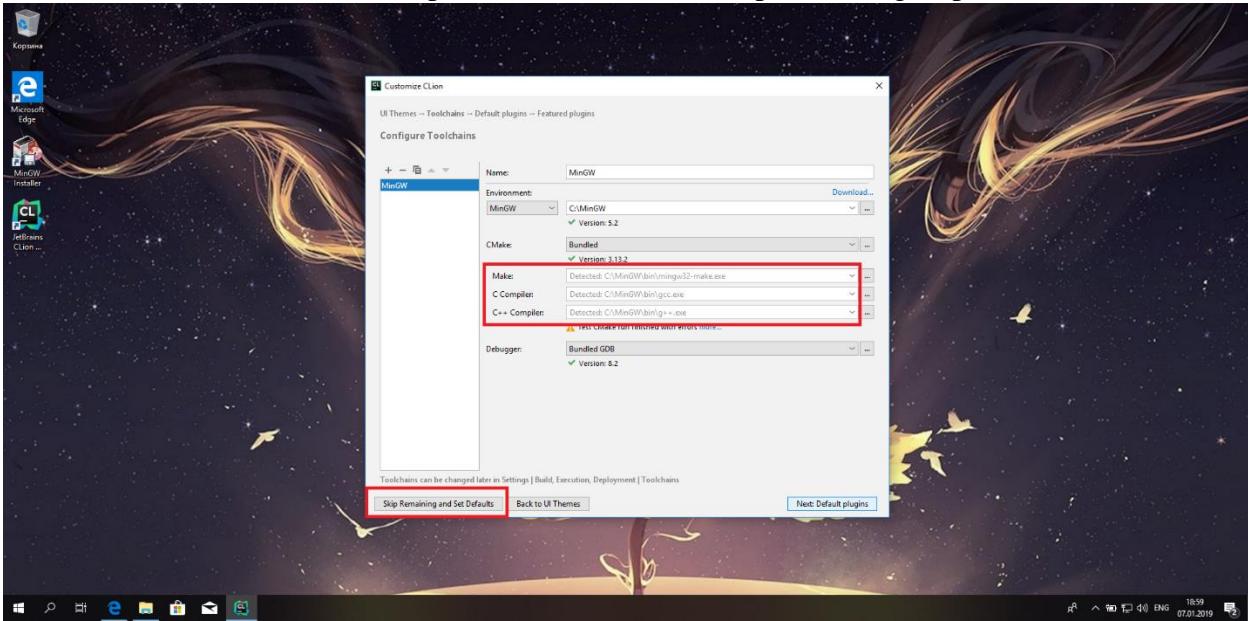
I prefer not to send



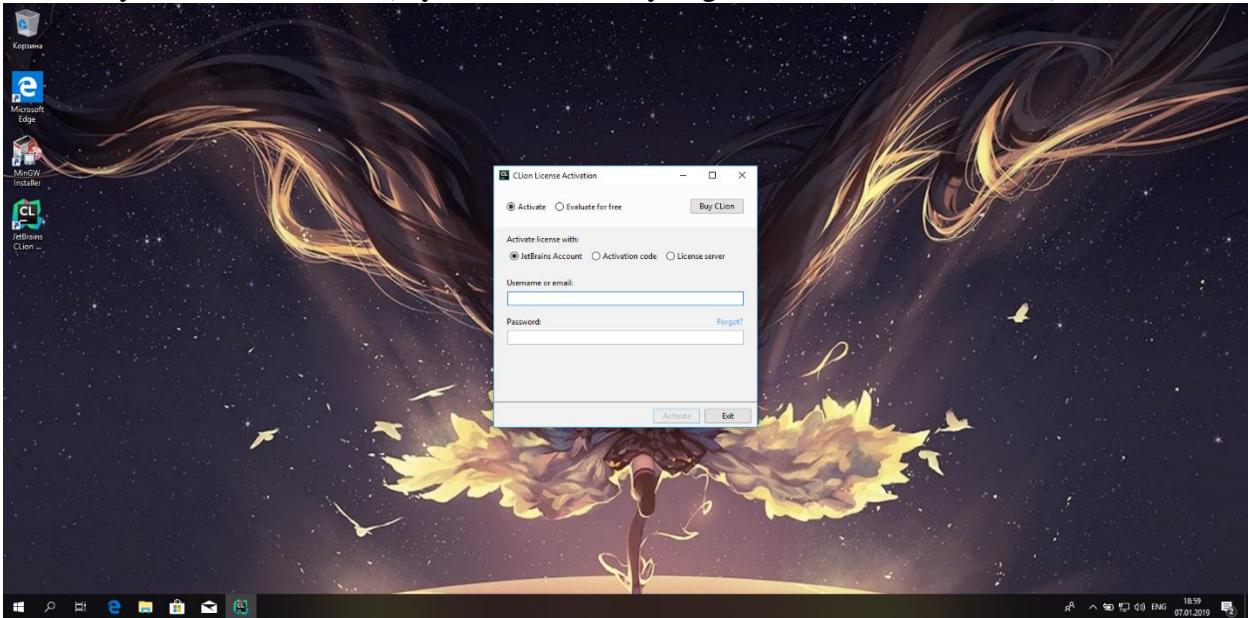
Choose theme



Make sure that CLion found compilers and CMake and skip remaining steps

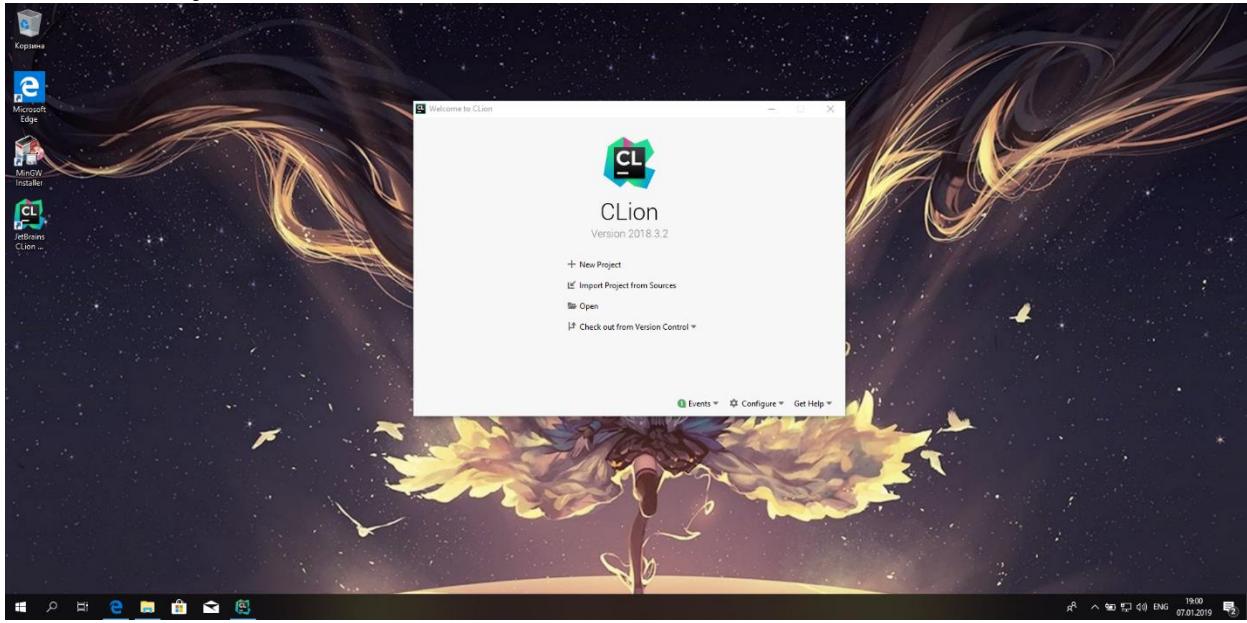


Activate your student license (if you don't have it yet, get it on JetBrains' website)

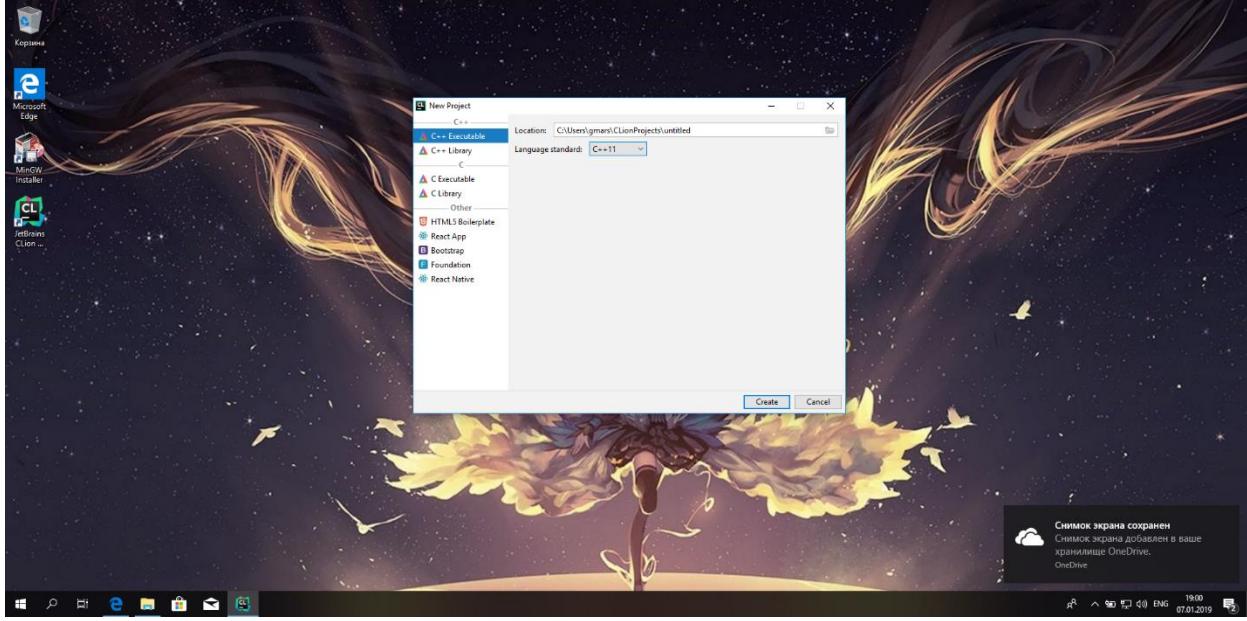


First project

Click New Project



Select project folder and set Language standard to C++11



Now you can run this simple program

The screenshot shows the CLion IDE interface. The main window displays a code editor with a single file named 'main.cpp' containing the following code:

```
1 #include <iostream>
2
3 int main()
4 {
5     std::cout << "Hello, World!" << std::endl;
6     return 0;
7 }
```

Below the code editor is a 'Run' tool window. It shows a single configuration named 'untitled' with the command: "D:\2 kurs\cpp\git\untitled\cmake-build-debug\untitled.exe". The output pane of the 'Run' window displays the text "Hello, World!". Below the 'Run' window, the status bar shows the path "D:\2 kurs\cpp\git\untitled\cmake-build-debug\untitled.exe", the date and time "10:32 PM 1/7/2019", and the context "Context: untitled [D]".

Development tools for Linux (Ubuntu) installation

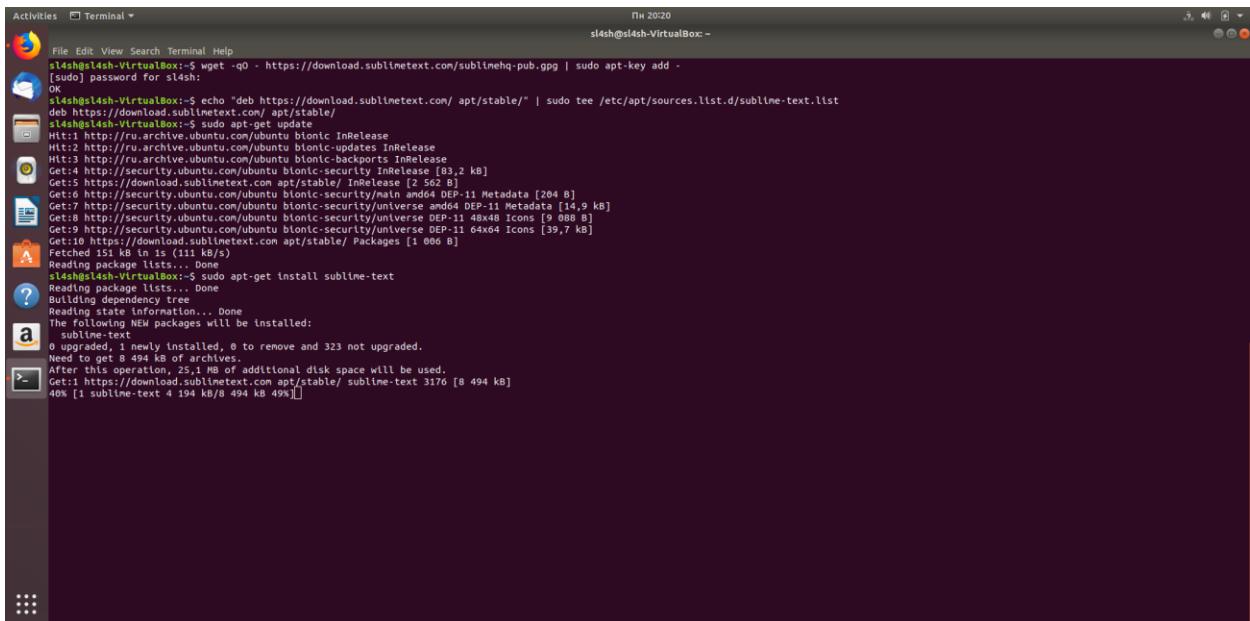
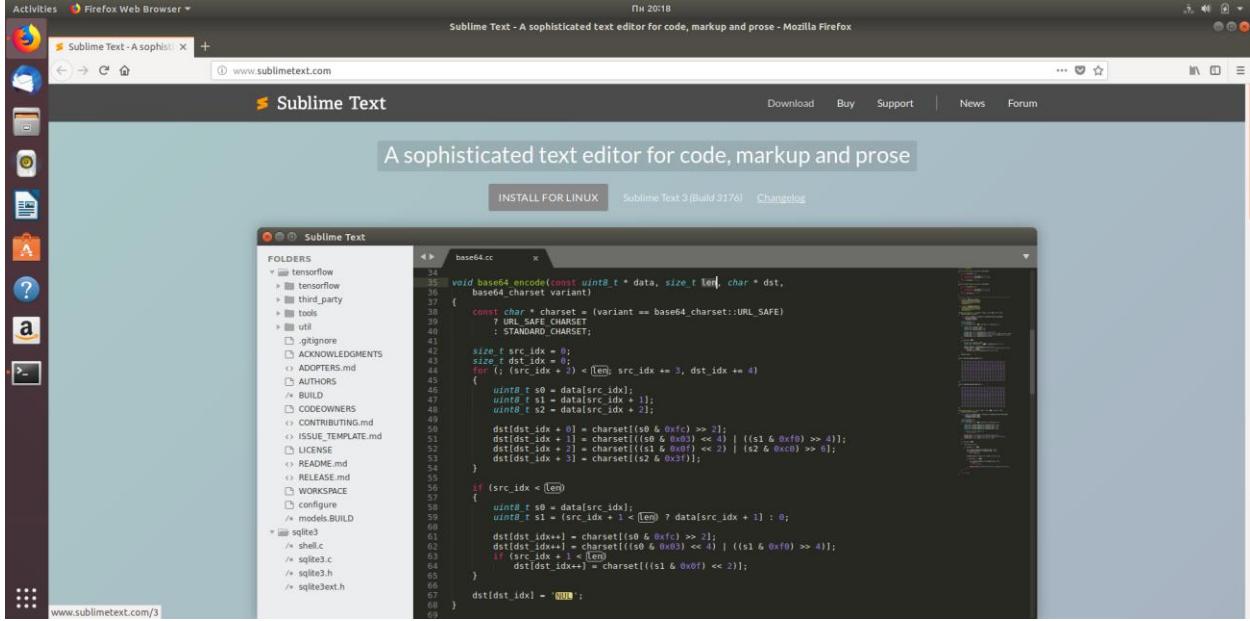
C\|C++ compiler and CMake installation

Just type in terminal “`sudo apt-get install gcc g++ cmake`”

```
Activities Terminal ⓘ
File Edit View Search Terminal Help
si4sh@si4sh-VirtualBox:~$ sudo apt-get install gcc g++ cmake
[sudo] password for slash:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  cmake-data cpp cpp-7 gcc-7-base gcc-7-base libasan4 libatomic1 libc-dev-bin libc6-dev libgcc1-0 libcurl4 libgcc-7-dev libgcc1 libgomp1 libitm1 libjsoncpp1 liblsan0 libmpx2
  libquadmath0 librhash0 libstdc++-7-dev libstdc++-0 libtsan0 libubsan libuv1 linux-libc-dev make manpages-dev
Suggested packages:
  libatomic1-doc libgcc-7-locales g++-multilib gcc-7-multilib libstdc++-7-dev libstdc++-0 libtsan0 libubsan libuv1 libx11-dev
  libatomic1-dbg libasan4-dbg liblsan0-dbg libtsan0-dbg libubsan0-dbg libcurl4 libgcc1-dbg libitm1 libjsoncpp1 liblsan0 libmpx2 libquadmath0-dbg glIBC-doc libstdc++-7-doc make-doc
The following NEW packages will be installed:
  cmake cmake-data g++ g++-7 gcc gcc-7 libasan4 libatomic1 libc-dev-bin libc6-dev libcurl4 libgcc-7-dev libitm1 libjsoncpp1 liblsan0 libmpx2 libquadmath0 librhash0 libstdc++-7-dev libtsan0
  libubsan libuv1 linux-libc-dev make manpages-dev
The following packages will be upgraded:
  libatomic1 libgcc-7-base libgcc1 libgcc1-0 libgcc1 libgomp1 libstdc++-0
  libcurl4 libgcc1 libitm1 libjsoncpp1 liblsan0 libmpx2 libquadmath0 librhash0 libstdc++-7-dev libtsan0
  libubsan libuv1 libx11-dev
  libatomic1-dbg libasan4-dbg liblsan0-dbg libtsan0-dbg libubsan0-dbg libcurl4 libgcc1-dbg libitm1 libjsoncpp1 liblsan0 libmpx2 libquadmath0-dbg glIBC-doc libstdc++-7-doc make-doc
8 upgraded, 20 newly installed, 0 to remove and 326 not upgraded.
Need to get 30,9 MB/38,3 MB of archives.
After this operation, 140 MB of additional disk space will be used.
Do you want to continue [Y/n]?
Get:1 http://ru.archive.ubuntu.com/ubuntu bionic/main amd64 cmake-data all 3.18.2-1ubuntu2 [1 331 kB]
Get:2 http://ru.archive.ubuntu.com/ubuntu bionic/main amd64 libcurl4 amd64 7.58.0-2ubuntu3.5 [214 kB]
Get:3 http://ru.archive.ubuntu.com/ubuntu bionic/main amd64 libjsoncpp1 amd64 1.7.4-3 [73,6 kB]
Get:4 http://ru.archive.ubuntu.com/ubuntu bionic/main amd64 librhash0 amd64 1.3.6-2 [78,1 kB]
Get:5 http://ru.archive.ubuntu.com/ubuntu bionic/main amd64 libuv1 amd64 1.18.0-3 [64,4 kB]
Get:6 http://ru.archive.ubuntu.com/ubuntu bionic/main amd64 cmake amd64 3.10.2-1ubuntu2 [3 138 kB]
32% [6 cmake 2 406 kB/3 138 kB 76%]
```

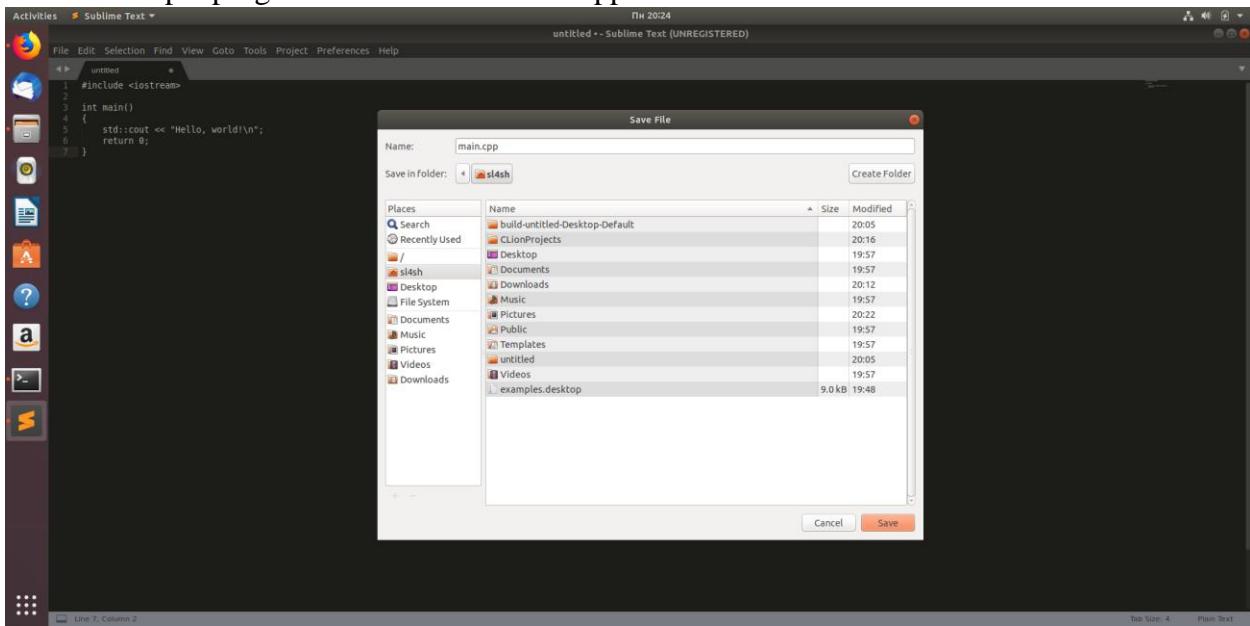
Developing C\C++ programs without IDE

Now we can already create programs with text editors (for example I'll use Sublime Editor)

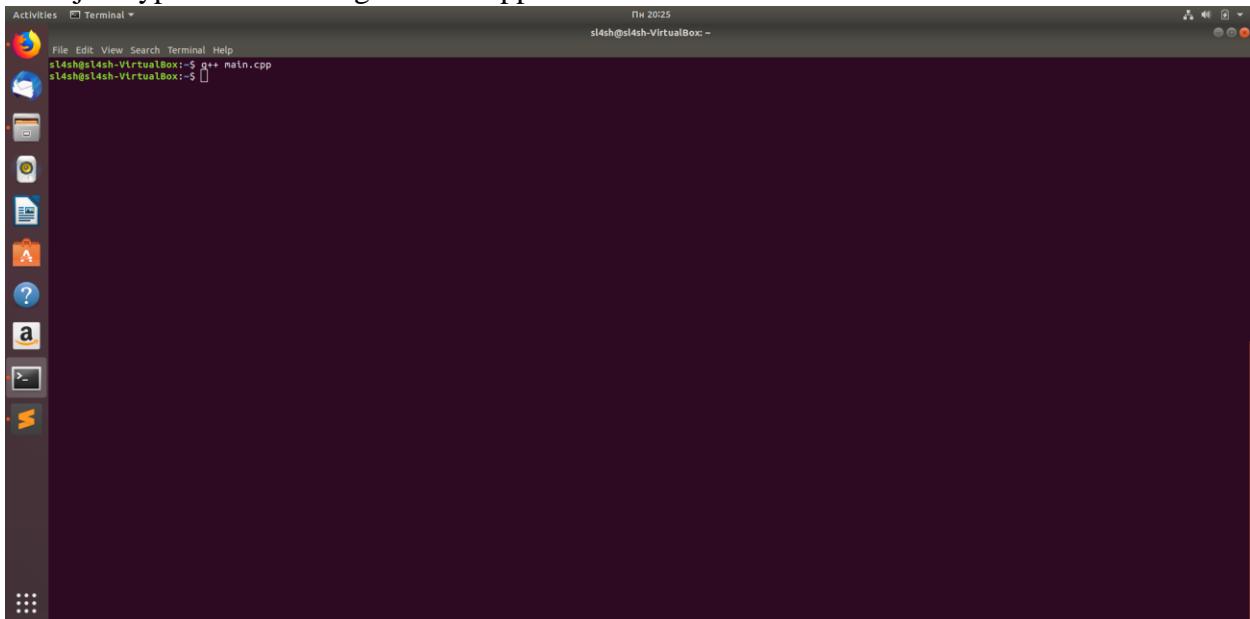




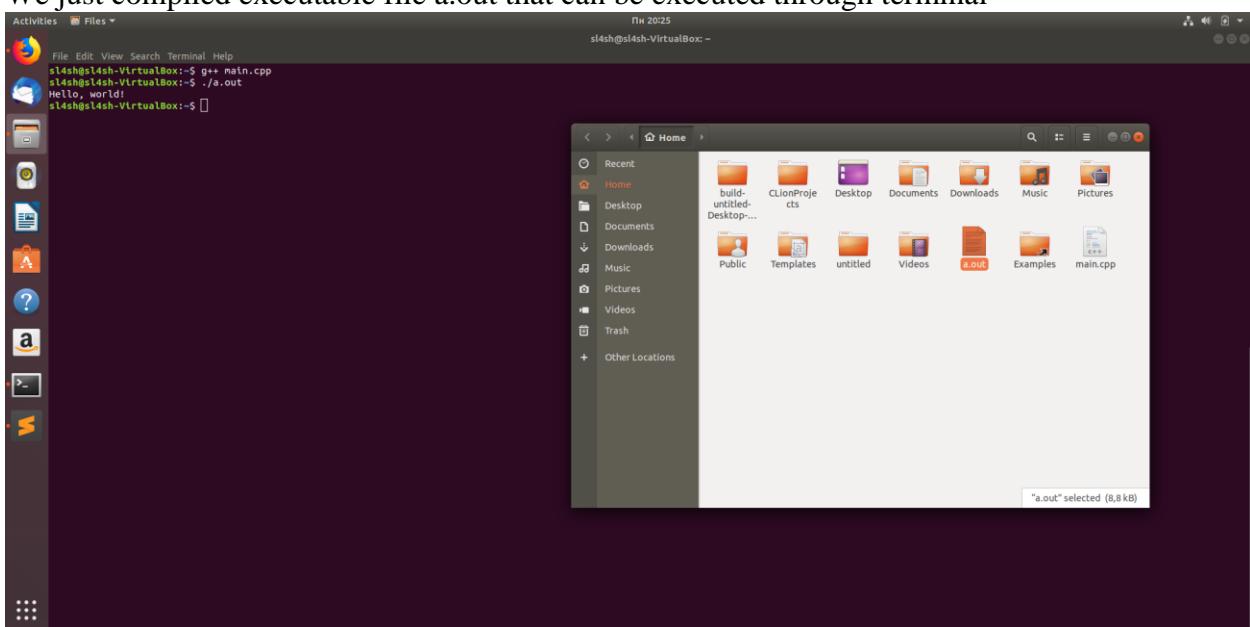
Create a simple program and save it as main.cpp



Now just type in terminal “g++ main.cpp”



We just compiled executable file a.out that can be executed through terminal



IDE installation

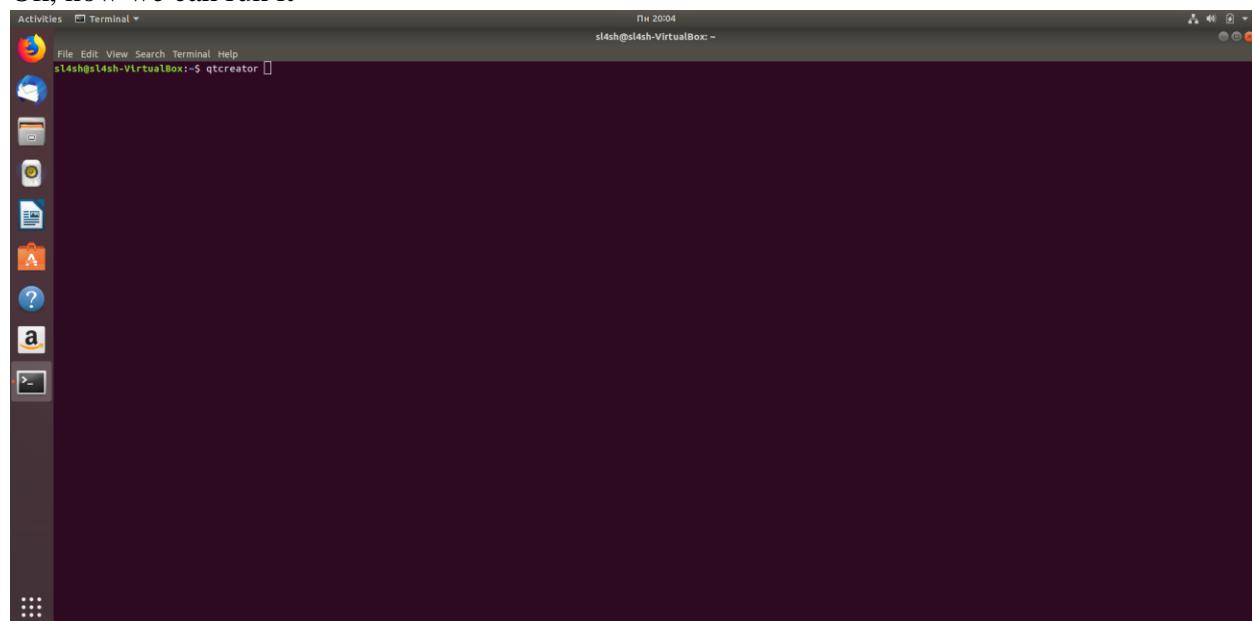
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Qt

Qt download

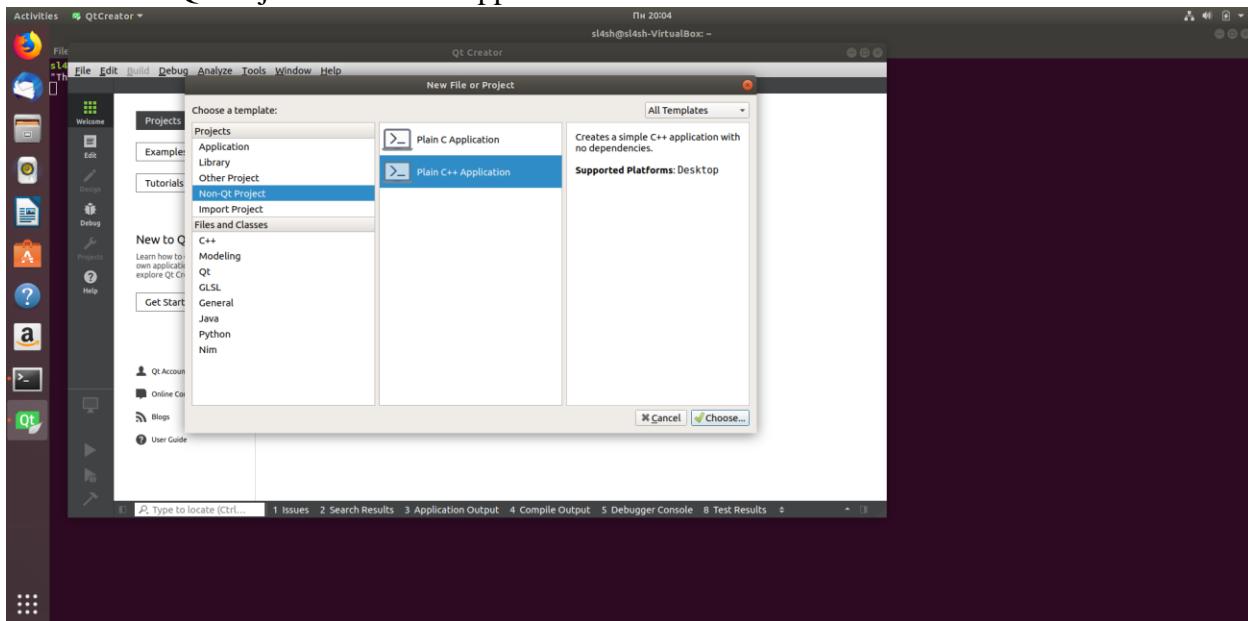
Just type in terminal “`sudo apt-get install qtcreator`”

Ok, now we can run it

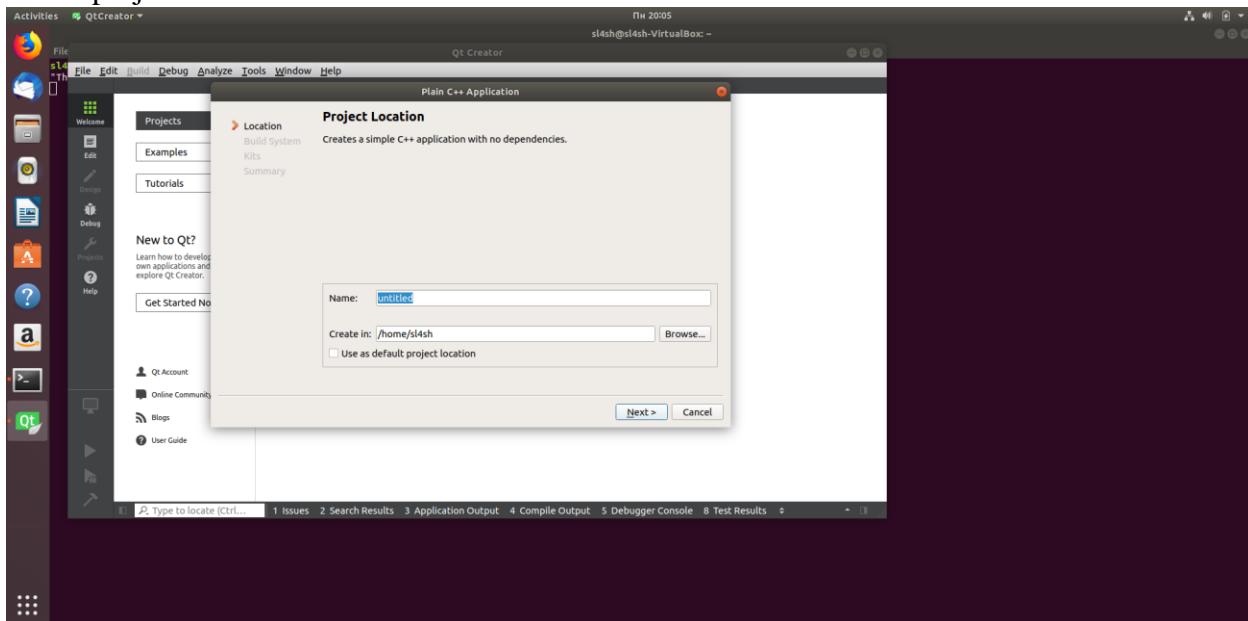


First project

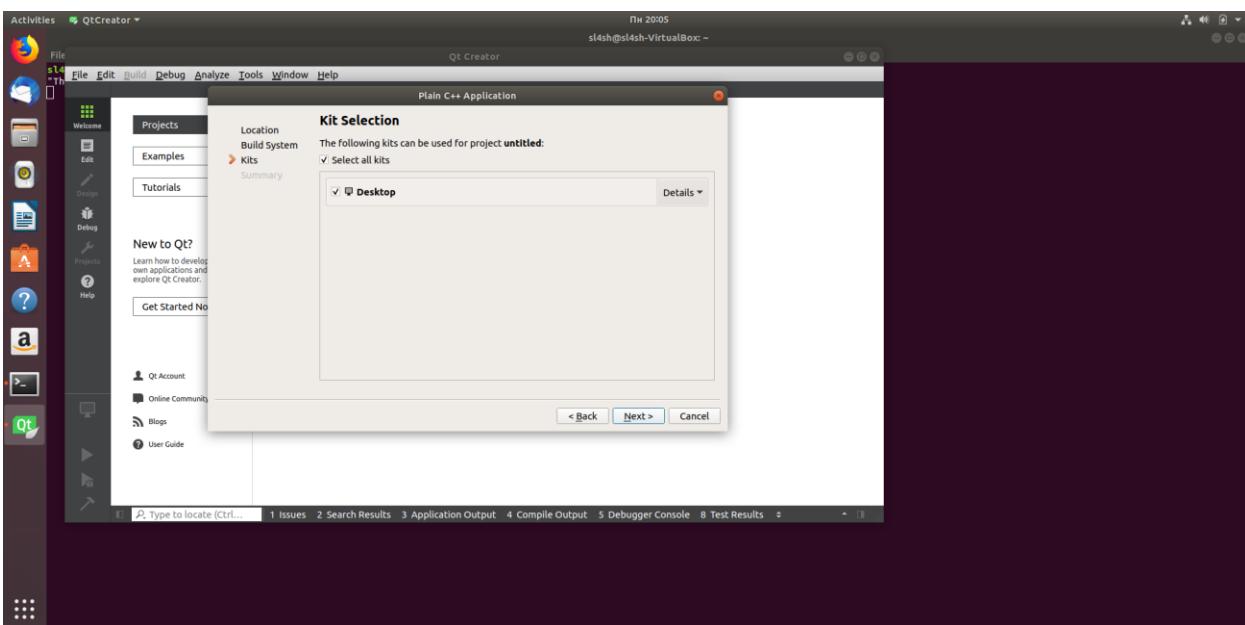
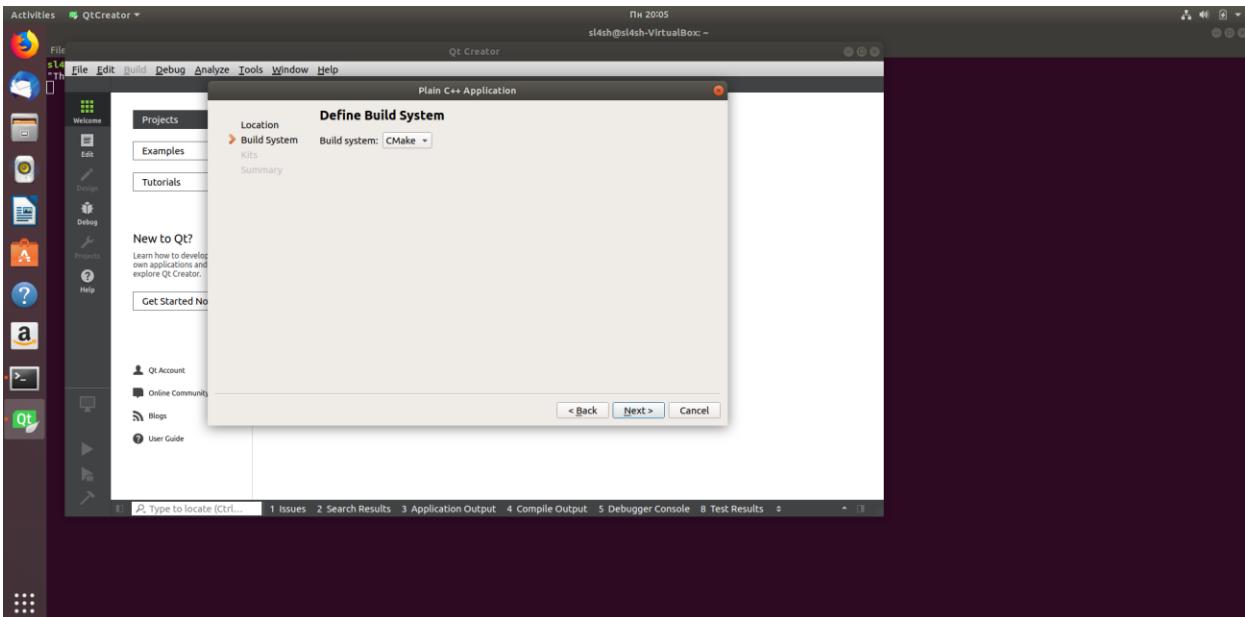
Choose Non-Qt Project/Plain C++ Application

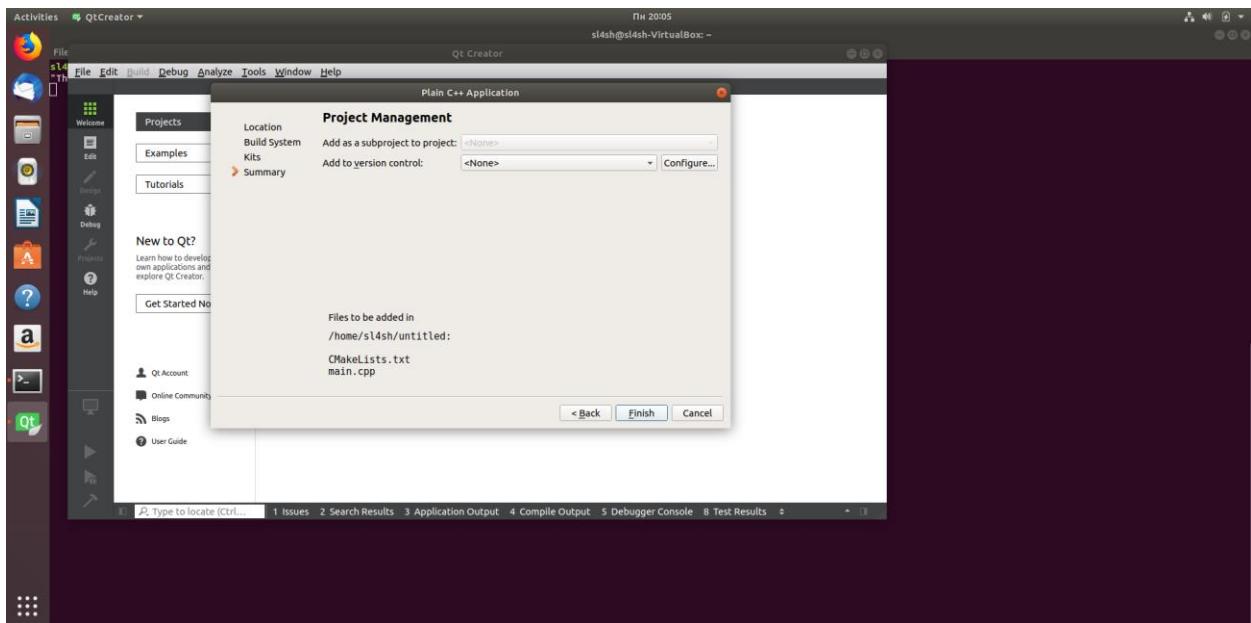


Select project folder

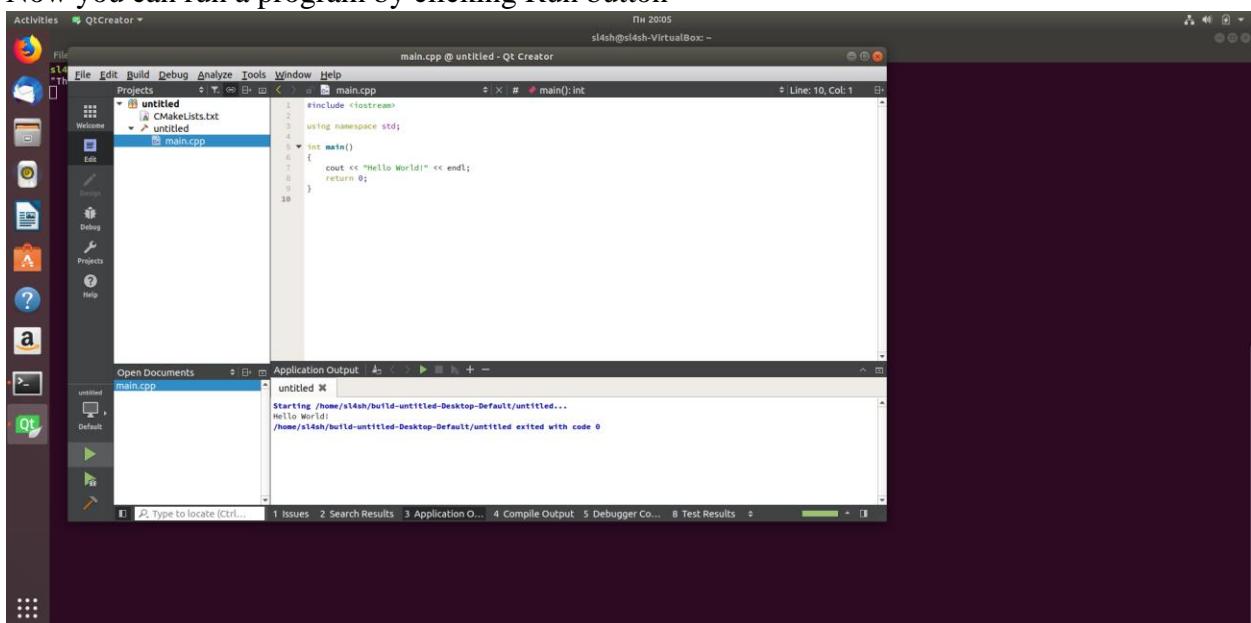


Select CMake



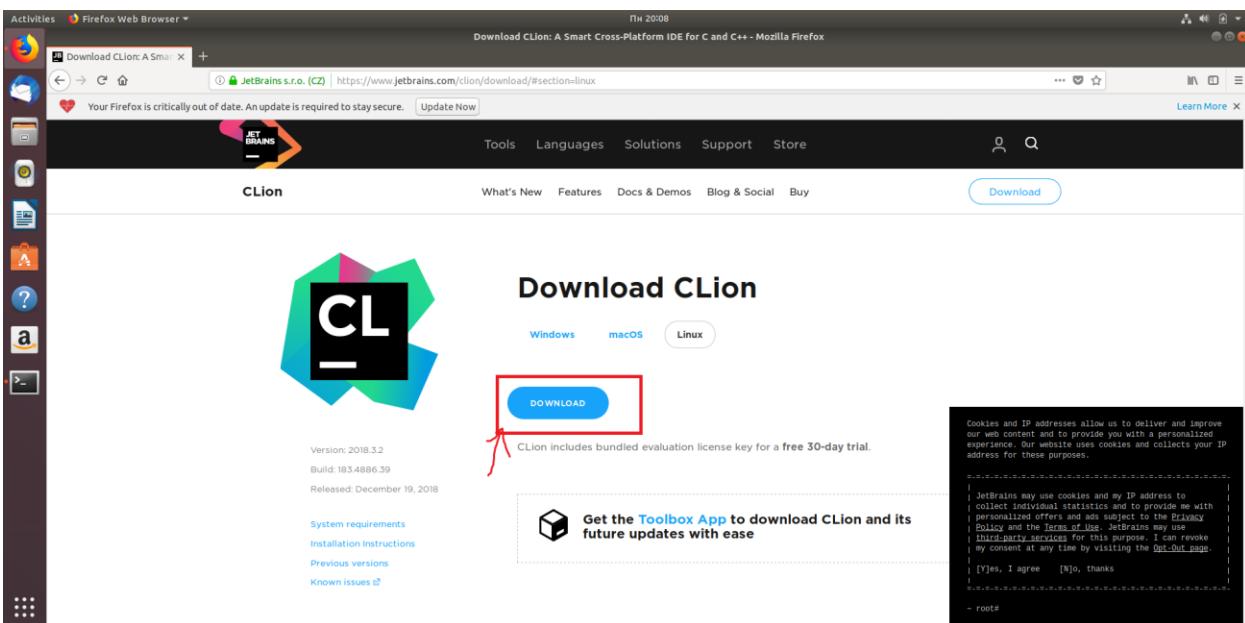
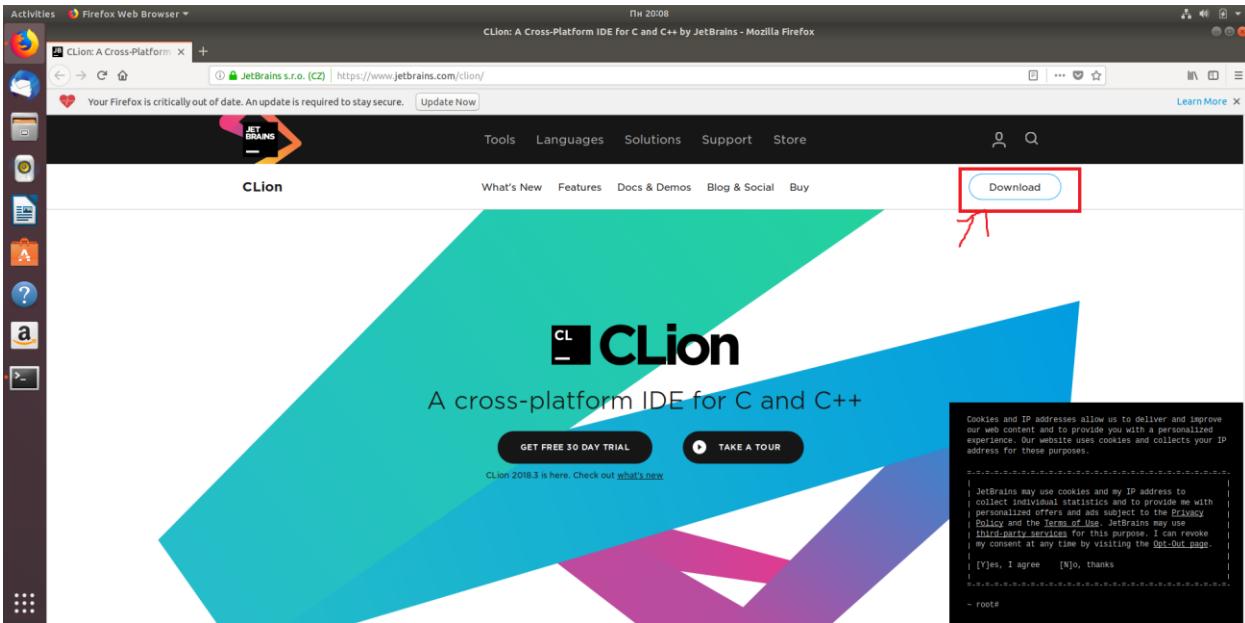


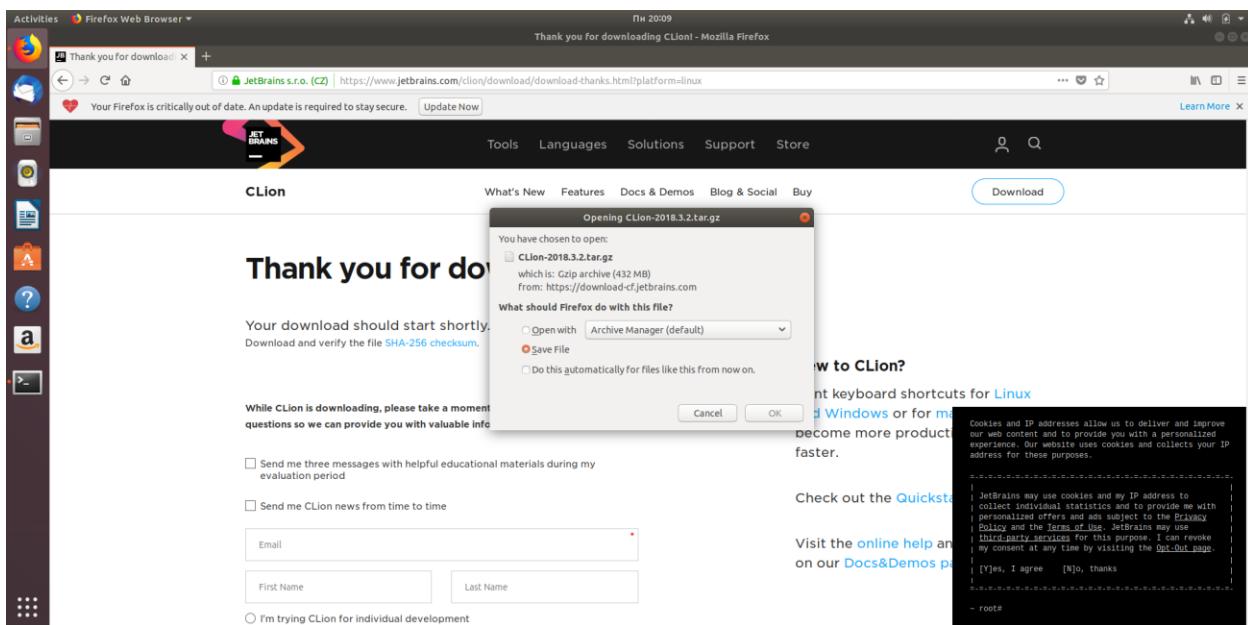
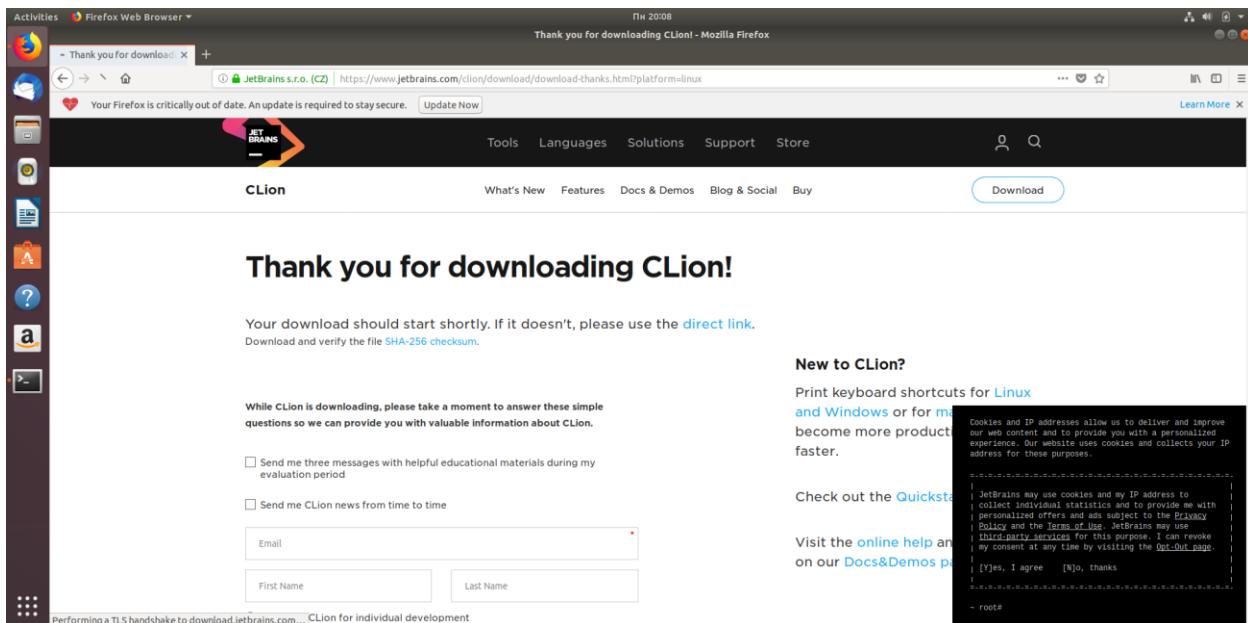
Now you can run a program by clicking Run button



CLion

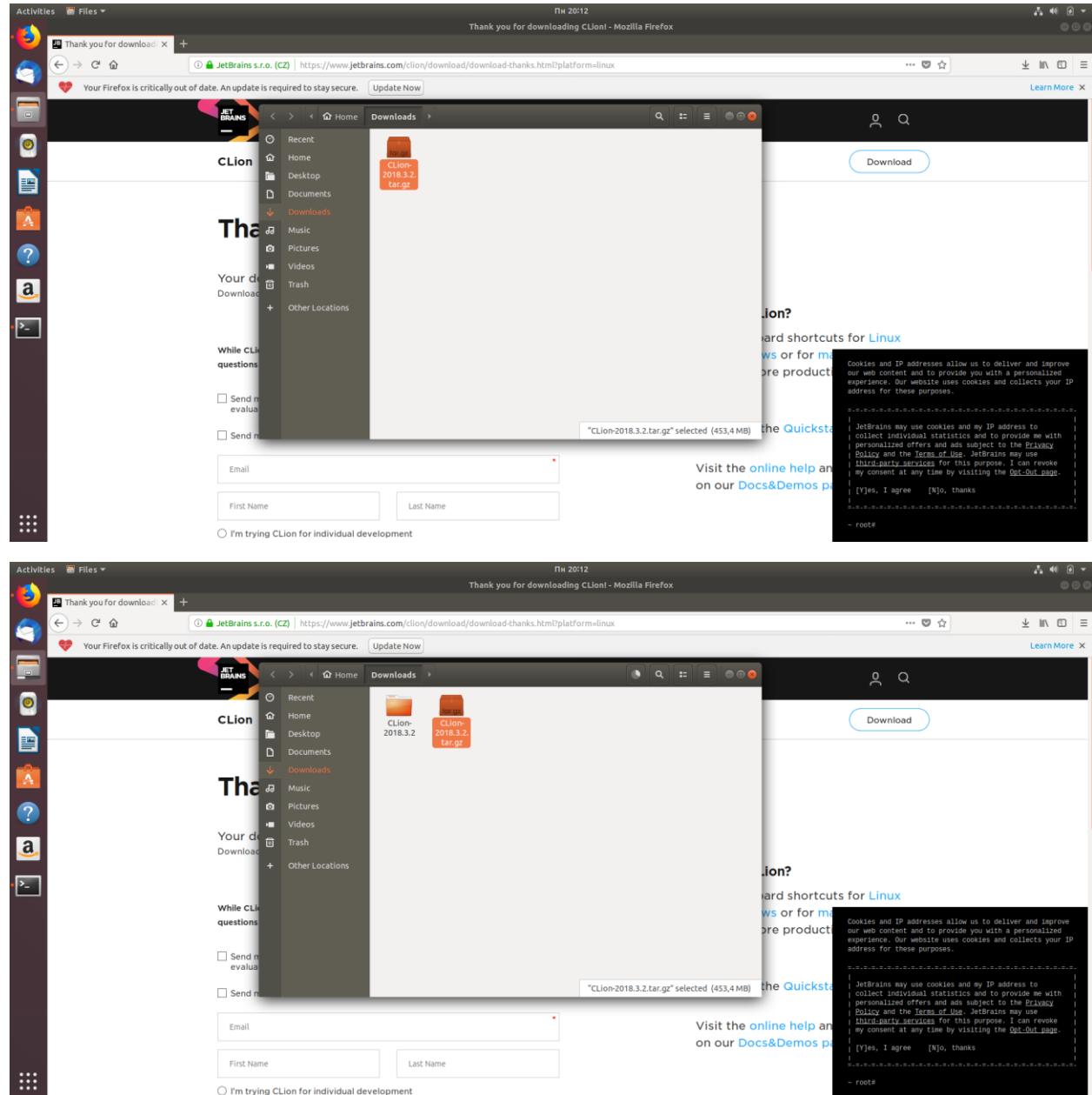
CLion download



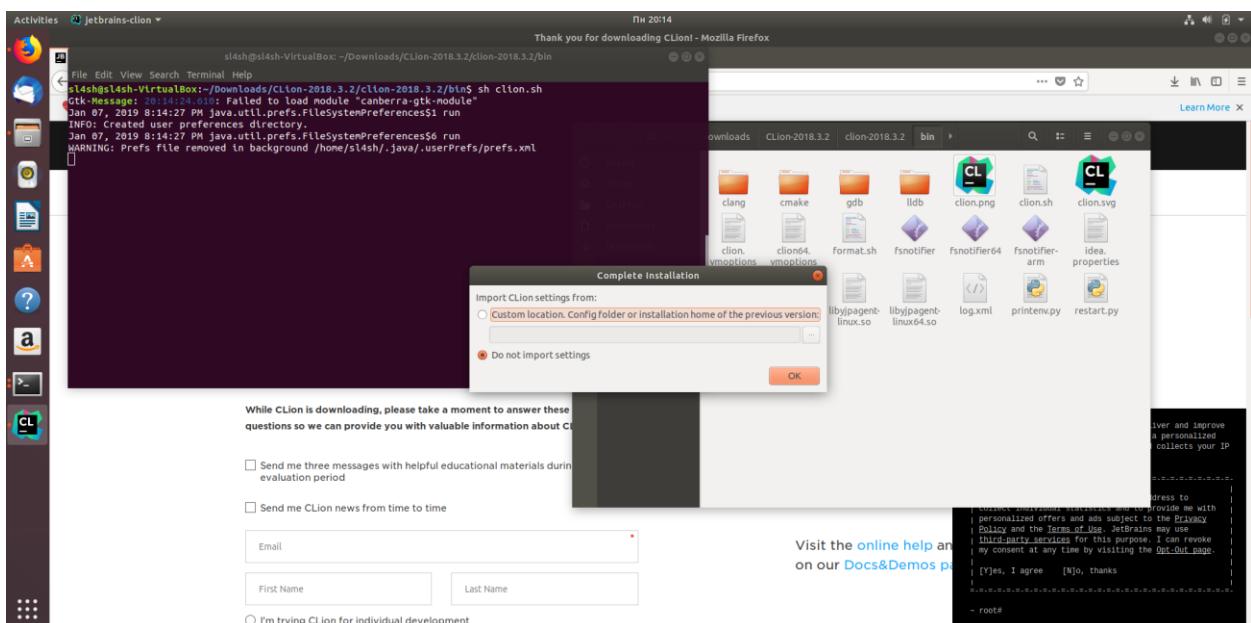
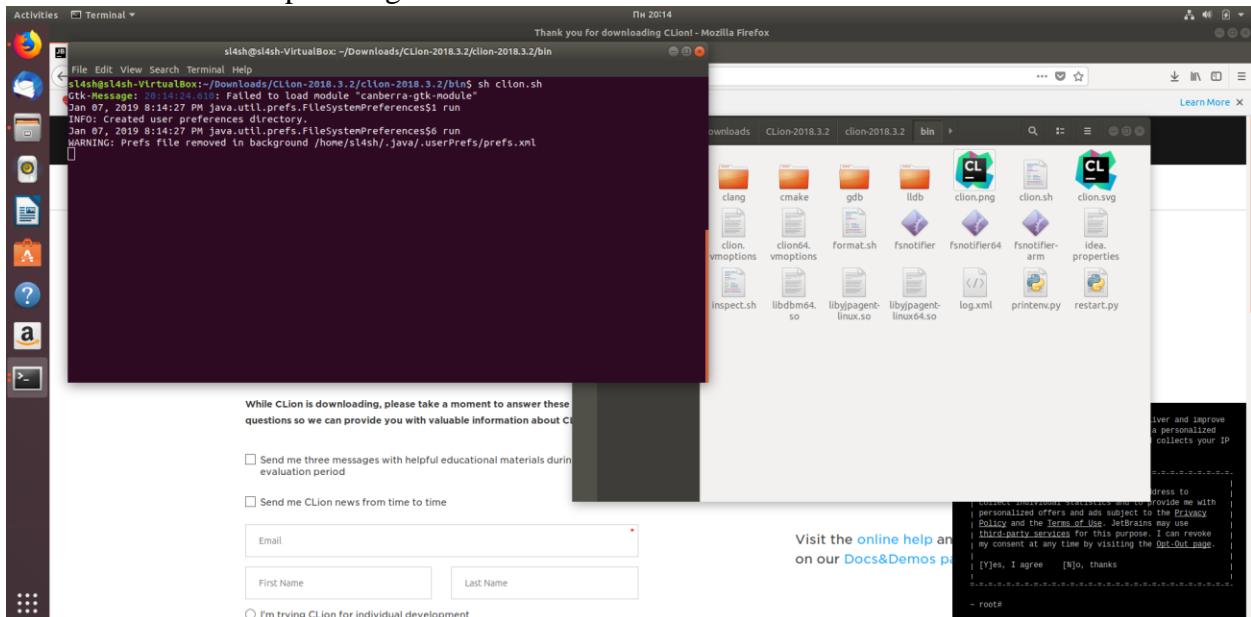


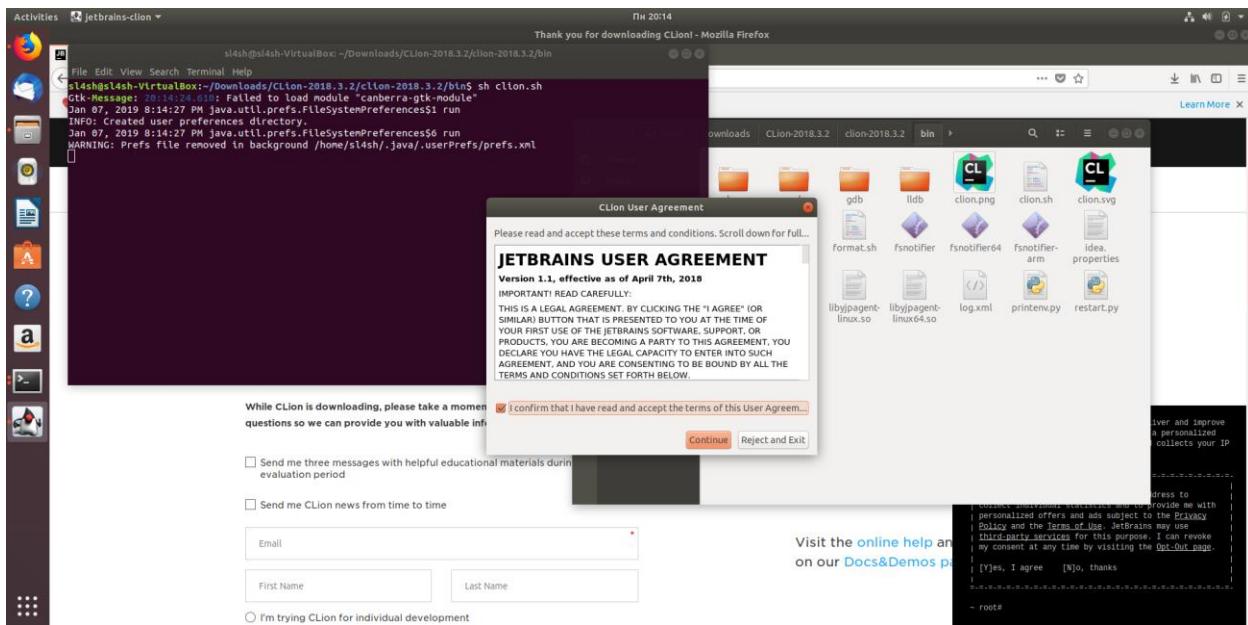
CLion installation

Extract folder from archive

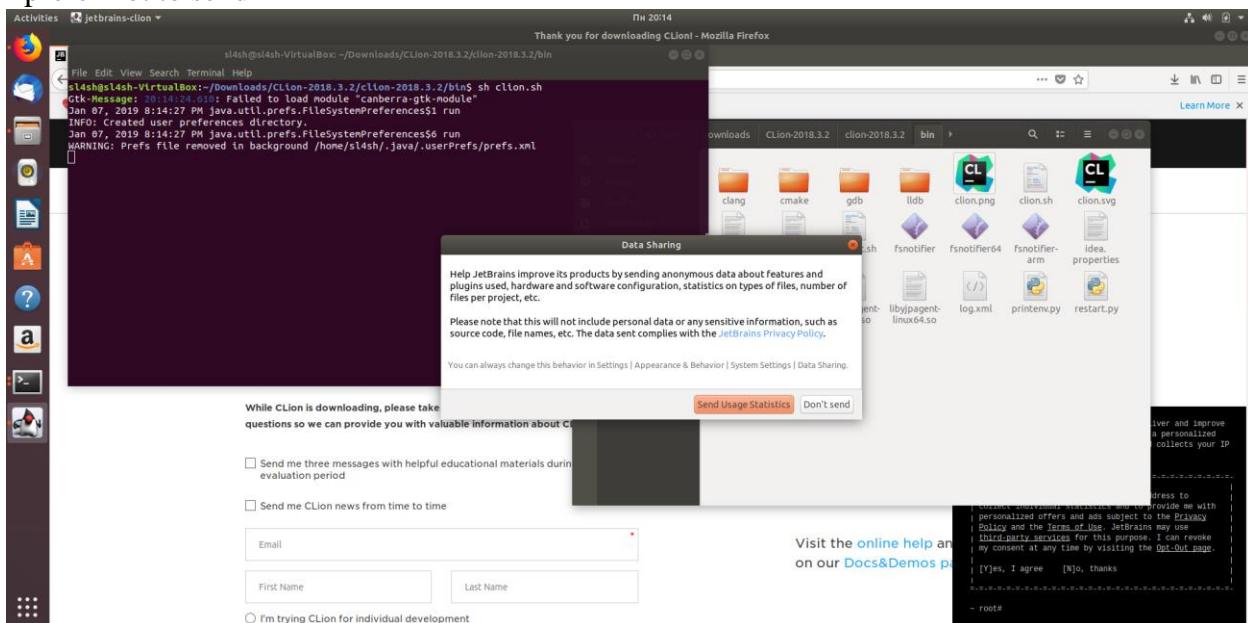


Then run clion.sh script through terminal

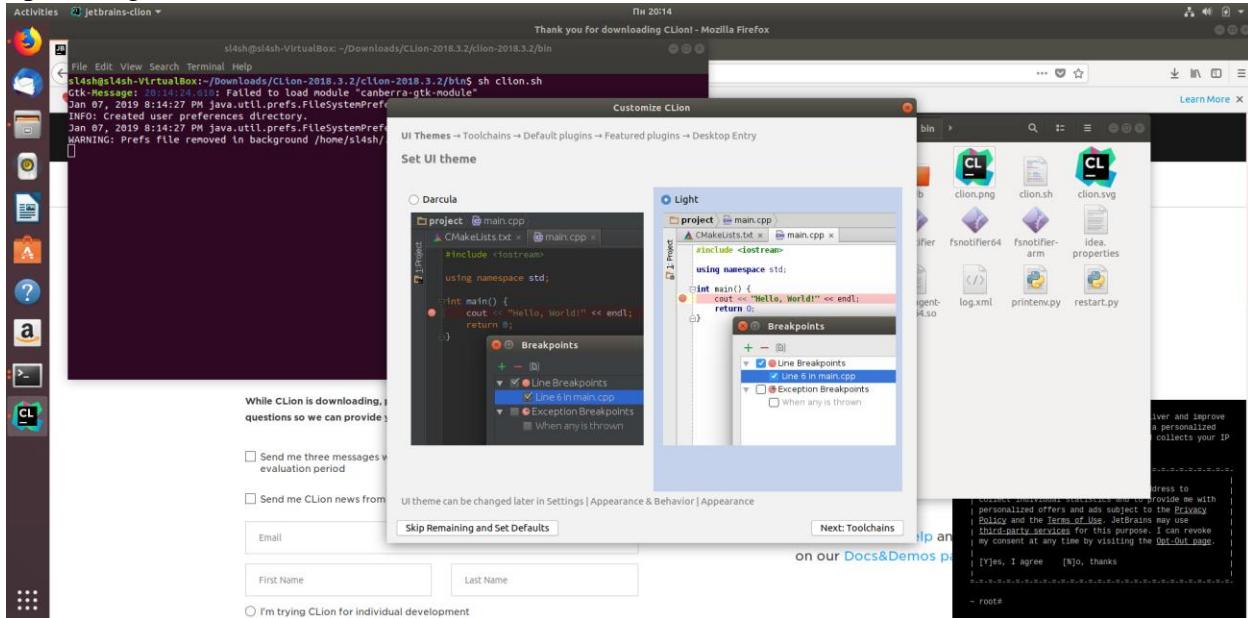




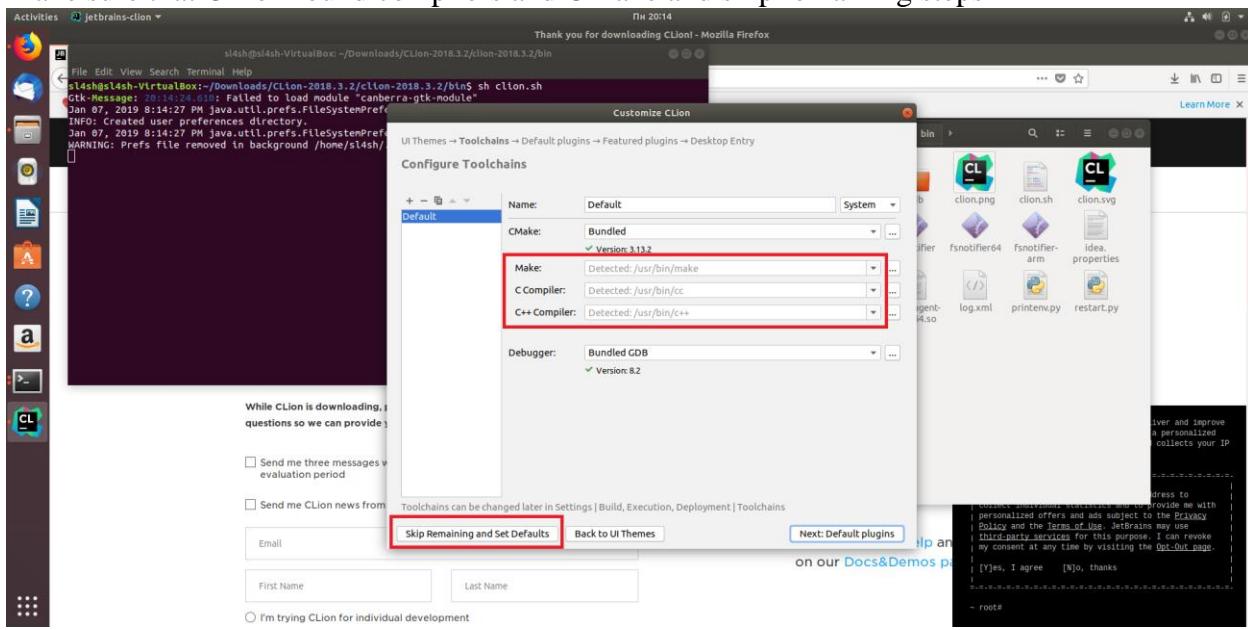
I prefer not to send



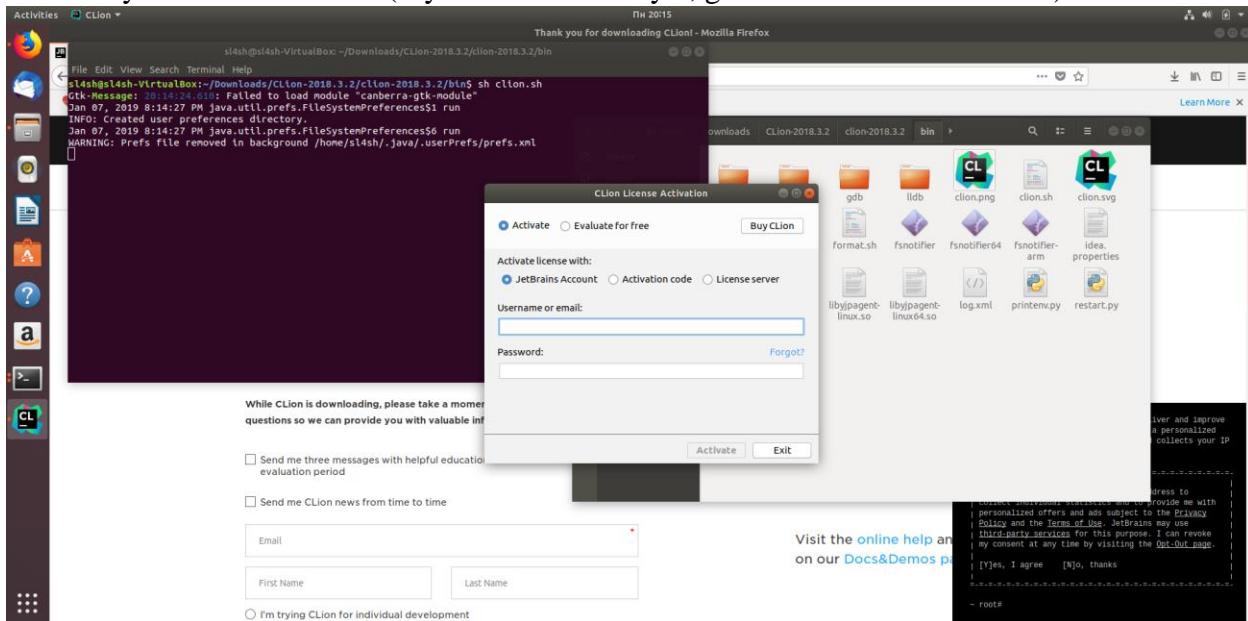
I prefer light theme



Make sure that CLion found compilers and CMake and skip remaining steps

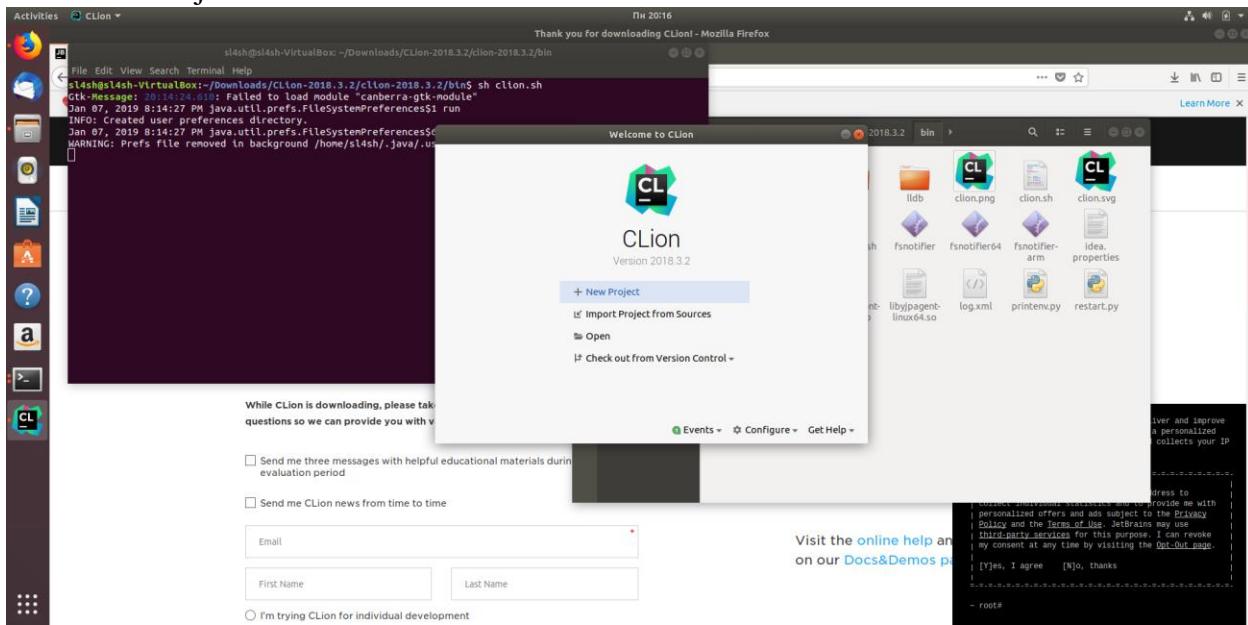


Activate your student license (if you don't have it yet, get it on JetBrains' website)

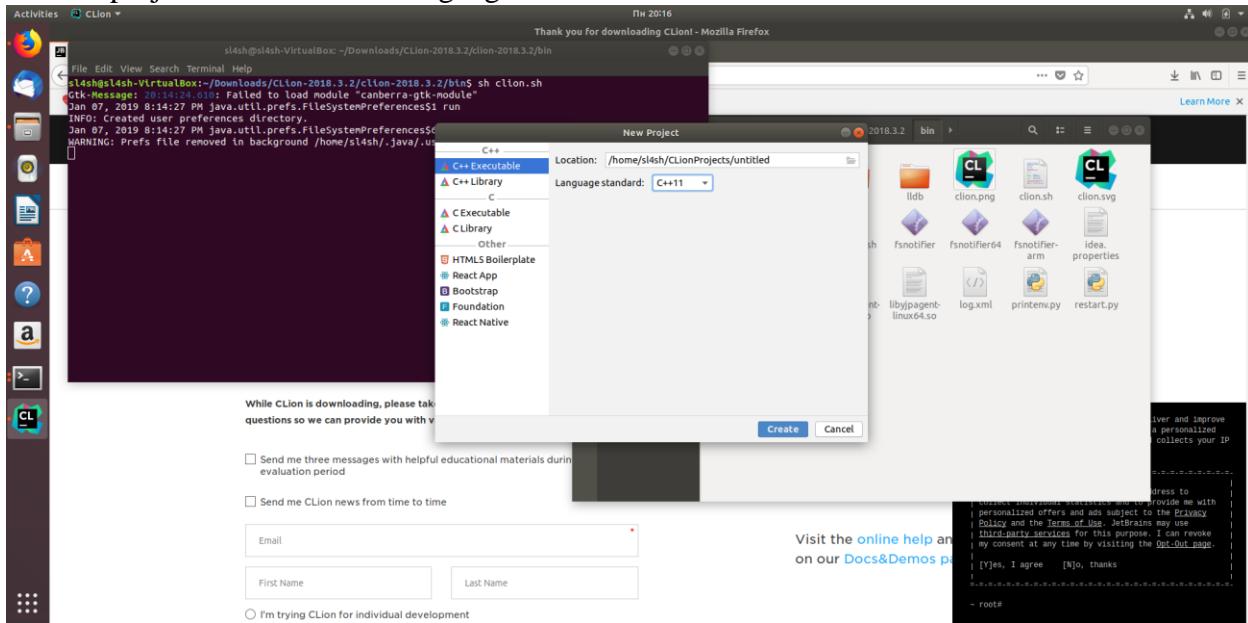


First project

Click New Project



Choose project folder and set Language standard to C++11



Now you can run this program by clicking Run button

