Install Linux Mint 20

Firstly, we will download image for Linux Mint. Go to **https://linuxmint.com/**.
Go to download sector and choose Linux Mint version **20.2**. Take Cinnamon Edition of Mint.

Here we have information about Linux Mint. Below that, we have mirrors (links) from which we can download our Linux Mint. You can choose whatever location you want. Best link for you will be the closest link to your geographical location.

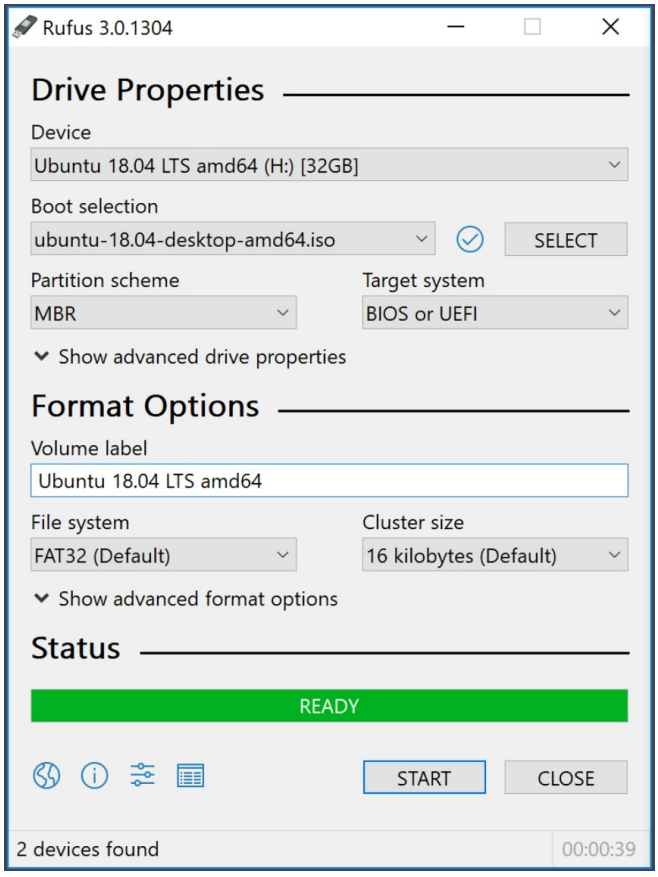
For example, if you are in UK, you can click on **University of Kent UK Mirror Service**.
After that pop-up will show up. Just save the file on your machine and now we have Mint image.

Next thing we will do is to download and setup tool with whom we will create our bootable USB.

Users which use Windows operating system, can use Rufus tool.
Users which use Linux operating system, can use UNetBootIn tool.

Let's first help Windows users. Go to **https://rufus.ie/** in our browser.
Scroll little down, and you will see download section.

Click on Rufus **3.17** or whatever is the last version at this point. Save that file on your machine. Rufus is executable file, which means that you don't need to install anything or to setup anything else. Just start the file, which you downloaded by double click on him.



Now you can plug NEW USB into your machine, on which we will put our Linux Mint. When you open Rufus, you will see window like this.

Let's explain all fields:

- In device field you will select your New USB

- On boot selection click on SELECT button,find and choose image for Linux Mint

- Leave partition scheme and target system just the way they are right now

- On volume label put new name of your USB, let's say in this case we can put: LinuxMint**20.2**

- Leave file system and cluster size just the way they are right now

After this you can click on START, and Rufus will create your USB as bootable USB, so we can install system on our machine from that USB.

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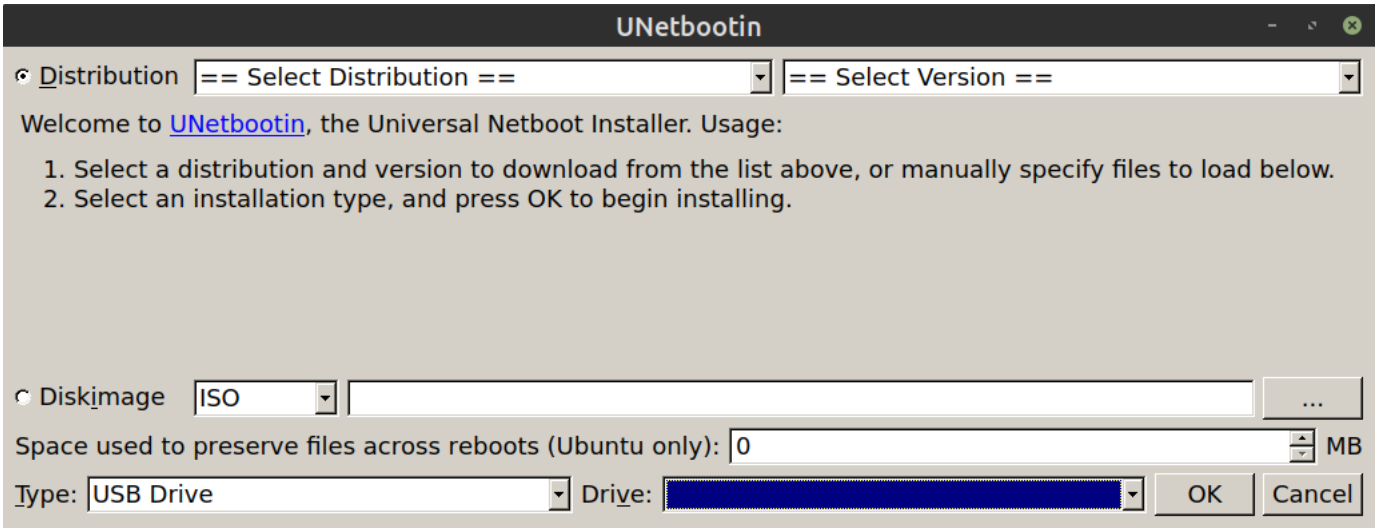
In case you already have Linux, but you didn't install new system yet, you can do this.
Tool we want to use on Linux, so we can create our bootable USB, will be UnetBootIn.
To install UNetBootIn execute following commands inside of out terminal.
You can open terminal on CTRL+ALT+T.

```
sudo apt-get update
sudo apt-get -y install gparted
sudo apt-get -y install extlinux
sudo add-apt-repository -y ppa:gezakovacs/ppa
sudo apt-get update
sudo apt-get -y install unetbootin
```

Now you can open UNetBootIn. You will get window like this:



We will click on DiskImage button. Beside that, we will click on three spots. When we get pop-up window we will find our Linux Mint image which we downloaded, and choose that file.

After that we will choose our USB on Drive section, and that's it. After that just click ok, and wait for UNetBootIn to finish the process. It will be around 15 minutes.

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Now we have Bootable USB. We want to install Linux Mint system on our machine from USB.
First, we will enter into our BIOS environment. How we can do that? Restart your computer, and immediately when you hear that machine is power on, press DELETE button and HOLD, until you see BIOS window. On my machine for example, on Asus motherboard, BIOS is like this:

Most modern motherboards use the DEL key, but laptops and desktops are less consistent.
For example, hitting F2 might work on an Asus, you'll need F10 on an Acer computer.

If you don't know the hotkey for your computer, you can look and see if a message comes up during starting of system, telling you which key to press to start BIOS.

Enter into Boot section. In my example I will press F7 to enter into advanced mode, and then I will enter into BOOT section. In BOOT section, find your BOOT device list, and for first BOOT device setup your USB from which you want to install your system. You will find name of the USB with UEFI mode. When you setup your USB, as first device, press F10 and enter. Now next boot will start from your USB, so we can install Linux Mint on our machine.

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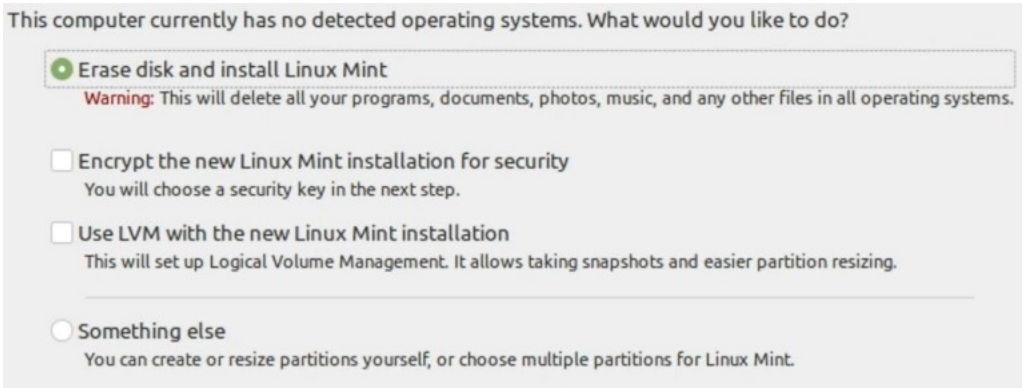
Now we started Linux Mint from USB.
We have icon Install Linux Mint, on which we will click to start our installation.

First choose your language and your Keyboard Layout. After that you will get one check box, which will ask you to install third-party software for your system.

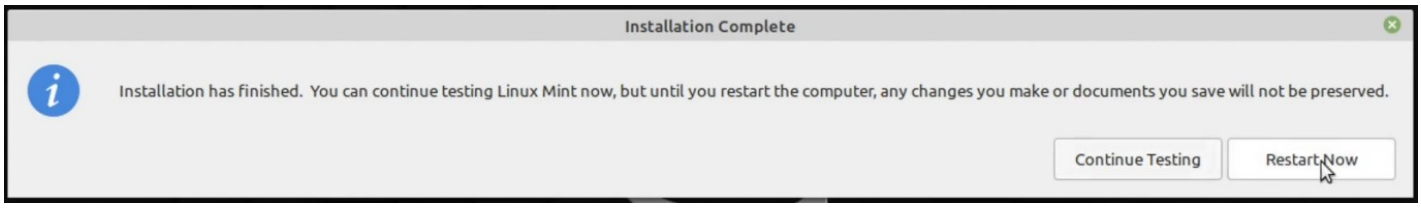
Don't check that out. We don't want to do that now. All drivers and other 3rd party libraries, we will install after we install our system. So, don't check that box, just click on continue.
After that installation will ask us how we want to install our system, and you will get this:



We will execute basic installation, so we will click on **Erase Disk and install Linux Mint**.
After that we will click on Install Now. You will get warning about changes on disk.
That's fine, just click continue.

Next, pick your timezone for your system, and click on continue.
After that fill your info about your name, username, computer name and password for your user.

After you fill everything just click continue, and wait for installation to finish.
After installation is finished, you will see message like this:



Just click on restart. After restart unplug your USB, and now you will start your new Linux Mint from your machine, and not from USB.

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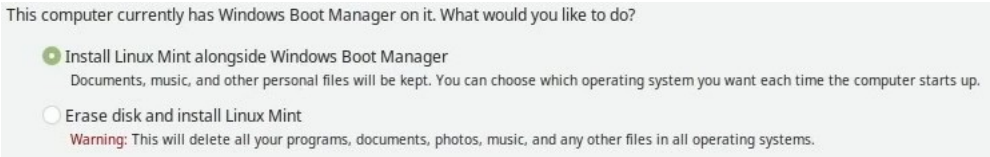
In case, where you want to install Linux Mint beside Windows10, where those two systems will share disk, you can do Dual-Boot configuration. On installation type, in that case you will see:



When you choose that option and go continue, you will see window like this:

Here you will choose how much space do you want to reserve for Win10 and how much for Linux. When you choose that, just click on Install Now button. All the rest about installation is the same. You can also check examples on internet and YouTube, about how to Dual-Boot Windows10 and Linux Mint. One of the examples:

https://www.youtube.com/watch?v=4ptHbkXhR_k

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Setup and Configure Linux Mint 20

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After you install Mint and login into your system, you will get welcome panel. Go to <First Steps>. Launch Driver Manager. Enter password of your user and wait for Update of list. Then you will get what is needed to be Update by your system, maybe your graphical card, chipset or something else.

In my case, that would be graphical card.
Click on Apply Changes, and after Applying, click on Restart.

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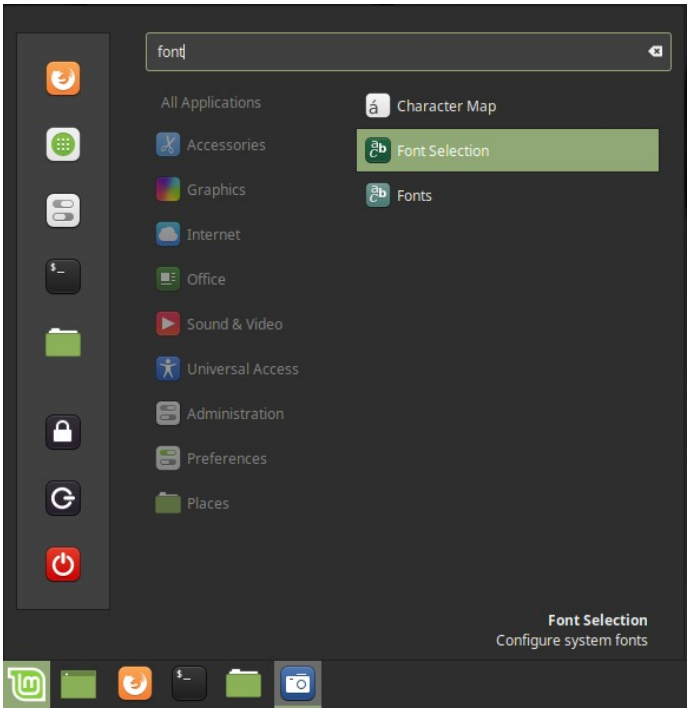
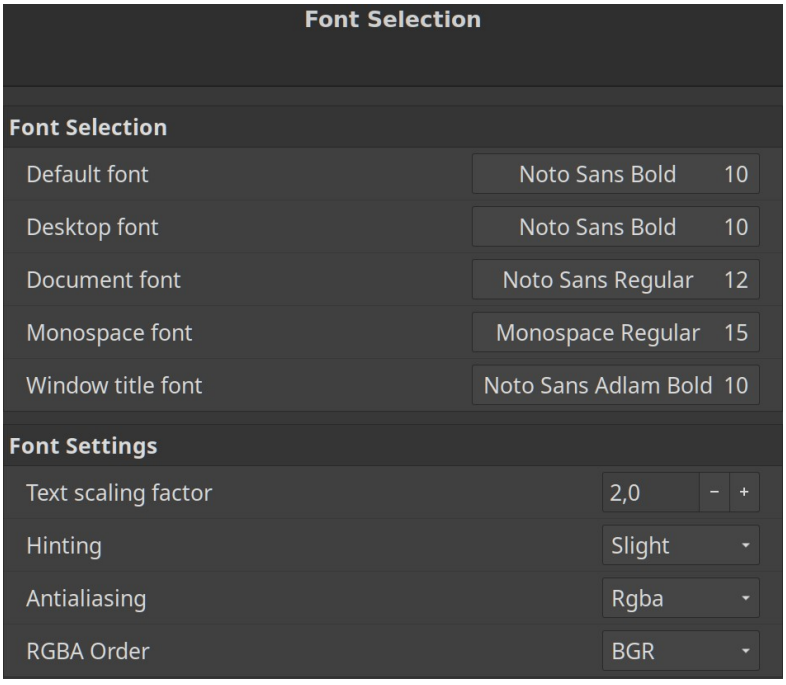
After that we can change Font and Design of system. Click on start and search for ``Font Selection``. You can write your settings. For example, this is my setup, if you want wide design with big letters.





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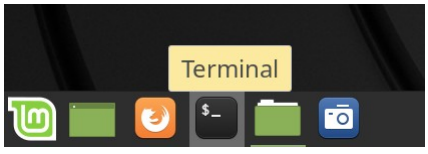
After that we can change theme of system. Go to start and search for <Themes>.
We can install another theme from list. Go to <Add/Remove> sector and update cache list.

You can install specific theme if you want. After installation you will see that theme like this:

After that go back to <Themes> sector and chose theme for specific area.
Very important part of Linux is Terminal.



We can also open terminal via CTRL+ALT+T. In <Edit> sector we have <Preferences> sub-sector. There you can modify your terminal design. After change it could look something like this:

Here is a list of good colors for terminal:

33 - D2- E8 = Golang Dark	46 - 48- 55 = Background 1
97 - F1- F6 = Golang Light	41 - 42- 49 = Background 2
6E - BA- F2 = Sky Blue	44 - 46- 52 = Background 3

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After this we need to upgrade system and install and update important libraries.
Before we execute commands, we need to know one thing.

What is SUDO?

SUDO is command that allows a permitted user to execute a command as the superuser or admin of the system. By default, SUDO requires that users authenticate themselves with a password.

That is fine for security reasons, but there will be a lots of commands executed with SUDO on start. Then, in that case every time when we want to execute command, system will ask us for password.

Can we do something so system wouldn't ask us every time for password? **YES WE CAN!**

There is a list of all administrators and superusers of the system.
That file is **/etc/sudoers**. How we can modify that file? Execute in terminal following command:

```
sudo nano /etc/sudoers
```

Here sudo is sub-command, nano is text editor with whom we will edit our files and /etc/sudoers is our file which we will modify. Scroll to the last line of the file and add following line:

```
a413 ALL=(ALL) NOPASSWD:ALL
```

My user in this case is **a413**. So in your case, if for example, your user is **alex413**, your line is:

```
alex413 ALL=(ALL) NOPASSWD:ALL
```

After we add this specific line, we will press CTRL+X, then we will type Y, which will confirm that we want to apply our new modification, and then we will type name of that file. We can leave the same name, or we can write new one.

Now when we execute command with sudo, system won't ask again our user for password.

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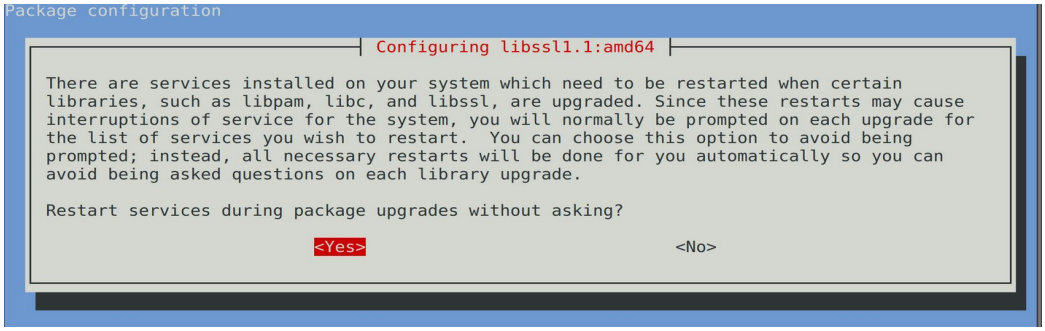
Open your terminal and write these commands one by one. After each command execute ENTER.
Every new line is new command.

If we want to copy something from terminal we use CTRL+SHIFT+C.
If we want to paste something into terminal we use CTRL+SHIFT+V.

Our script have following commands:

```
sudo apt-get update
sudo apt-get -y upgrade
```

At some moment in upgrade command you will get this message:



Select YES and press Enter. System ask us to restart current services while we are upgrading our system, nothing more then that. After upgrade is finished, continue with rest of commands.
At the end of upgrade we will get error. We need to configure our dpkg package.
After that run again upgrade with new configuration.

```
sudo dpkg --configure -a        (We will configure dpkg package!)
sudo apt-get -y upgrade         (We will upgrade system again with new configuration!)

sudo apt-get update
sudo apt-get -y install gcc-10 g++-10                (Compailer for C++ Programming!)
sudo apt-get -y install build-essential              (Essential package of upgraded tools!)
sudo apt-get -f install                              (Check if we missed some dependencies!)

sudo apt-get -y install libcurl3                     (Dependency for CURL!)
sudo apt-get -y install curl                         (Command line tool to transfer data!)
sudo apt-get -y install apt-transport-https          (Transfer data over secure https protocol!)
```

```
sudo apt-get -y install software-properties-common
```

Note: Easily manage your distribution and independent software from vendor software sources!

```
sudo apt-get -y install wget                         (To download data from specific location!)
sudo apt-get -y install mint-meta-codecs             (Install all video codecs with VLC Player!)

sudo apt-get install -y openssh-server               (Install SSH Server!)
sudo apt-get install -y sshpass                      (Tool for SSH Server!)

sudo add-apt-repository -y ppa:git-core/ppa          (Add key for GIT Repository!)
sudo apt-get update                                  (Update our apt-get list!)
sudo apt-get y install git                           (Install GIT from apt-get list!)
```

Install Golang on Linux Mint 20

To install and setup Golang on our machine:

```
wget https://go.dev/dl/go1.17.3.linux-amd64.tar.gz
sudo tar -C /usr/local -xzf go1.17.3.linux-amd64.tar.gz
sudo echo "export PATH=$PATH:/usr/local/go/bin" >> ~/.bashrc
source ~/.bashrc
go version
```

What this list of commands do?

1. Download tar.gz package from official google repository via **wget** command
2. Extract downloaded package to **/usr/local** directory

3. Add **"export PATH=$PATH:/usr/local/go/bin"** line in our **~/.bachrc** file so our system could find files which can be executed and which are connected with Golang language

4. Update **~/.bashrc** file with new $PATH
5. Check is Golang is install and setup correctly and see the version of Golang

Note: If commands under **2,3,4** are not giving any output, everything is fine, and you may proceed to next steps. After this Golang programming language has been installed on your machine.

Instead of **1.17.3** you can use another version.
If you want to remove old version of Golang, so you can install new one, first remove old like this:

```
$ sudo rm -rf /usr/local/go
$ sudo apt-get remove golang-go
$ sudo apt-get remove --auto-remove golang-go
```

If you want to search on the internet, for specific instructions, how to install something, in search look for installation for Mint **20** or Ubuntu **20.04**.

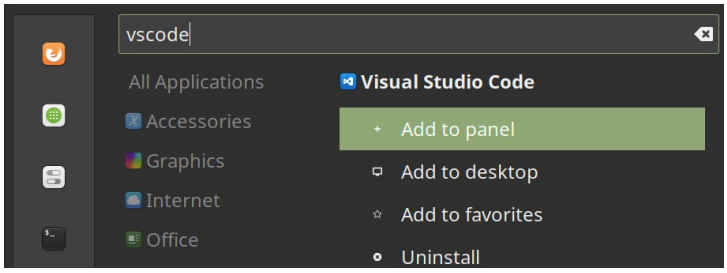
These two systems are **100%** compatible, so instructions for both systems will be the same.

Text editor for Golang

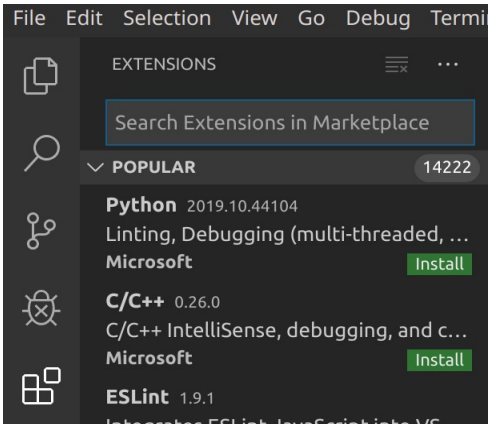
To install vsCode, execute following commands in your terminal:

```
sudo apt-get update
sudo apt-get install software-properties-common apt-transport-https wget
wget -q https://packages.microsoft.com/keys/microsoft.asc -O- | sudo apt-key add -
sudo add-apt-repository "deb [arch=amd64] https://packages.microsoft.com/repos/vscode stable main"
sudo apt-get update
sudo apt-get install code
```

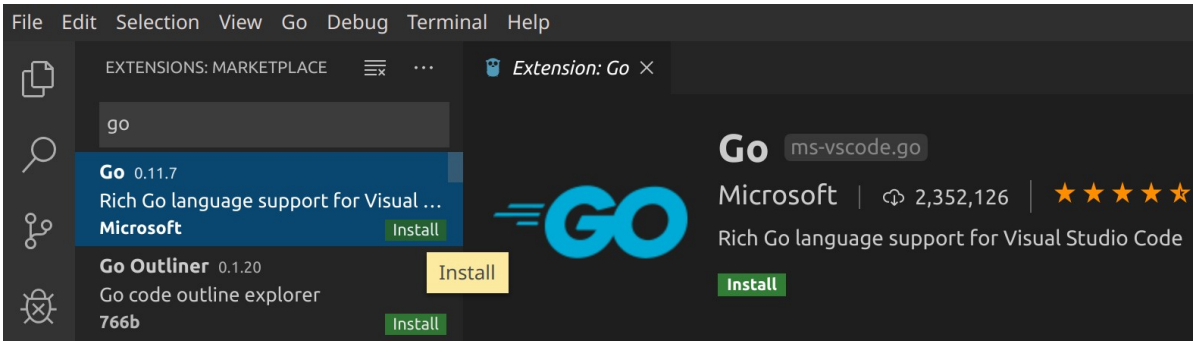
After installation all these programs you can find in Start Menu. If you want to setup them on start panel, find program in Start, select them with right-click and press Add To Panel. For example:



When we enter in vsCode, on left side we will see 5 different vertical tabs.
Last tab is tab for extensions. Extensions are tools that help us to better process our language.



In search of extension tab, just type <go>. You will see extensions for Go programming language. Just click on install, and now you can write and process with better understanding Go files.



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