



Instrukcja instalacji oprogramowania dla środowiska **Linux**

Kurs **Java** od podstaw

Przygotuj się jeszcze **przed** zajęciami! 



Specyfikacja komputera – Java od podstaw

- ✓ minimum 8 GB RAM,
- ✓ rekomendowany procesor Intel i5 lub Amd10,
- ✓ minimum 8GB wolnego miejsca na dysku,
- ✓ rekomendowana dystrybucja Ubuntu.



Lista programów i narzędzi używanych na kursie Java od podstaw

Do pobrania w domu, koniecznie przed zajęciami

Przed rozpoczęciem kursu pamiętaj, aby zainstalować Java OpenJDK 11 oraz 2 wersje IntelliJ IDEA: Community oraz Ultimate. Na początku używane będzie tylko Community. Natomiast z IntelliJ IDEA Ultimate prosimy o poczekanie z rejestracją do zajęć z zakresu „Technologia JSP i Servlety”.

Wtedy też otrzymasz darmowy dostęp na pół roku.

Pozostałe programy prosimy o pobranie i zainstalowanie przed zajęciami, aby móc płynnie rozpocząć zajęcia.



Lista programów i narzędzi używanych na kursie Java od podstaw

Programy do pobrania w domu. Koniecznie pobierz je przed zajęciami!

- ✓ Komunikator slack - <https://slack.com/get>
- ✓ Java OpenJDK 11 - [instrukcja instalacji \(slajd 6\)](#)
- ✓ IntelliJ IDEA – [instrukcja instalacji \(slajd 18\)](#)
- ✓ Git – [instrukcja instalacji \(slajd 30\)](#)
- ✓ maven
Pobierz najnowszą wersję ze strony: <https://maven.apache.org/download.cgi>
Instalacja: <https://maven.apache.org/install.html>
- ✓ MySQL - [instrukcja instalacji \(slajd 36\)](#)
- ✓ MongoDB - [instrukcja instalacji \(slajd 53\)](#)

Lista programów i narzędzi używanych na kursie Java od podstaw

Instalacja jest opcjonalna

* Apache Tomcat

Pobierz najnowszą wersję ze strony: <http://tomcat.apache.org/download-80.cgi>

Dokumentacja: <http://tomcat.apache.org/tomcat-8.0-doc/index.html>

* Wildfly

Pobierz najnowszą wersję ze strony: <http://wildfly.org/downloads/>

Dokumentacja: <http://docs.wildfly.org/>

* Wireshark

W terminalu uruchom poniższe polecenie:

```
sudo apt-get install wireshark
```

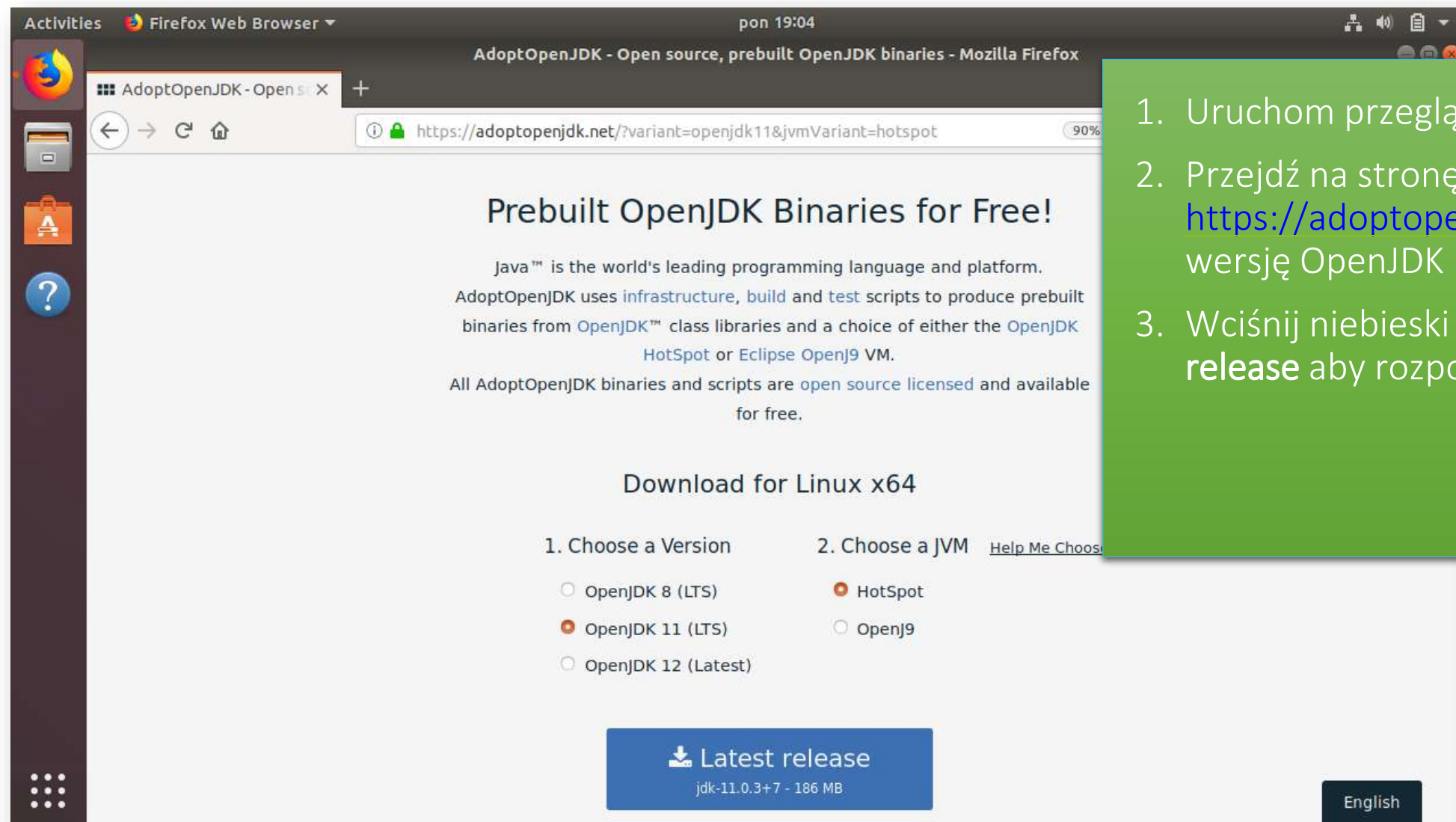
* Midnight Commander

W terminalu uruchom poniższe polecenie:

```
sudo apt-get install mc
```

Java OpenJDK





1. Uruchom przeglądarkę internetową
2. Przejdź na stronę <https://adoptopenjdk.net/> i wybierz wersję OpenJDK 11 (LTS) / HotSpot
3. Wciśnij niebieski przycisk **Latest release** aby rozpocząć pobieranie

Activities Firefox Web Browser pon 19:04

AdoptOpenJDK - Open source, prebuilt OpenJDK binaries - Mozilla Firefox


AdoptOpenJDK - Open source, prebuilt OpenJDK binaries - Mozilla Firefox

https://adoptopenjdk.net/?variant=openjdk11&jvmVariant=hotspot 90%

Prebuilt OpenJDK Binaries for Free!

Opening OpenJDK11U-jdk_x64_linux_hotspot_11.0.3_7.tar.gz

You have chosen to open:

 **OpenJDK11U-jdk_x64_linux_hotspot_11.0.3_7.tar.gz**
which is: Gzip archive (187 MB)
from: ...b-production-release-asset-2e65be.s3.amazonaws.com

What should Firefox do with this file?

☐ Open with Archive Manager (default)


☒ Save File

☐ Do this automatically for files like this from now on.

Cancel OK

☒ OpenJDK 11 (LTS) ☐ OpenJ9

☐ OpenJDK 12 (Latest)

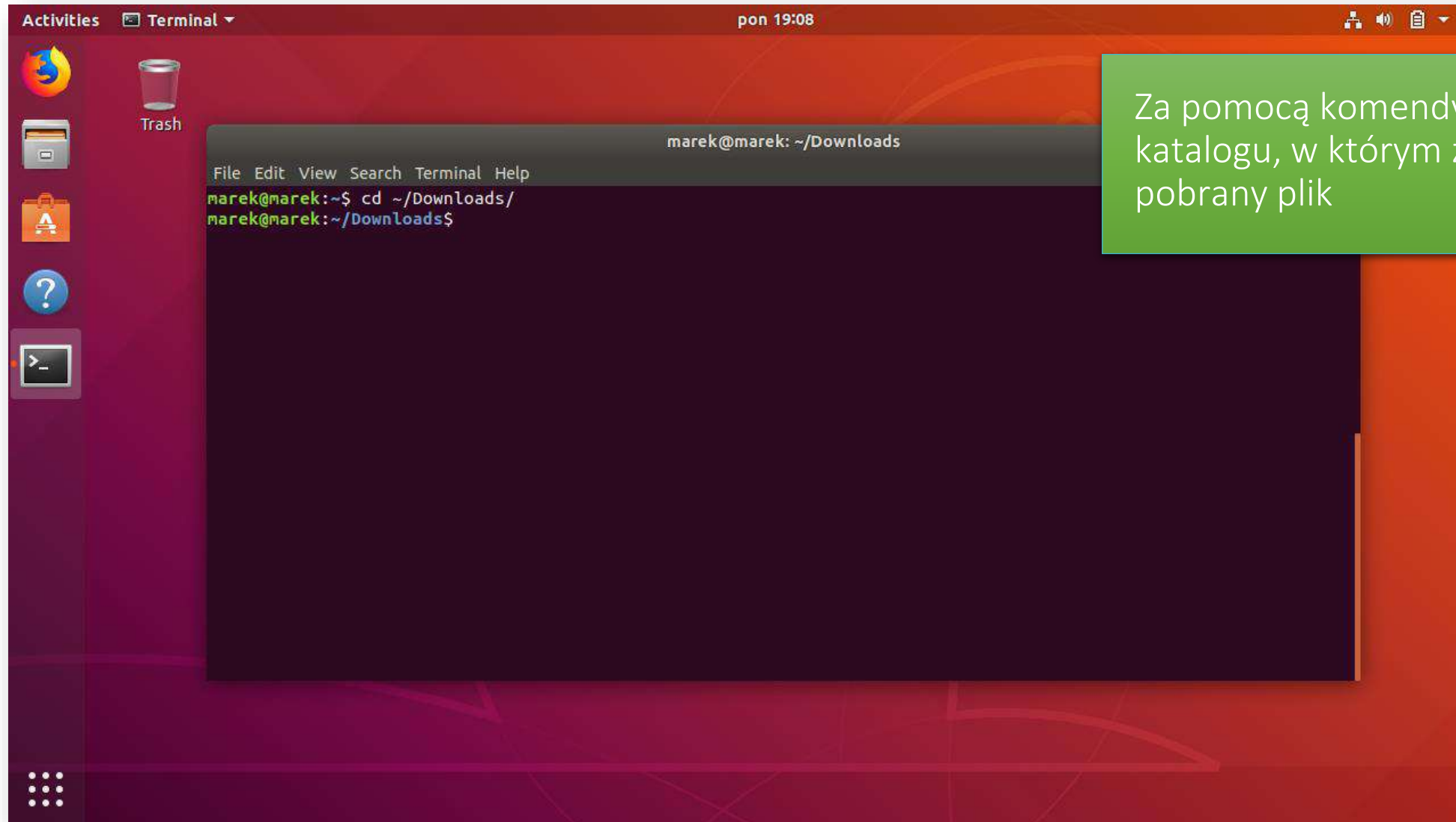
 **Latest release**
jdk-11.0.3+7 - 186 MB

English

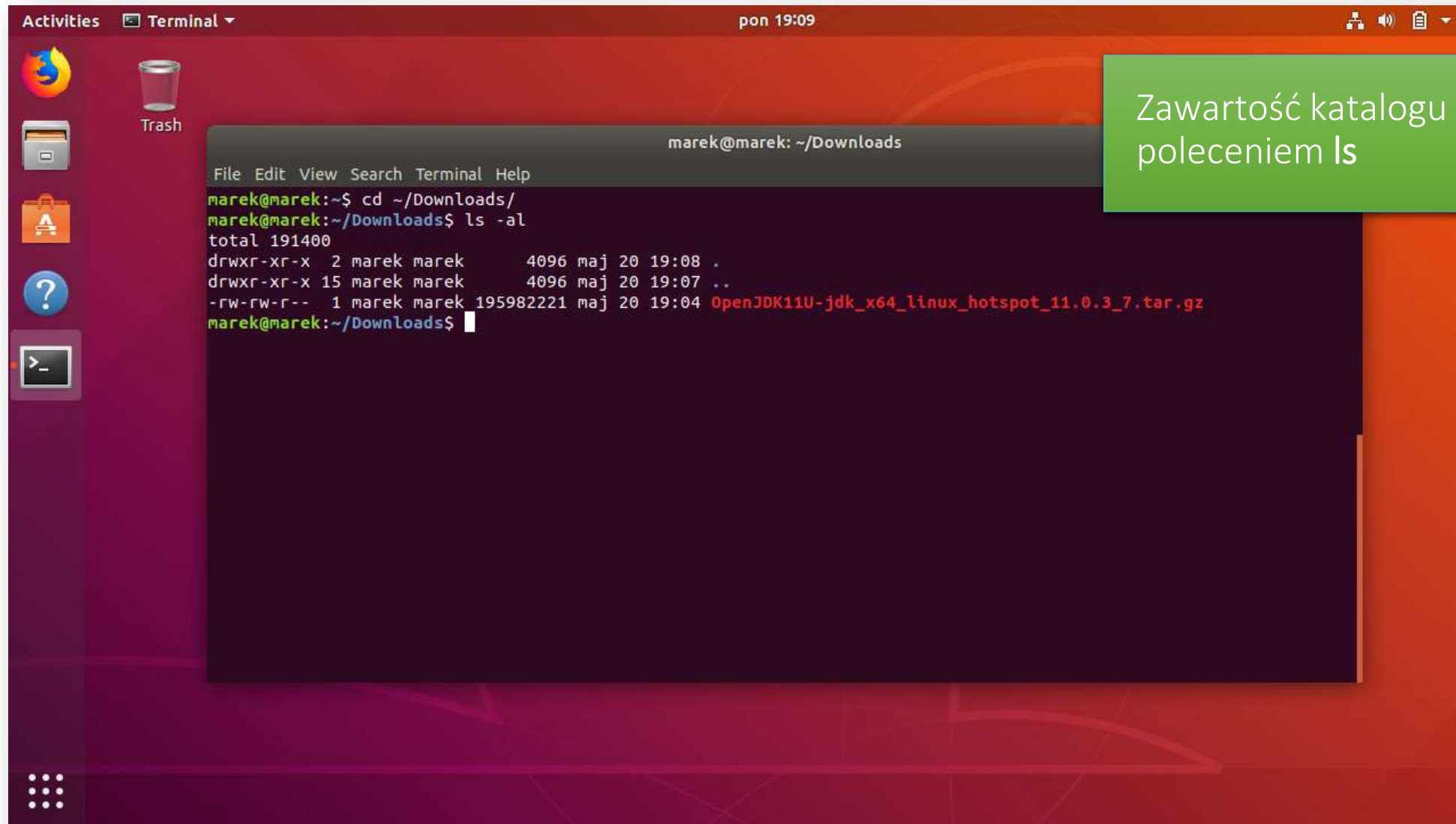
Wybierz opcję zapisu pliku



Otwórz aplikację Terminal



Za pomocą komendy `cd` przejdź do katalogu, w którym znajduje się pobrany plik

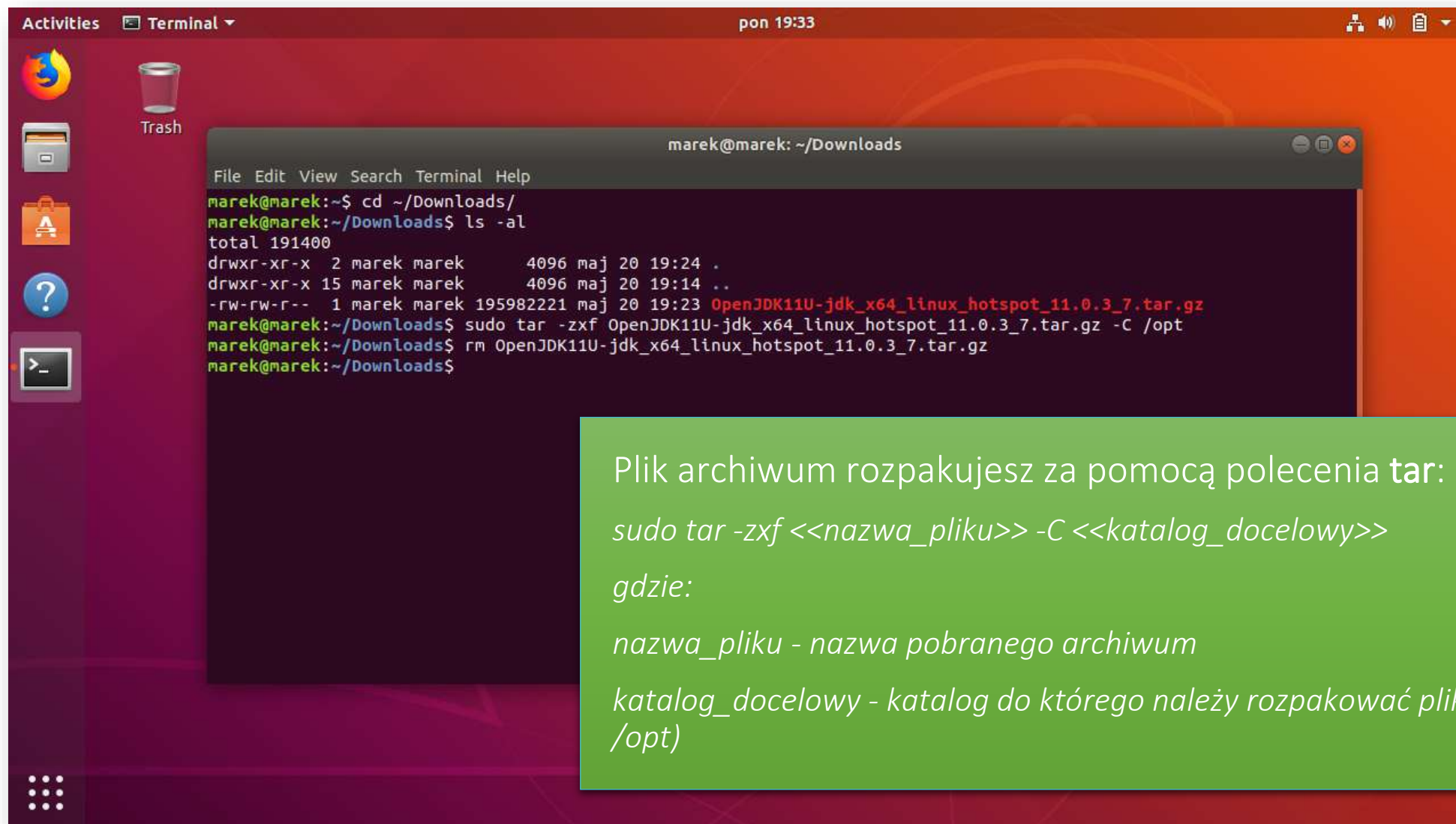


Activities Terminal ▾ pon 19:09

marek@marek: ~/Downloads

```
File Edit View Search Terminal Help
marek@marek:~$ cd ~/Downloads/
marek@marek:~/Downloads$ ls -al
total 191400
drwxr-xr-x  2 marek marek    4096 maj 20 19:08 .
drwxr-xr-x 15 marek marek    4096 maj 20 19:07 ..
-rw-rw-r--  1 marek marek 195982221 maj 20 19:04 OpenJDK11U-jdk_x64_linux_hotspot_11.0.3_7.tar.gz
marek@marek:~/Downloads$
```

Zawartość katalogu możesz sprawdzić poleceniem ls



The screenshot shows a terminal window titled 'marek@marek: ~/Downloads' with the following commands and output:

```
File Edit View Search Terminal Help
marek@marek:~$ cd ~/Downloads/
marek@marek:~/Downloads$ ls -al
total 191400
drwxr-xr-x  2 marek marek      4096 maj 20 19:24 .
drwxr-xr-x 15 marek marek      4096 maj 20 19:14 ..
-rw-rw-r--  1 marek marek 195982221 maj 20 19:23 OpenJDK11U-jdk_x64_linux_hotspot_11.0.3_7.tar.gz
marek@marek:~/Downloads$ sudo tar -zxf OpenJDK11U-jdk_x64_linux_hotspot_11.0.3_7.tar.gz -C /opt
marek@marek:~/Downloads$ rm OpenJDK11U-jdk_x64_linux_hotspot_11.0.3_7.tar.gz
marek@marek:~/Downloads$
```

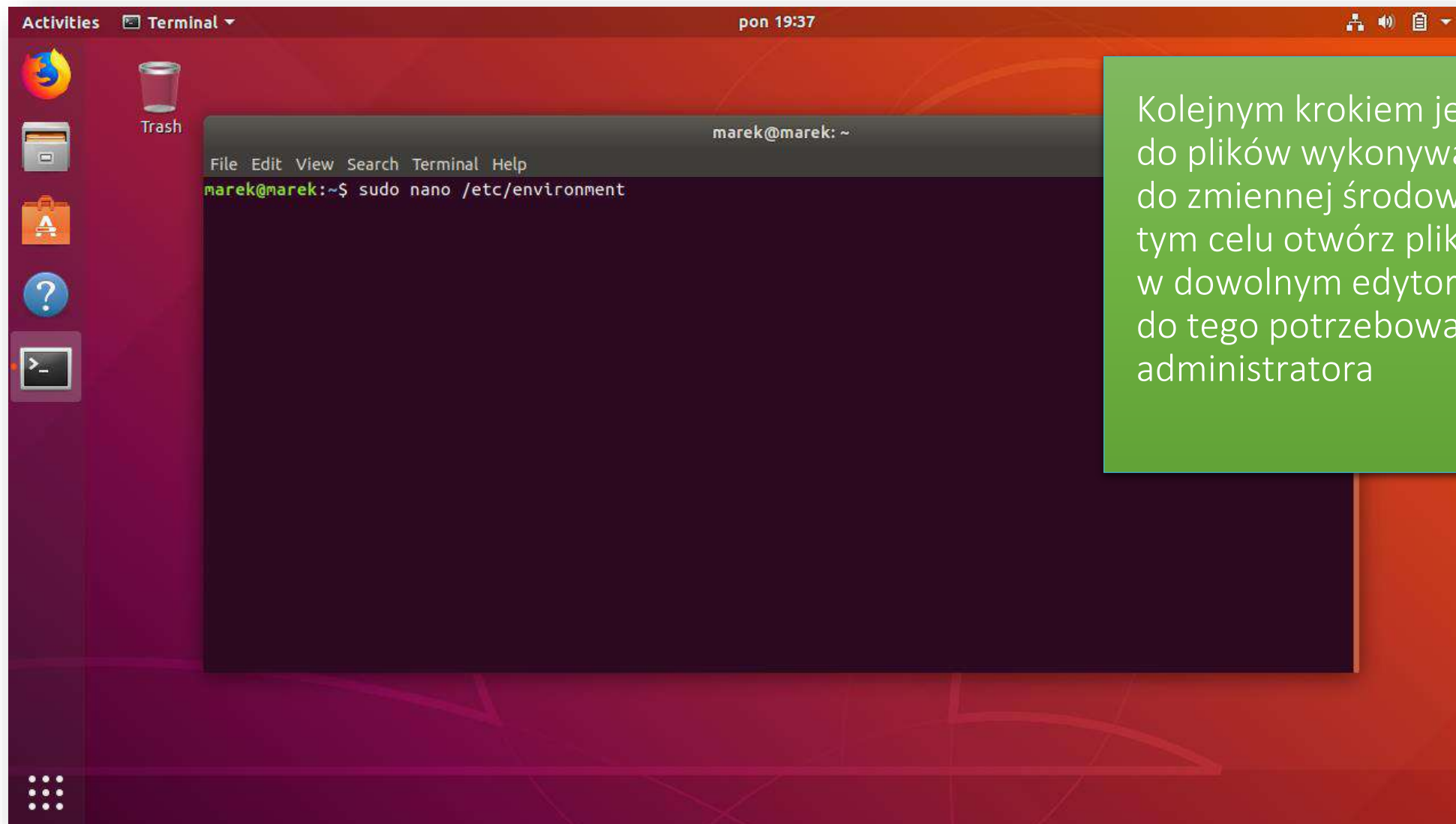
Plik archiwum rozpakujesz za pomocą polecenia **tar**:

`sudo tar -zxf <<nazwa_pliku>> -C <<katalog_docelowy>>`

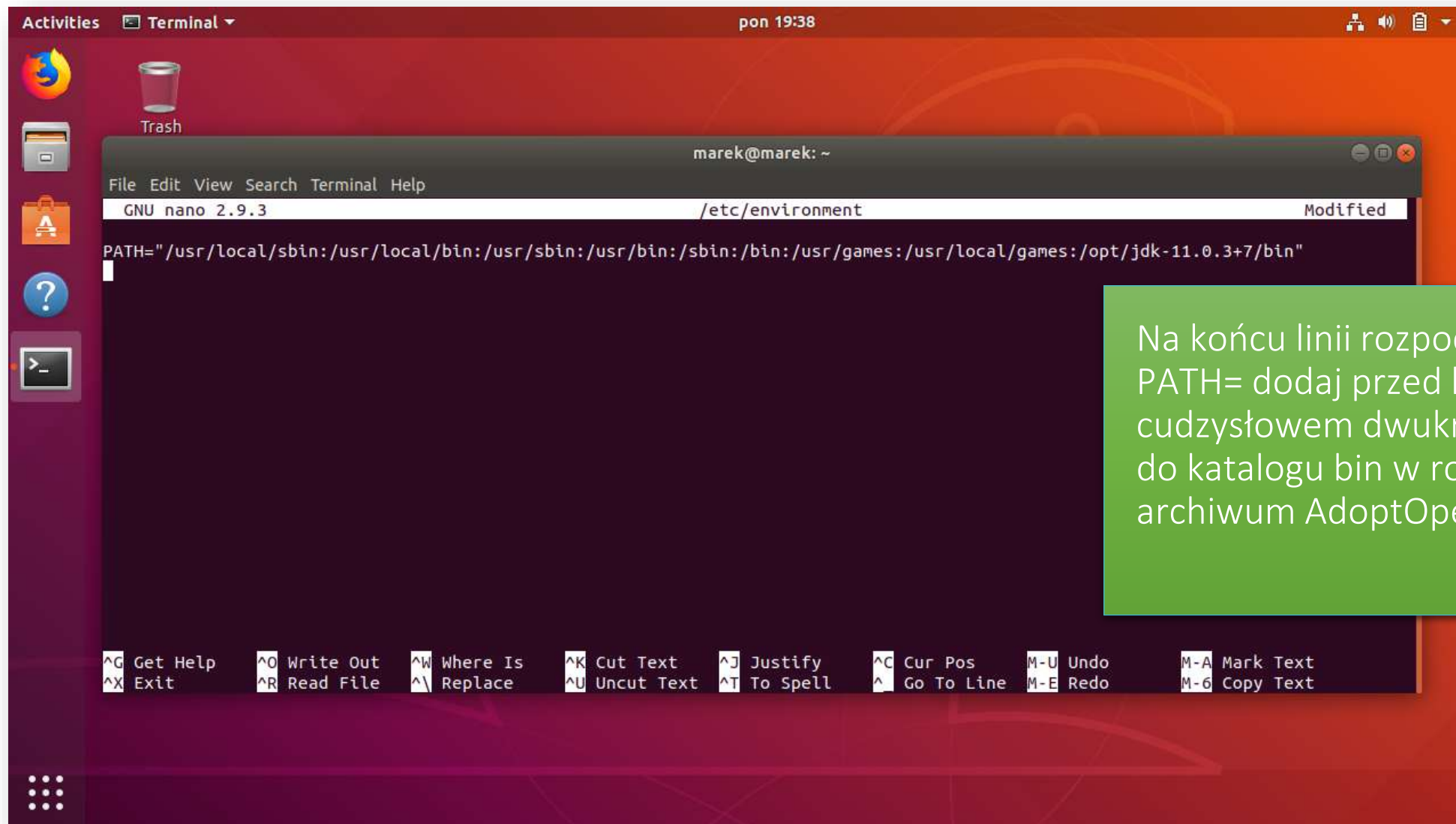
gdzie:

nazwa_pliku - nazwa pobranego archiwum

katalog_docelowy - katalog do którego należy rozpakować plik (np. /opt)

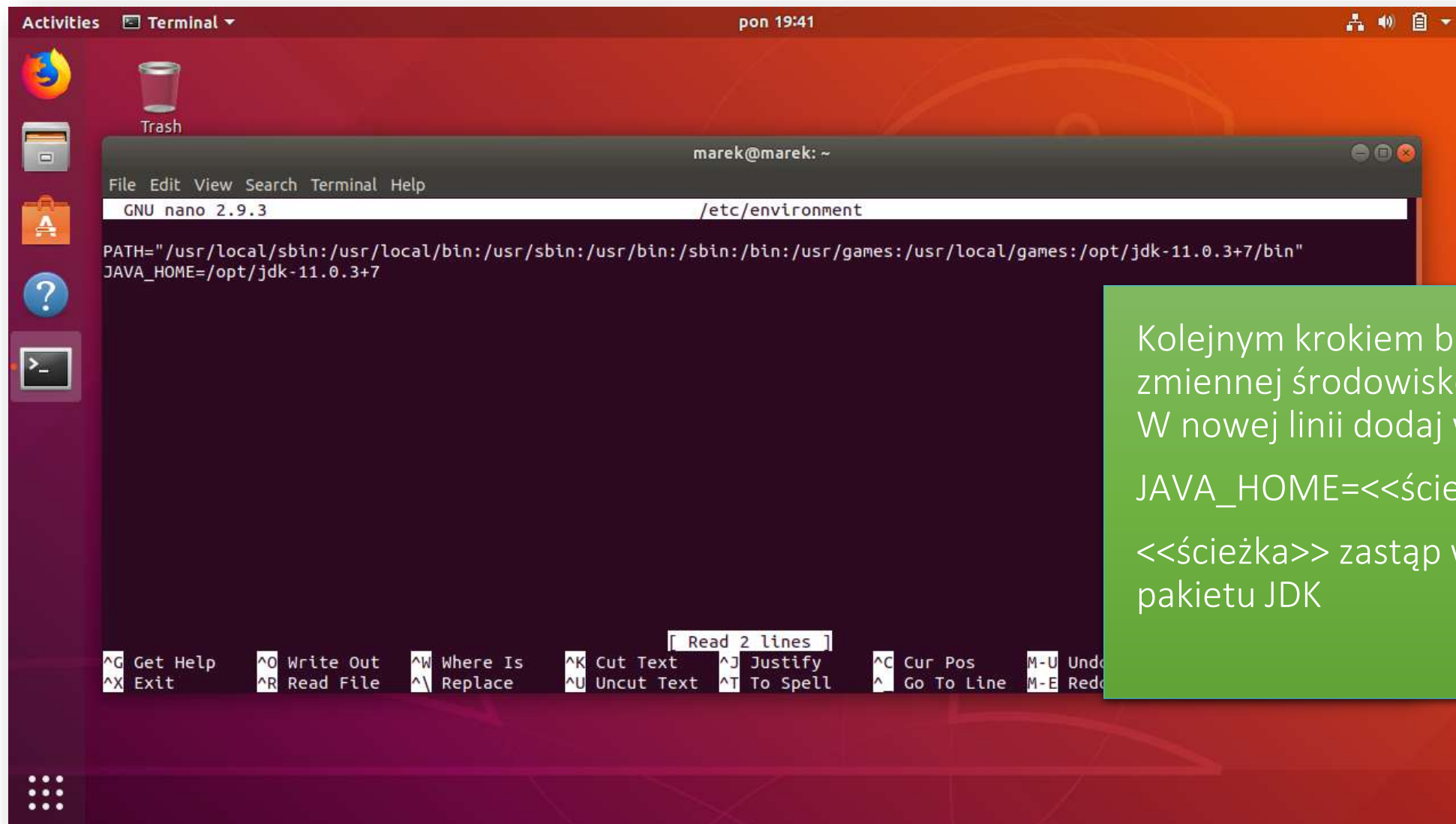


Kolejnym krokiem jest dodanie ścieżki do plików wykonywalnych pakietu jdk do zmiennej środowiskowej PATH. W tym celu otwórz plik `/etc/environment` w dowolnym edytorze tekstu. Możesz do tego potrzebować uprawnień administratora



```
marek@marek: ~
File Edit View Search Terminal Help
GNU nano 2.9.3 /etc/environment Modified
PATH="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/opt/jdk-11.0.3+7/bin"
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo M-A Mark Text
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo M-6 Copy Text
```

Na końcu linii rozpoczynającej się od PATH= dodaj przed kończącym cudzysłowem dwukropek oraz ścieżkę do katalogu bin w rozpakowanym archiwum AdoptOpenJDK

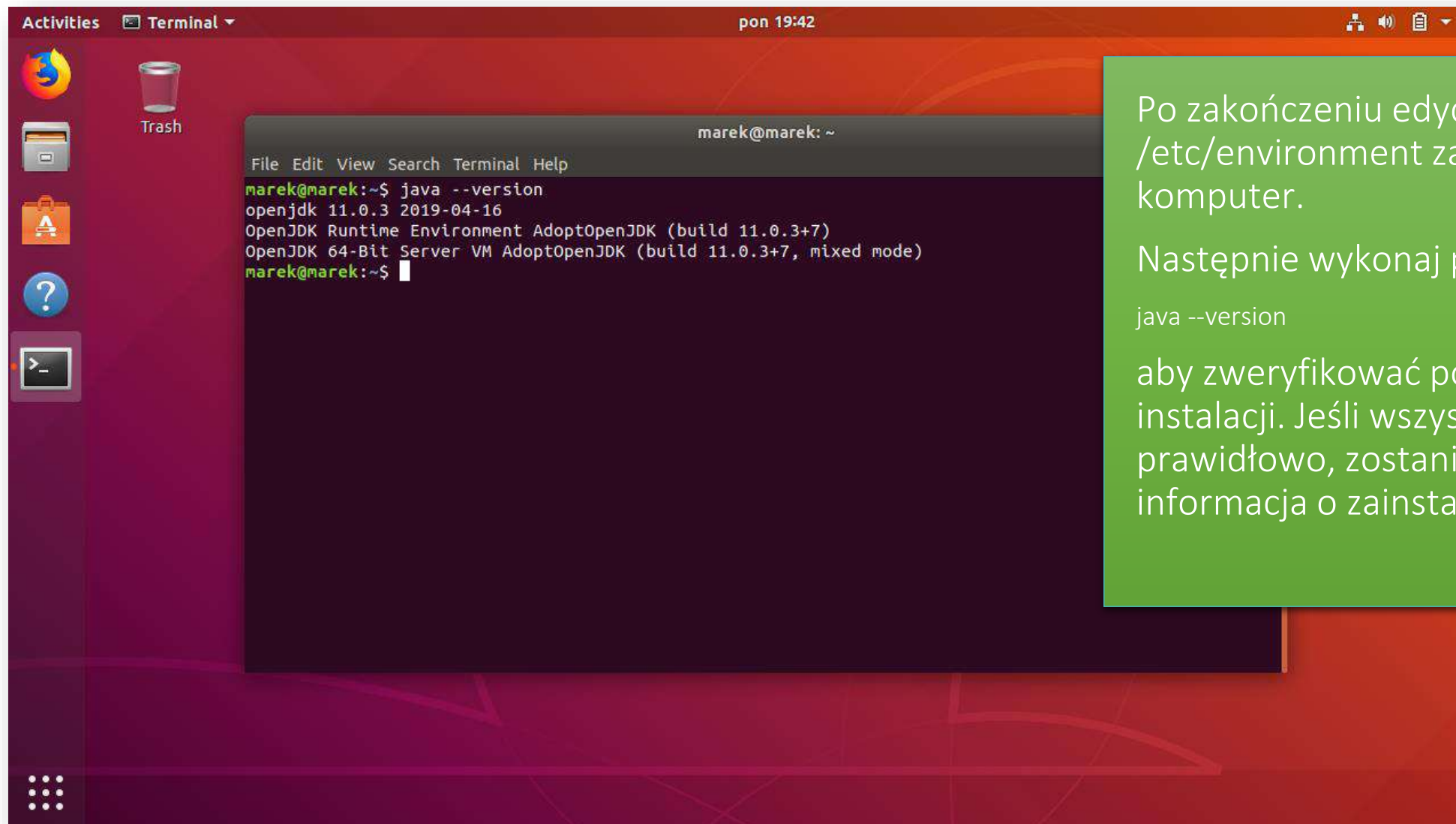


```
marek@marek: ~  
File Edit View Search Terminal Help  
GNU nano 2.9.3 /etc/environment  
  
PATH="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/opt/jdk-11.0.3+7/bin"  
JAVA_HOME=/opt/jdk-11.0.3+7  
  
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos   M-U Undo  
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line  M-E Redo
```

Kolejnym krokiem będzie zdefiniowanie zmiennej środowiskowej JAVA_HOME. W nowej linii dodaj wpis

JAVA_HOME=<<ścieżka>>

<<ścieżka>> zastąp właściwą ścieżką do pakietu JDK



The screenshot shows a Linux desktop environment with a terminal window open. The terminal title bar reads 'marek@marek: ~'. The terminal output is as follows:

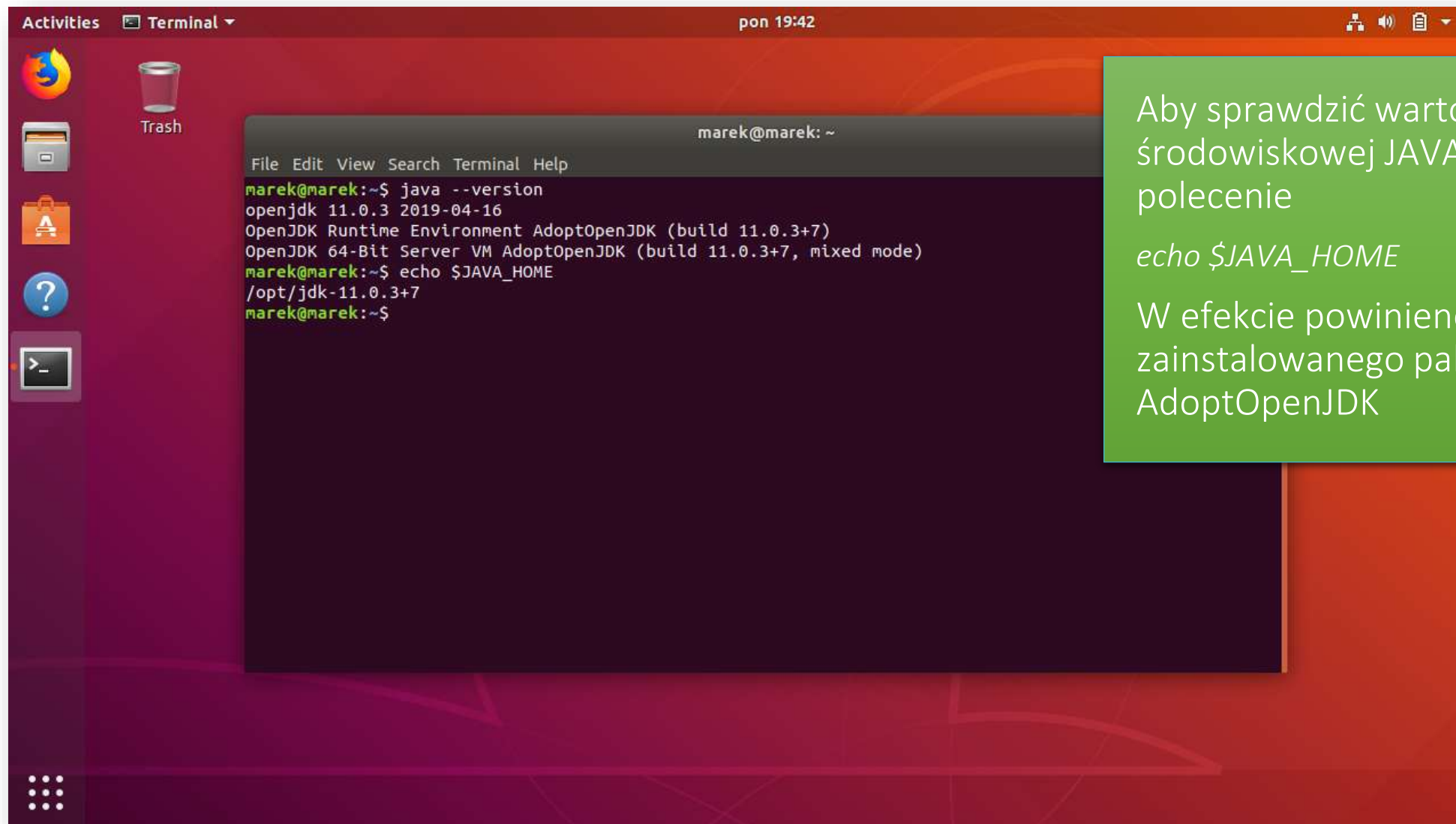
```
File Edit View Search Terminal Help
marek@marek:~$ java --version
openjdk 11.0.3 2019-04-16
OpenJDK Runtime Environment AdoptOpenJDK (build 11.0.3+7)
OpenJDK 64-Bit Server VM AdoptOpenJDK (build 11.0.3+7, mixed mode)
marek@marek:~$
```

Po zakończeniu edycji pliku `/etc/environment` zapisz go i zrestartuj komputer.

Następnie wykonaj polecenie

```
java --version
```

aby zweryfikować poprawność instalacji. Jeśli wszystko przebiegło prawidłowo, zostanie wyświetlona informacja o zainstalowanej wersji Javy



The screenshot shows a terminal window titled 'Terminal' with a timestamp of 'pon 19:42'. The user 'marek@marek' is in the home directory. The terminal output shows the following commands and results:

```
marek@marek:~$ java --version
openjdk 11.0.3 2019-04-16
OpenJDK Runtime Environment AdoptOpenJDK (build 11.0.3+7)
OpenJDK 64-Bit Server VM AdoptOpenJDK (build 11.0.3+7, mixed mode)
marek@marek:~$ echo $JAVA_HOME
/opt/jdk-11.0.3+7
marek@marek:~$
```

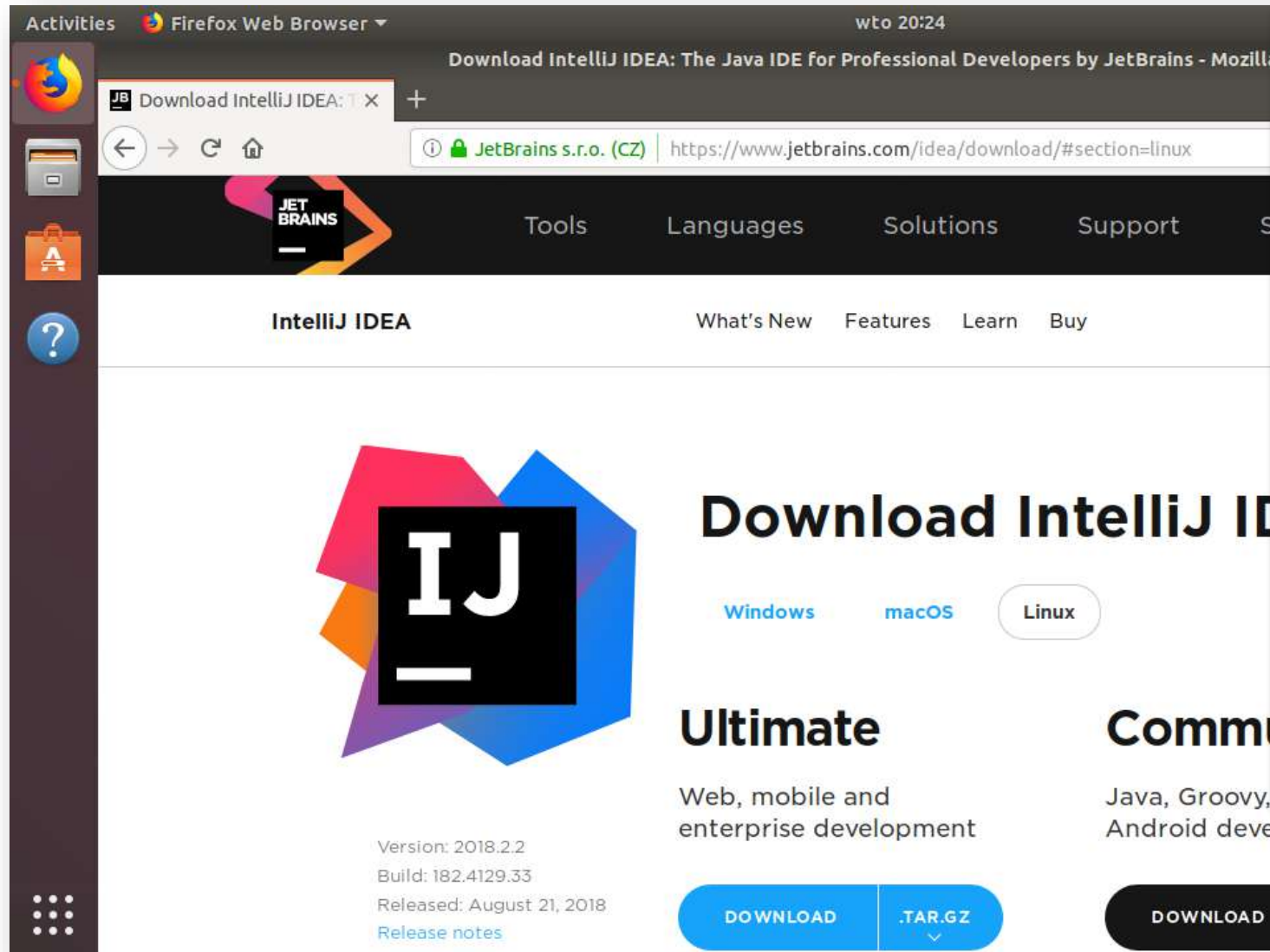
Aby sprawdzić wartość zmiennej środowiskowej `JAVA_HOME` wykonaj polecenie

```
echo $JAVA_HOME
```

W efekcie powinieneś ujrzeć ścieżkę do zainstalowanego pakietu AdoptOpenJDK

IntelliJ IDEA





1. Uruchom przeglądarkę internetową
2. Przejdź na stronę www.jetbrains.com/idea i kliknij przycisk Download
3. Na kolejnym ekranie ponownie kliknij przycisk *Download* przy wybranej wersji IntelliJ IDEA (wersja *Community* jest wystarczająca do nauki języka Java)
4. Pobieranie pliku powinno rozpocząć się automatycznie

Activities Firefox Web Browser wto 20:24

Thank you for downloading IntelliJ IDEA! - Mozilla Firefox

Thank you for download: X

JetBrains s.r.o. (CZ) https://www.jetbrains.com/idea/download/download-thanks.html

Tools Languages Solutions Support

IntelliJ IDEA

Thank you for downloading IntelliJ IDEA!

Your download should be verified using the [link](#).

Download and verify the file [SHA-256 checksum](#).

Getting Started

- ☐ Send me helpful tips & tricks during evaluation
- ☐ Tell me about new product features as they come out

New to IntelliJ IDEA?

In our [Discover IntelliJ IDEA](#) guide you'll find information about the most

Opening idealC-2018.2.2.tar.gz

You have chosen to open:

- ☒ idealC-2018.2.2.tar.gz
which is: Gzip archive (497 MB)
from: https://download-cf.jetbrains.com

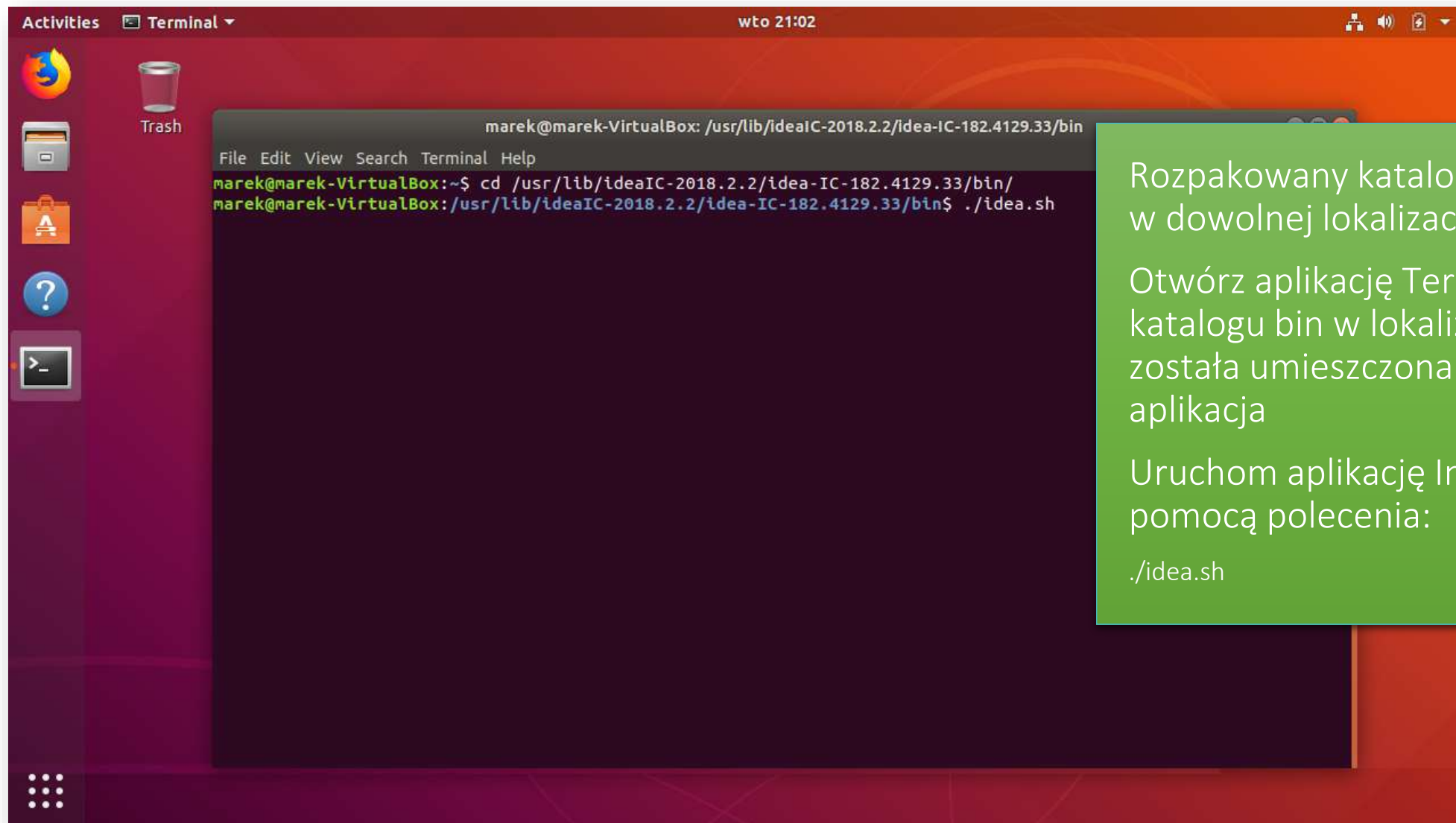
What should Firefox do with this file?

- ☐ Open with Archive Manager (default)
- ☒ Save File
- ☐ Do this automatically

Cancel OK

Zaznacz opcję Save File aby zapisać pobierany plik na dysku

IntelliJ IDEA



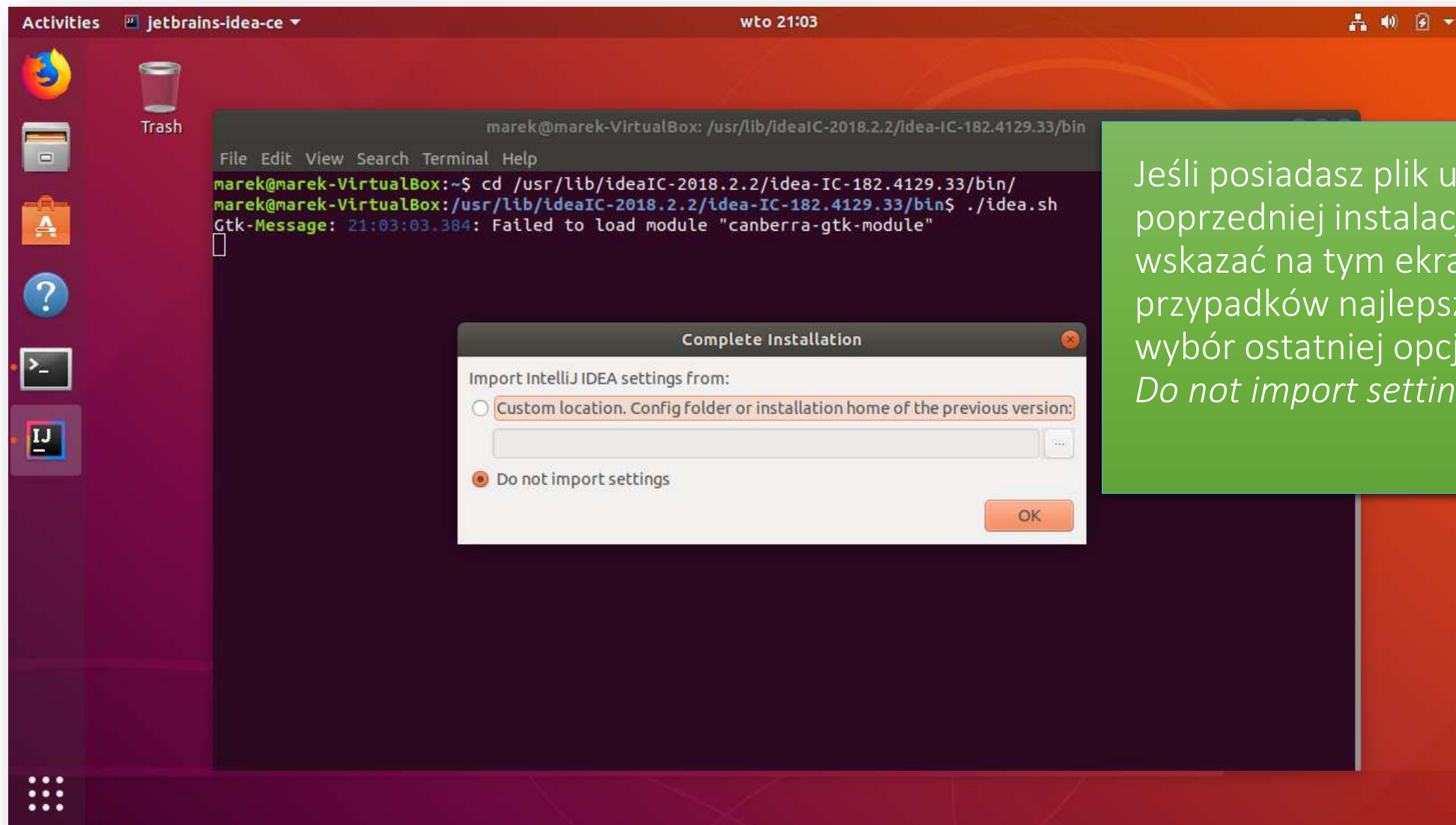
Rozpakowany katalog możesz umieścić w dowolnej lokalizacji.

Otwórz aplikację Terminal, przejdź do katalogu bin w lokalizacji w której została umieszczona rozpakowana aplikacja

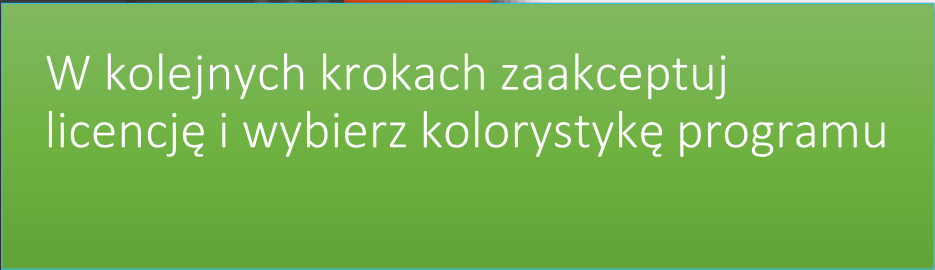
Uruchom aplikację IntelliJ IDEA za pomocą polecenia:

```
./idea.sh
```

IntelliJ IDEA



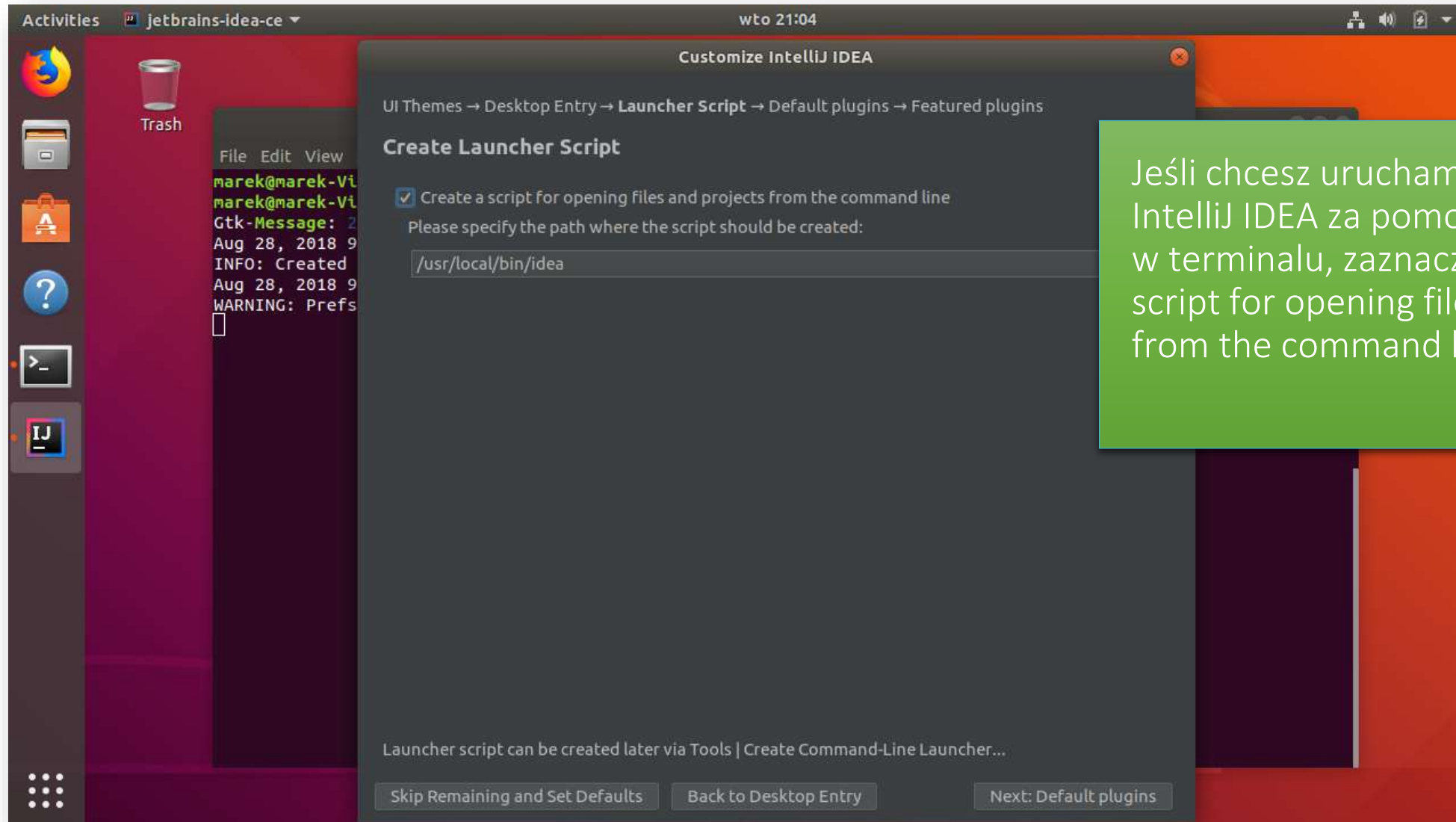
Jeśli posiadasz plik ustawień z poprzedniej instalacji, możesz go wskazać na tym ekranie. W większości przypadków najlepszym wyborem jest wybór ostatniej opcji:
Do not import settings





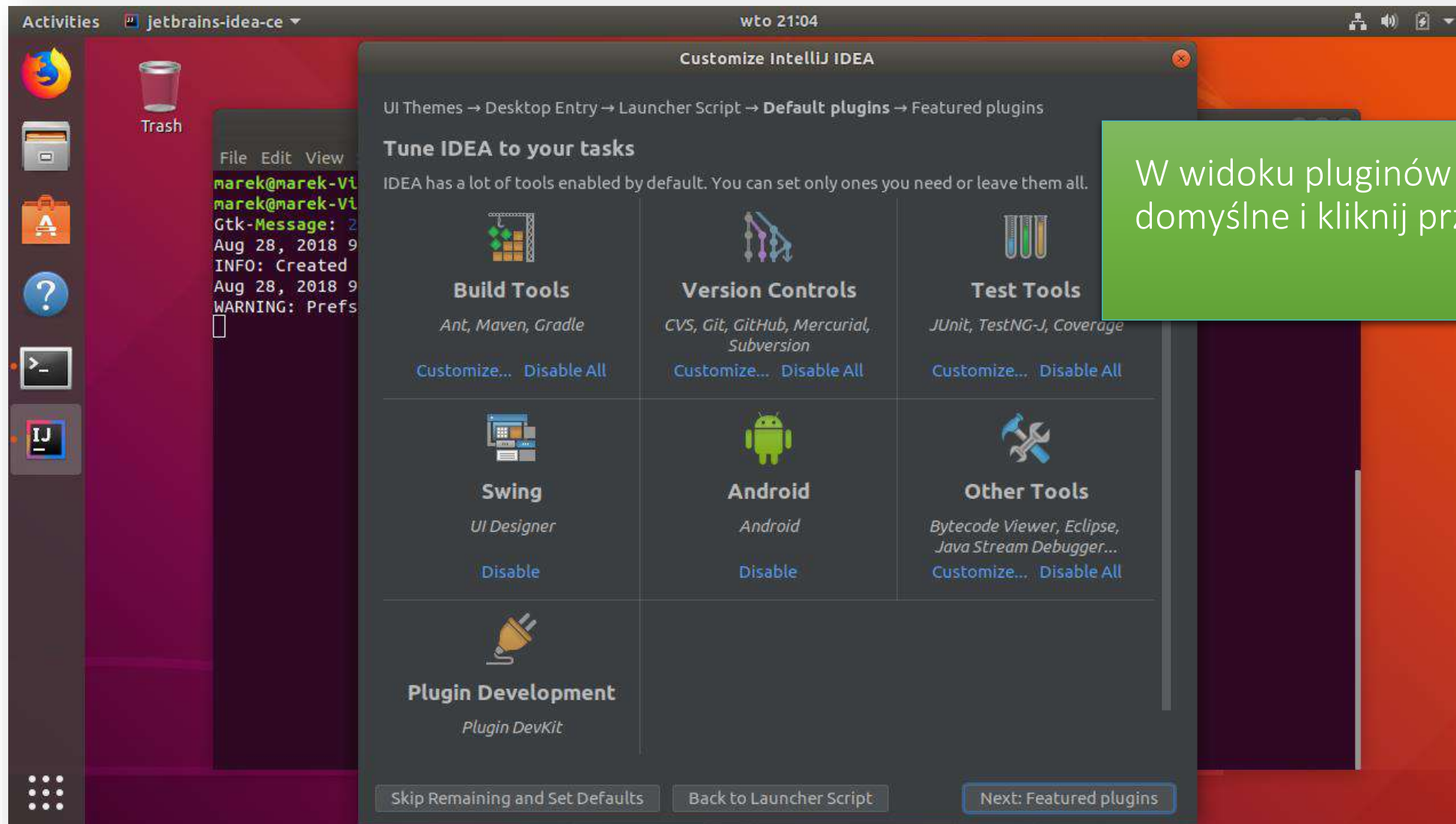
Jeśli chcesz umieścić skrót do aplikacji na widoku zainstalowanych programów, zaznacz opcję Create a desktop entry for integration with system application menu

IntelliJ IDEA



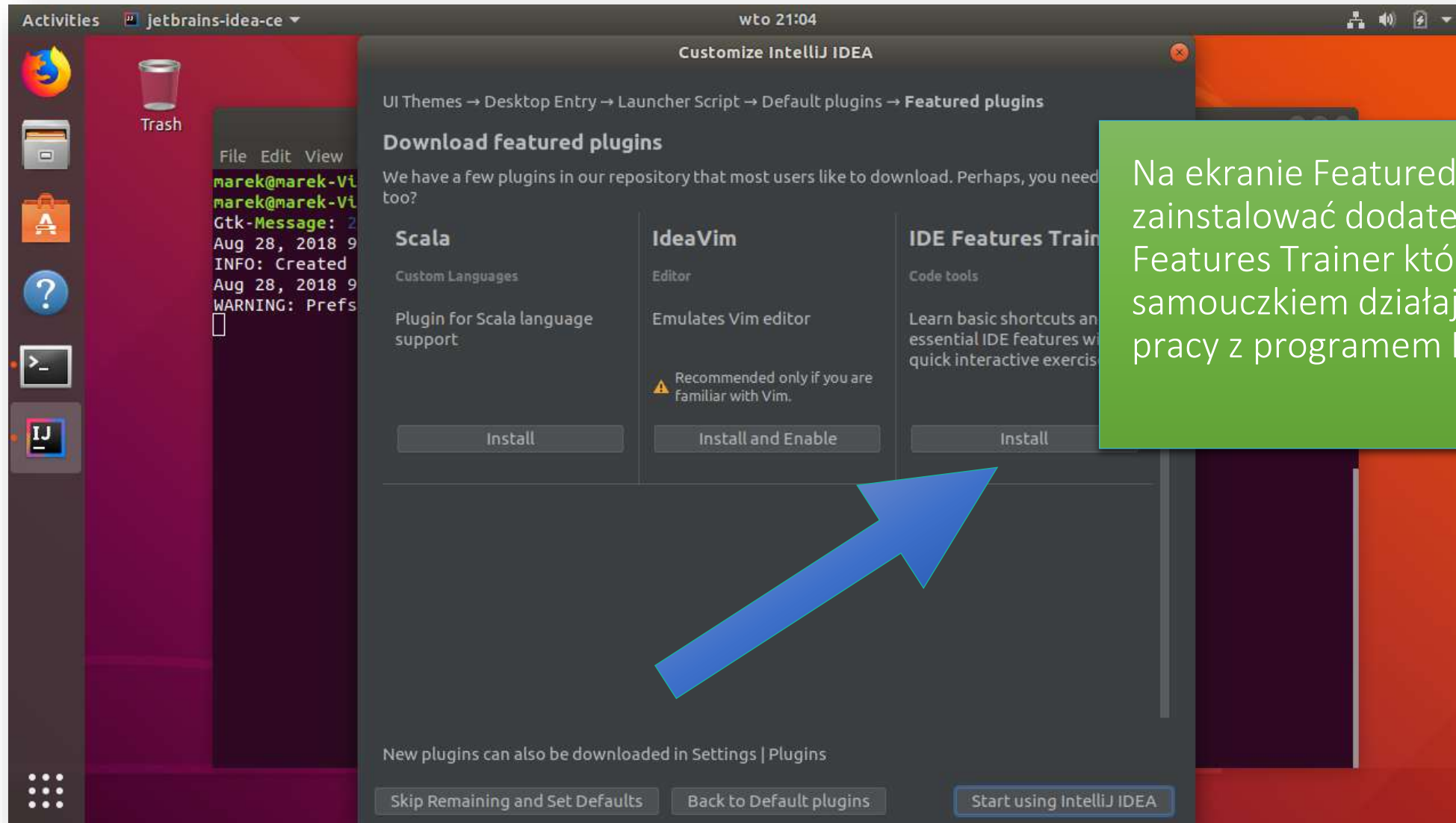
Jeśli chcesz uruchamiać program IntelliJ IDEA za pomocą polecenia idea w terminalu, zaznacz opcję Create a script for opening files and projects from the command line

IntelliJ IDEA



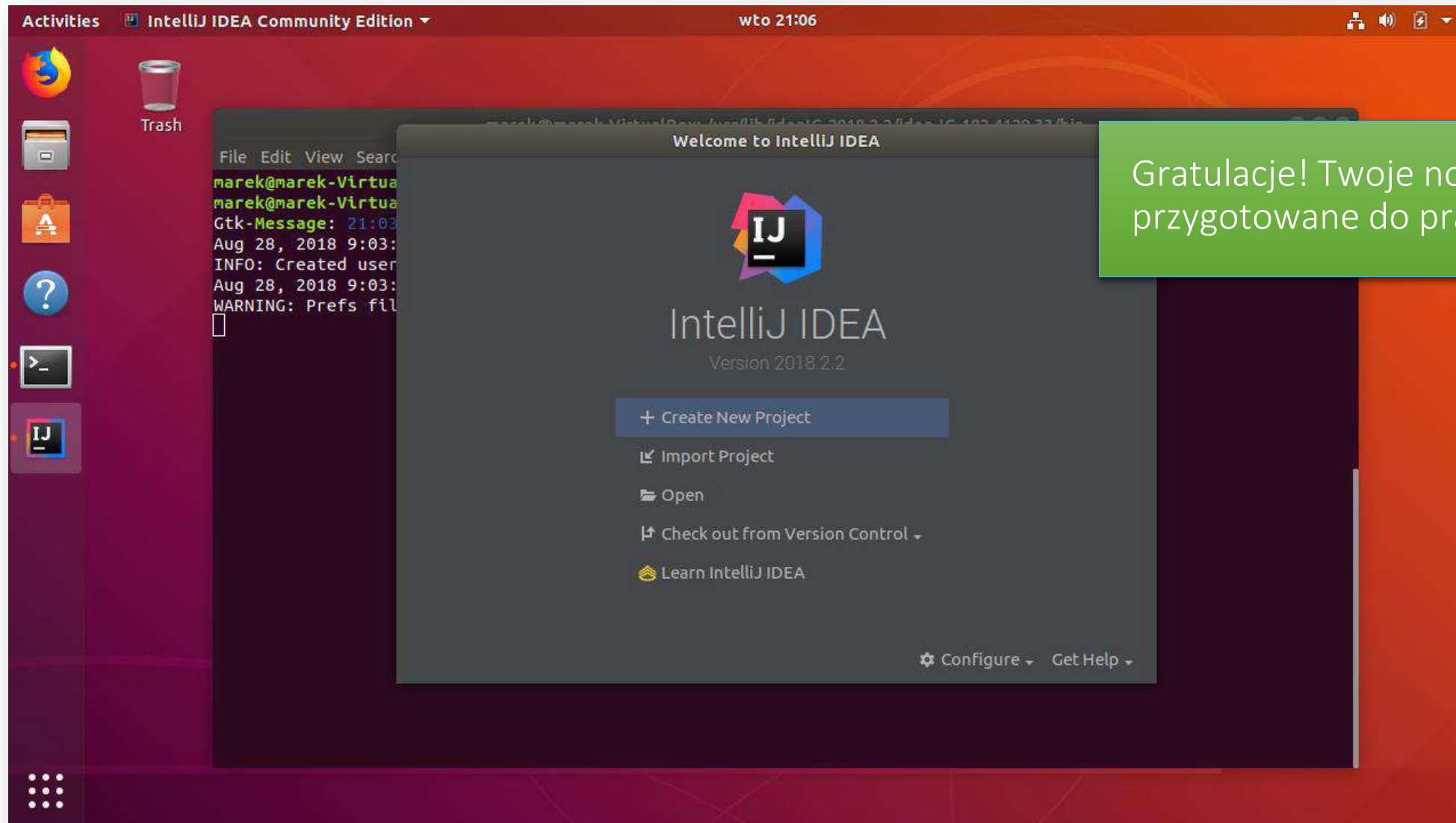
W widoku pluginów pozostaw wartości domyślne i kliknij przycisk Next

IntelliJ IDEA



Na ekranie Featured plugins możesz zainstalować dodatek o nazwie IDE Features Trainer który jest samouczkiem działającym w czasie pracy z programem IntelliJ IDEA

IntelliJ IDEA



Gratulacje! Twoje nowe IDE zostało przygotowane do pracy!

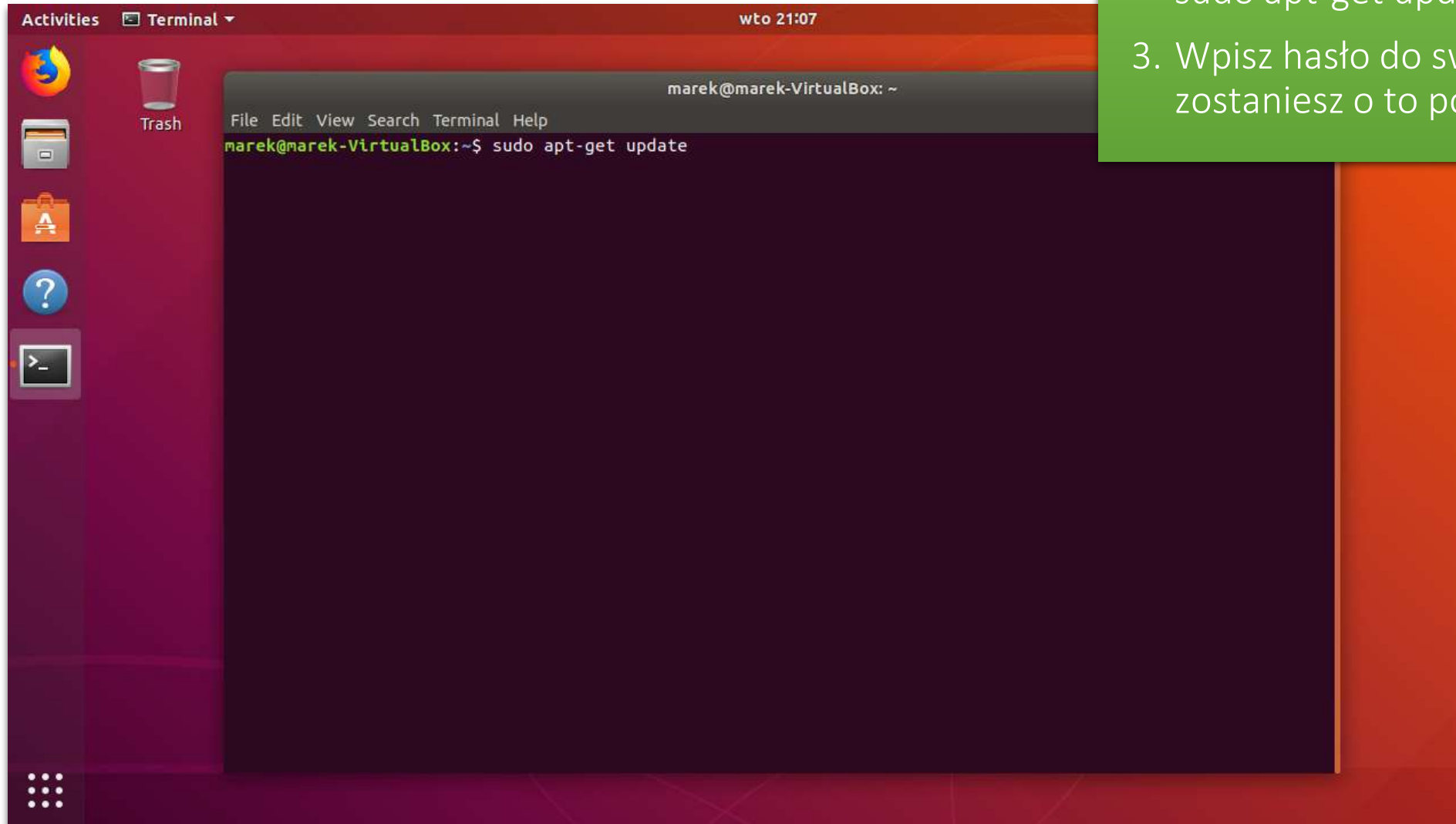


Jeśli zaznaczyłeś opcję utworzenia ikony na pulpicie, znajdziesz ją po kliknięciu przycisku Show Applications w prawym dolnym rogu ekranu

GIT

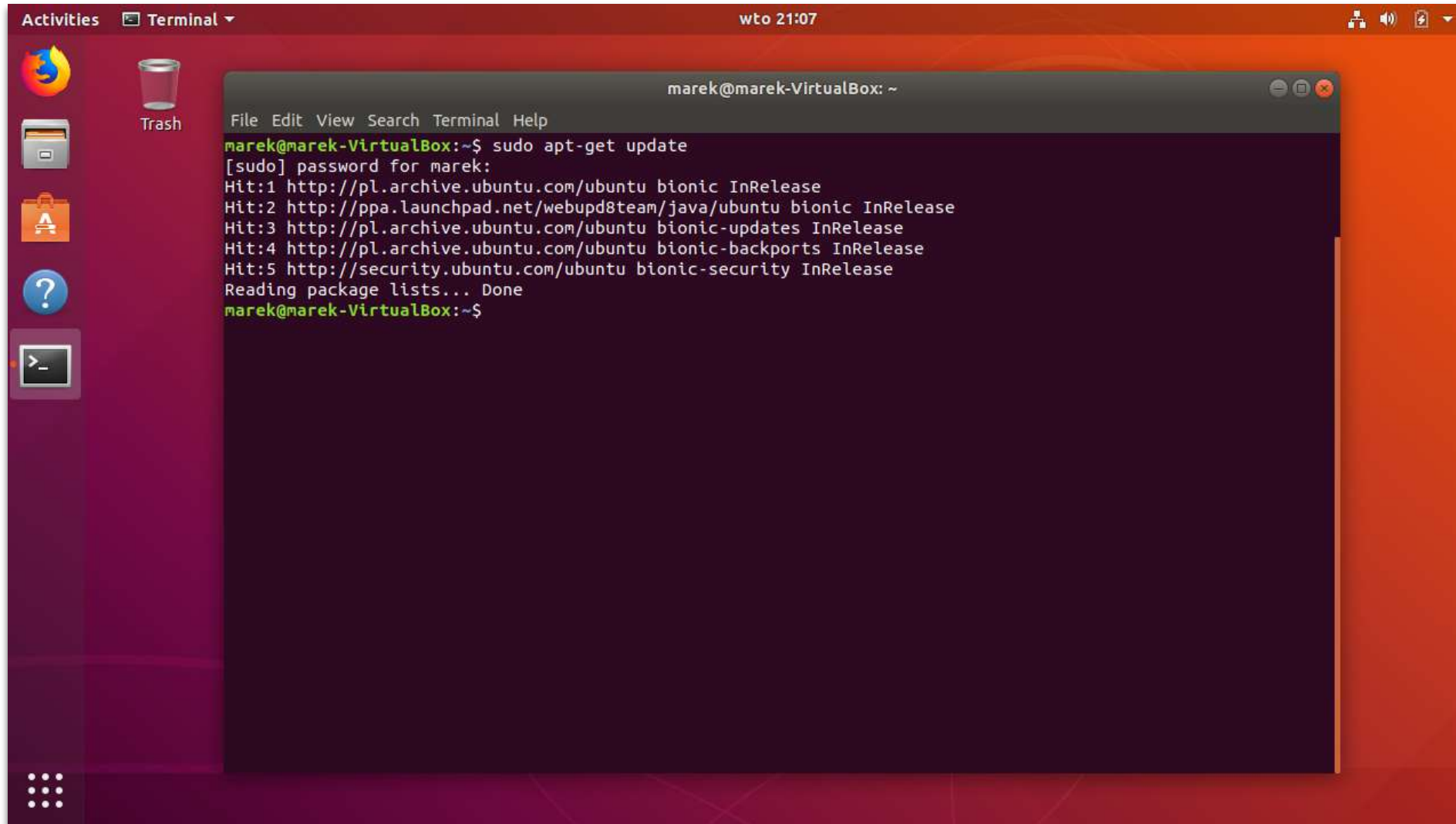


1. Uruchom okno terminala
2. Wpisz komendę
`sudo apt-get update`
3. Wpisz hasło do swojego konta jeśli zostaniesz o to poproszony



git

Zaczekaj chwilę na zakończenie
odświeżania repozytoriów



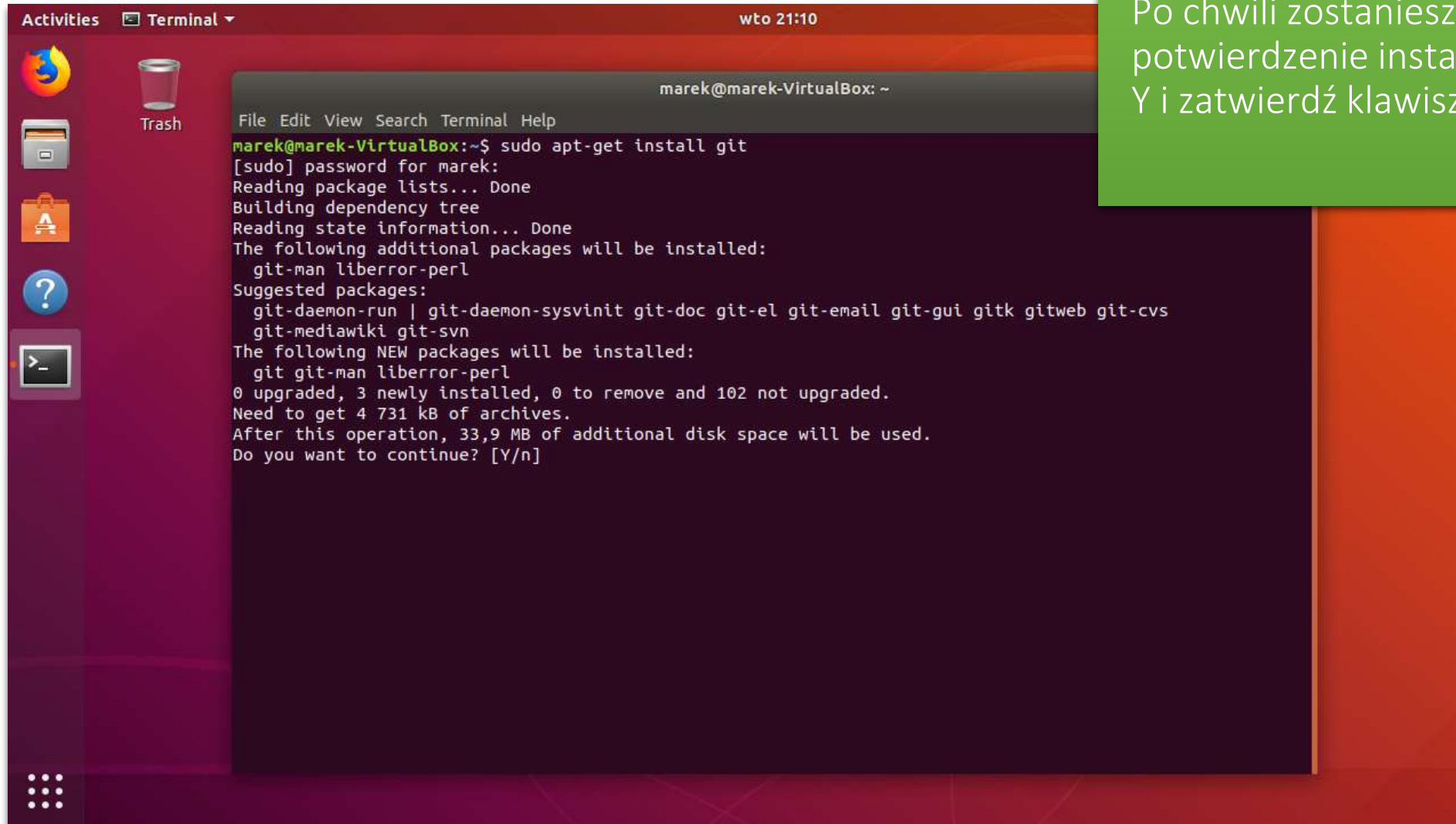
The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is 'marek@marek-VirtualBox: ~'. The terminal output shows the command 'sudo apt-get update' being executed, followed by a password prompt and five 'Hit' messages indicating updates from various sources. The output ends with 'Reading package lists... Done' and the prompt 'marek@marek-VirtualBox: ~\$'.

```
marek@marek-VirtualBox: ~$ sudo apt-get update
[sudo] password for marek:
Hit:1 http://pl.archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease
Hit:3 http://pl.archive.ubuntu.com/ubuntu bionic-updates InRelease
Hit:4 http://pl.archive.ubuntu.com/ubuntu bionic-backports InRelease
Hit:5 http://security.ubuntu.com/ubuntu bionic-security InRelease
Reading package lists... Done
marek@marek-VirtualBox: ~$
```


Wpisz komendę

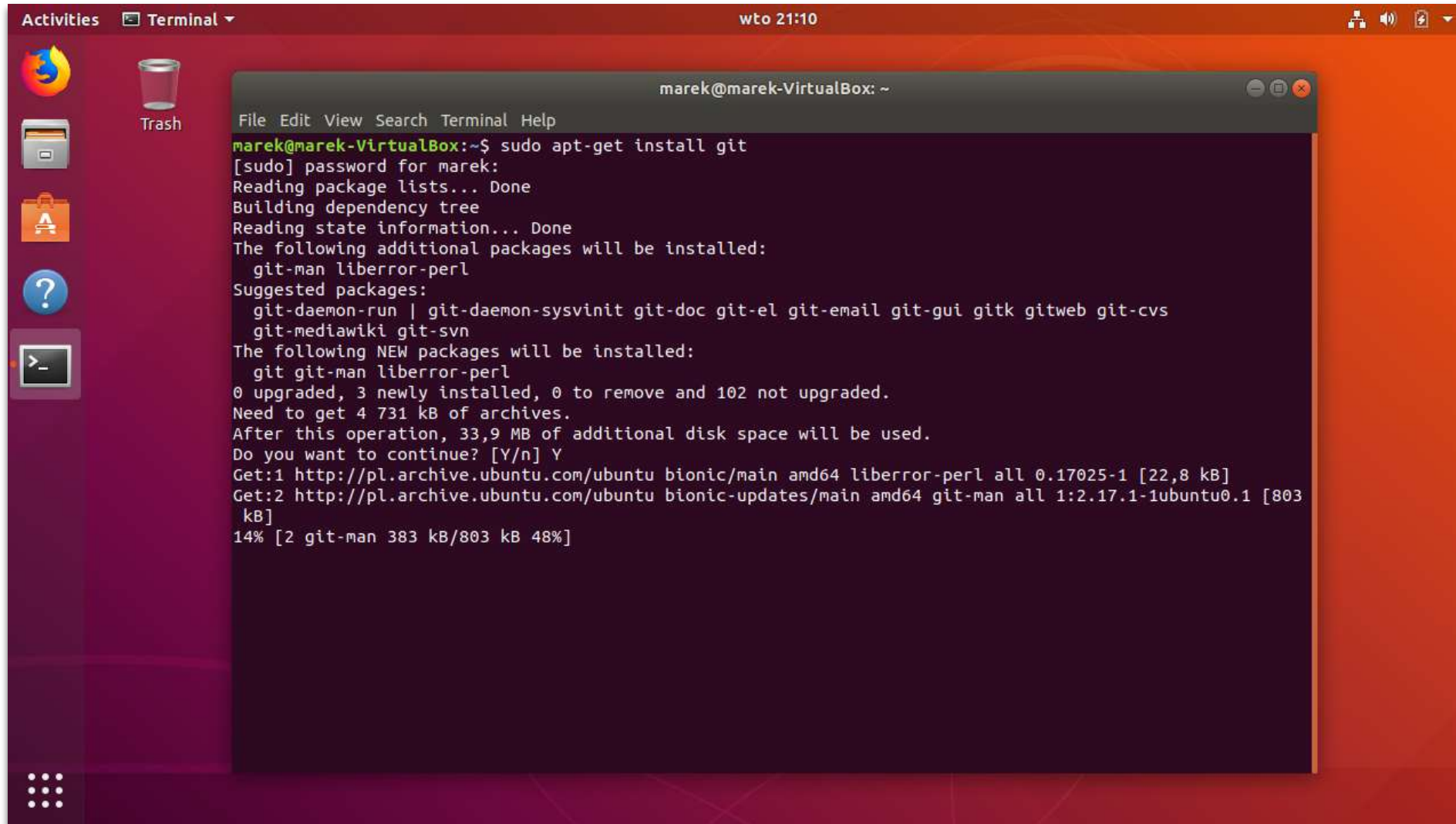
`sudo apt-get install git`

Po chwili zostaniesz poproszony o potwierdzenie instalacji. Wciśnij przycisk Y i zatwierdź klawiszem Enter



The screenshot shows a terminal window titled "Terminal" with a timestamp of "wto 21:10". The user is logged in as "marek" on a machine named "marek-VirtualBox". The terminal output shows the command `sudo apt-get install git` being executed. The system prompts for the password, then displays the progress of installing git, including reading package lists, building a dependency tree, and showing the additional packages to be installed (git-man, liberror-perl). It also lists suggested packages (git-daemon-run, git-daemon-sysvinit, git-doc, git-el, git-email, git-gui, gitk, gitweb, git-cvs, git-mediawiki, git-svn) and the new packages to be installed (git, git-man, liberror-perl). The system indicates that 0 packages will be upgraded, 3 will be newly installed, and 102 will not be upgraded. It also shows the disk space requirements: 4,731 kB of archives and 33.9 MB of additional disk space. Finally, it asks for confirmation to continue with the installation.

```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ sudo apt-get install git  
[sudo] password for marek:  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  git-man liberror-perl  
Suggested packages:  
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk gitweb git-cvs  
  git-mediawiki git-svn  
The following NEW packages will be installed:  
  git git-man liberror-perl  
0 upgraded, 3 newly installed, 0 to remove and 102 not upgraded.  
Need to get 4 731 kB of archives.  
After this operation, 33,9 MB of additional disk space will be used.  
Do you want to continue? [Y/n]
```



The screenshot shows a terminal window titled "marek@marek-VirtualBox: ~" with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal output shows the command `sudo apt-get install git` being executed. The system prompts for a password, then reads package lists and builds a dependency tree. It lists additional packages to be installed (`git-man` and `liberror-perl`) and suggested packages (`git-daemon-run`, `git-daemon-sysvinit`, `git-doc`, `git-el`, `git-email`, `git-gui`, `gitk`, `gitweb`, `git-cvs`, `git-mediawiki`, `git-svn`). It then lists the new packages to be installed (`git`, `git-man`, `liberror-perl`) and shows the disk space requirements (4,731 kB of archives, 33.9 MB of additional disk space). The user confirms the installation with 'Y'. The terminal shows the progress of downloading the packages from the Ubuntu repositories.

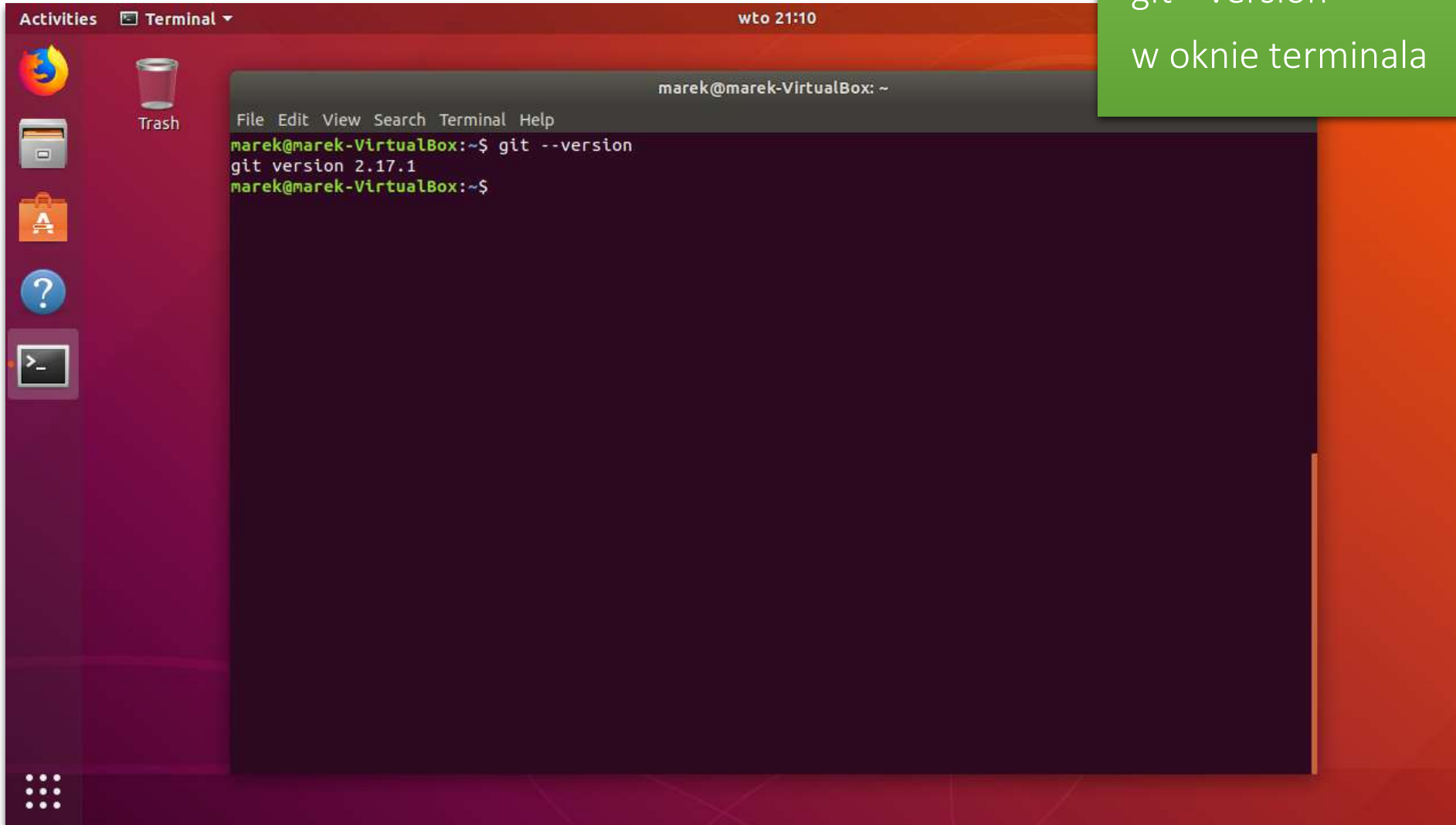
```
marek@marek-VirtualBox: ~$ sudo apt-get install git
[sudo] password for marek:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk gitweb git-cvs
  git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 102 not upgraded.
Need to get 4 731 kB of archives.
After this operation, 33,9 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://pl.archive.ubuntu.com/ubuntu bionic/main amd64 liberror-perl all 0.17025-1 [22,8 kB]
Get:2 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git-man all 1:2.17.1-1ubuntu0.1 [803
  kB]
14% [2 git-man 383 kB/803 kB 48%]
```

git

Możesz zweryfikować poprawność instalacji wpisując komendę

`git --version`

w oknie terminala



The screenshot shows a terminal window titled "Terminal" with a subtitle "wto 21:10". The terminal prompt is "marek@marek-VirtualBox: ~". The command "git --version" has been entered and executed, resulting in the output "git version 2.17.1". The terminal window is part of a desktop environment with a sidebar containing icons for Firefox, Trash, and other applications.

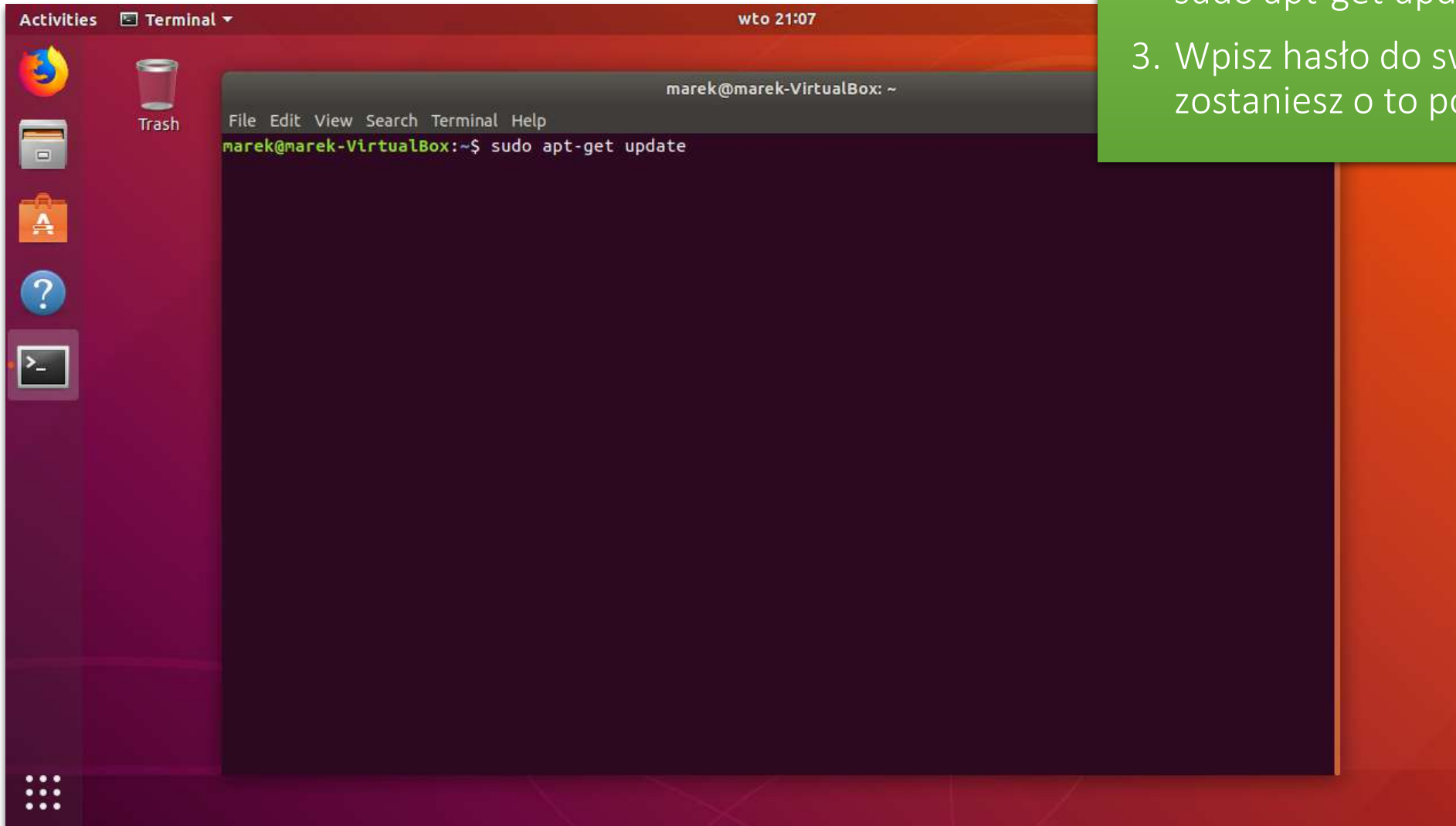
```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ git --version  
git version 2.17.1  
marek@marek-VirtualBox:~$
```

MySQL



MySQL

1. Uruchom okno terminala
2. Wpisz komendę
`sudo apt-get update`
3. Wpisz hasło do swojego konta jeśli zostaniesz o to poproszony

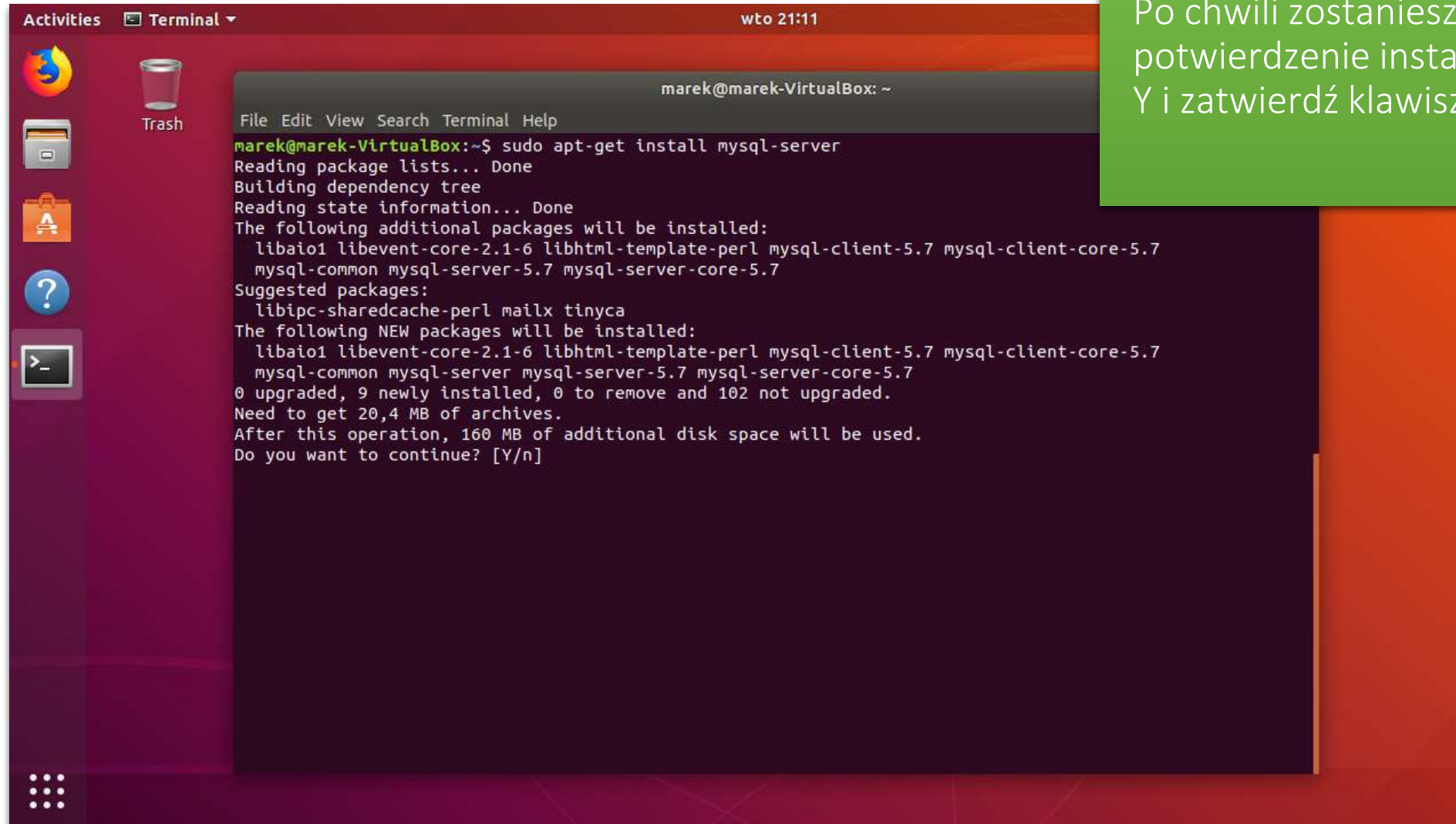


MySQL

Wpisz komendę

`sudo apt-get install mysql-server`

Po chwili zostaniesz poproszony o potwierdzenie instalacji. Wciśnij przycisk Y i zatwierdź klawiszem Enter



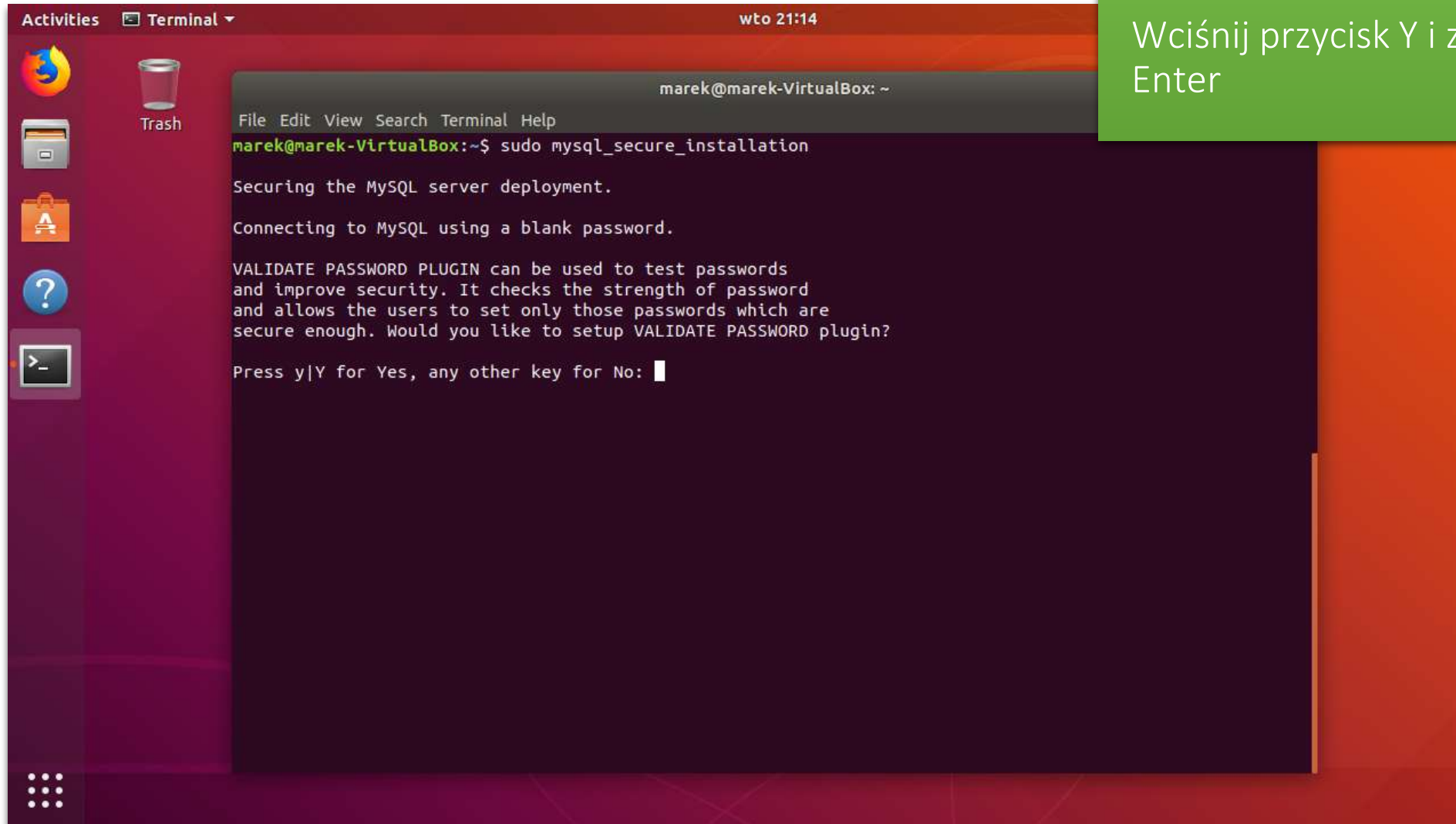
The screenshot shows a terminal window titled "Terminal" with a timestamp of "wto 21:11". The user is logged in as "marek" on a machine named "marek-VirtualBox". The terminal displays the output of the command `sudo apt-get install mysql-server`. The output shows the package lists being read, the dependency tree being built, and the state information being read. It then lists the additional packages to be installed: `libaio1 libevent-core-2.1-6 libhtml-template-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common mysql-server-5.7 mysql-server-core-5.7`. It also lists the suggested packages: `libipc-sharedcache-perl mailx tinyc`. The terminal then asks for confirmation to continue with the installation, displaying `Do you want to continue? [Y/n]`.

```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ sudo apt-get install mysql-server  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  libaio1 libevent-core-2.1-6 libhtml-template-perl mysql-client-5.7 mysql-client-core-5.7  
  mysql-common mysql-server-5.7 mysql-server-core-5.7  
Suggested packages:  
  libipc-sharedcache-perl mailx tinyc  
The following NEW packages will be installed:  
  libaio1 libevent-core-2.1-6 libhtml-template-perl mysql-client-5.7 mysql-client-core-5.7  
  mysql-common mysql-server mysql-server-5.7 mysql-server-core-5.7  
0 upgraded, 9 newly installed, 0 to remove and 102 not upgraded.  
Need to get 20,4 MB of archives.  
After this operation, 160 MB of additional disk space will be used.  
Do you want to continue? [Y/n]
```


MySQL

Po zakończeniu instalacji wykonaj
komendę
`sudo mysql_secure_installation`

Wciśnij przycisk Y i zatwierdź klawiszem
Enter



The screenshot shows a terminal window titled "Terminal" with a red header bar. The prompt is "marek@marek-VirtualBox: ~". The command "sudo mysql_secure_installation" has been entered. The output shows the MySQL security configuration process, including a message about the VALIDATE PASSWORD PLUGIN and a prompt to press 'y|Y' for Yes or any other key for No. The terminal window is overlaid on a desktop environment with a red background and a sidebar containing icons for Firefox, Trash, and other applications.

```
File Edit View Search Terminal Help
marek@marek-VirtualBox:~$ sudo mysql_secure_installation

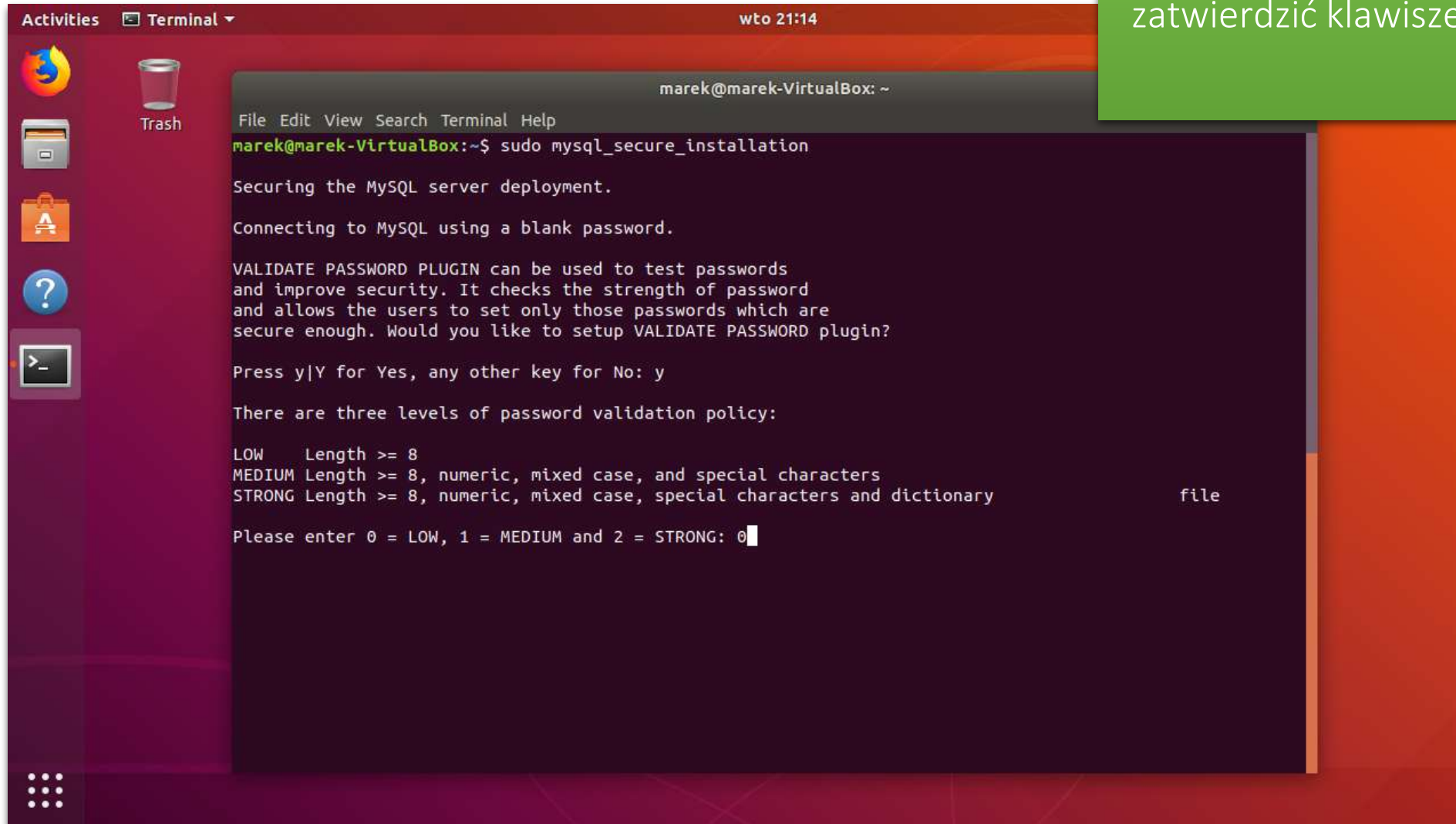
Securing the MySQL server deployment.

Connecting to MySQL using a blank password.

VALIDATE PASSWORD PLUGIN can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD plugin?

Press y|Y for Yes, any other key for No: 
```

Do podstawowych deweloperskich zadań możesz ustawić najłagodniejszą politykę dla haseł wskazując opcję 0 i zatwierdzić klawiszem Enter

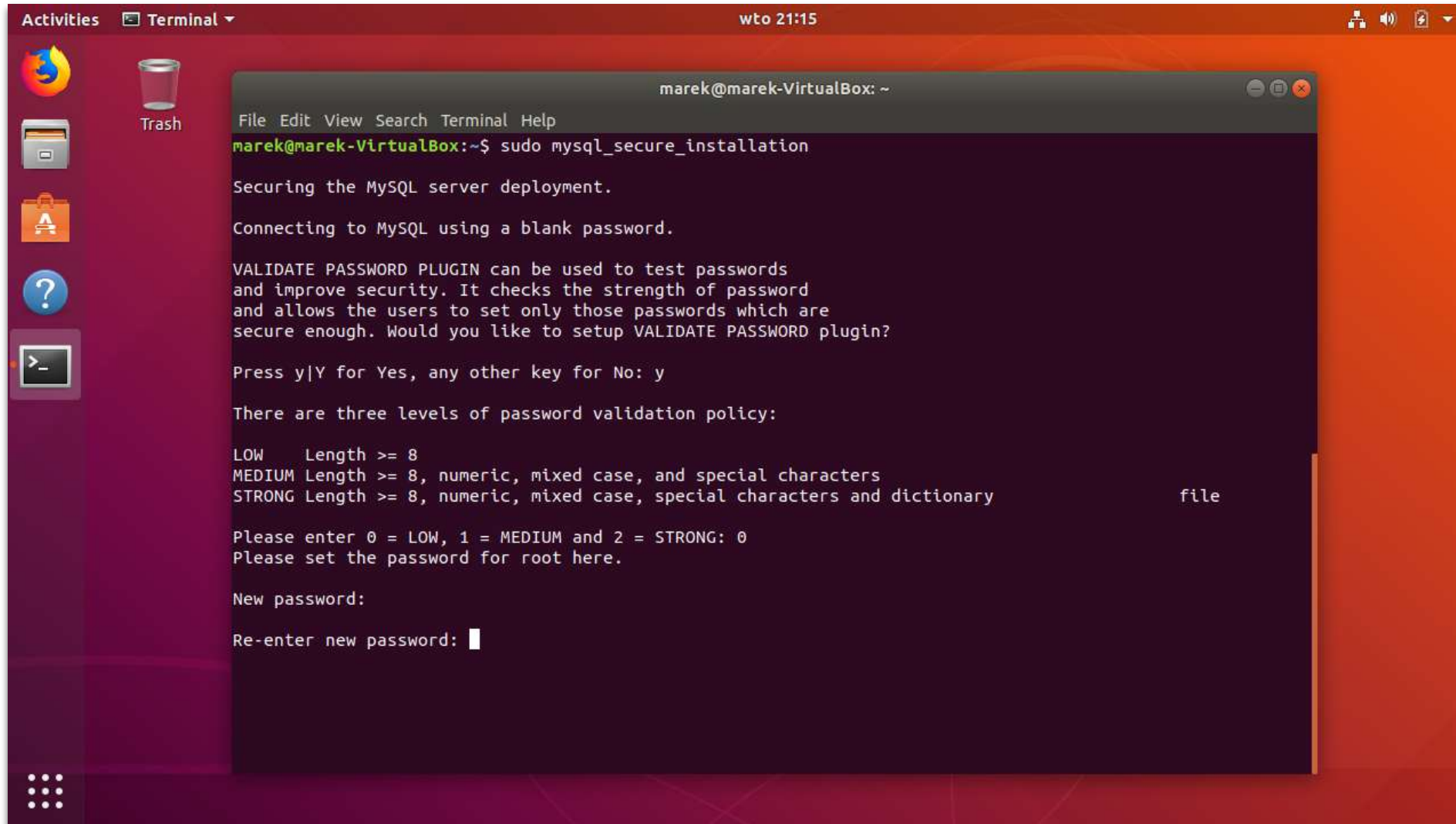


The screenshot shows a terminal window titled "Terminal" with a red header bar. The terminal output is as follows:

```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ sudo mysql_secure_installation  
  
Securing the MySQL server deployment.  
  
Connecting to MySQL using a blank password.  
  
VALIDATE PASSWORD PLUGIN can be used to test passwords  
and improve security. It checks the strength of password  
and allows the users to set only those passwords which are  
secure enough. Would you like to setup VALIDATE PASSWORD plugin?  
  
Press y|Y for Yes, any other key for No: y  
  
There are three levels of password validation policy:  
  
LOW      Length >= 8  
MEDIUM  Length >= 8, numeric, mixed case, and special characters  
STRONG  Length >= 8, numeric, mixed case, special characters and dictionary  
  
Please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG: 0
```

The terminal window is part of a desktop environment with a sidebar on the left containing icons for Firefox, Trash, a file manager, a shopping bag, a question mark, and a terminal icon. The top of the terminal window shows the title bar with "Activities", "Terminal", and a clock showing "wto 21:14".

Podaj dwukrotnie hasło dla użytkownika root. Zapamiętaj je!!!



The screenshot shows a Linux desktop with a terminal window titled "marek@marek-VirtualBox: ~". The terminal output is as follows:

```
File Edit View Search Terminal Help
marek@marek-VirtualBox:~$ sudo mysql_secure_installation

Securing the MySQL server deployment.

Connecting to MySQL using a blank password.

VALIDATE PASSWORD PLUGIN can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD plugin?

Press y|Y for Yes, any other key for No: y

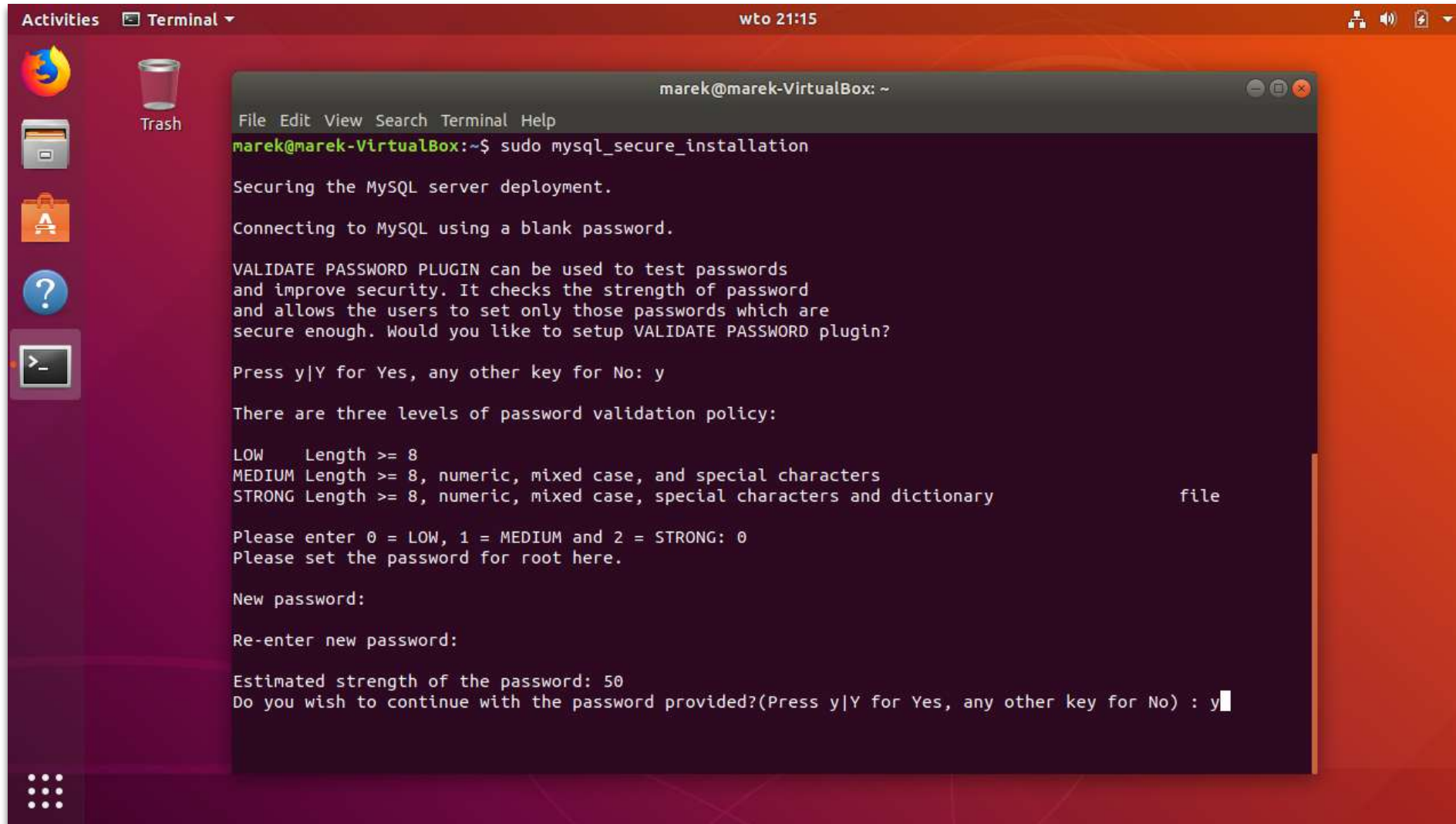
There are three levels of password validation policy:

LOW      Length >= 8
MEDIUM  Length >= 8, numeric, mixed case, and special characters
STRONG  Length >= 8, numeric, mixed case, special characters and dictionary

Please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG: 0
Please set the password for root here.

New password:
Re-enter new password: 
```

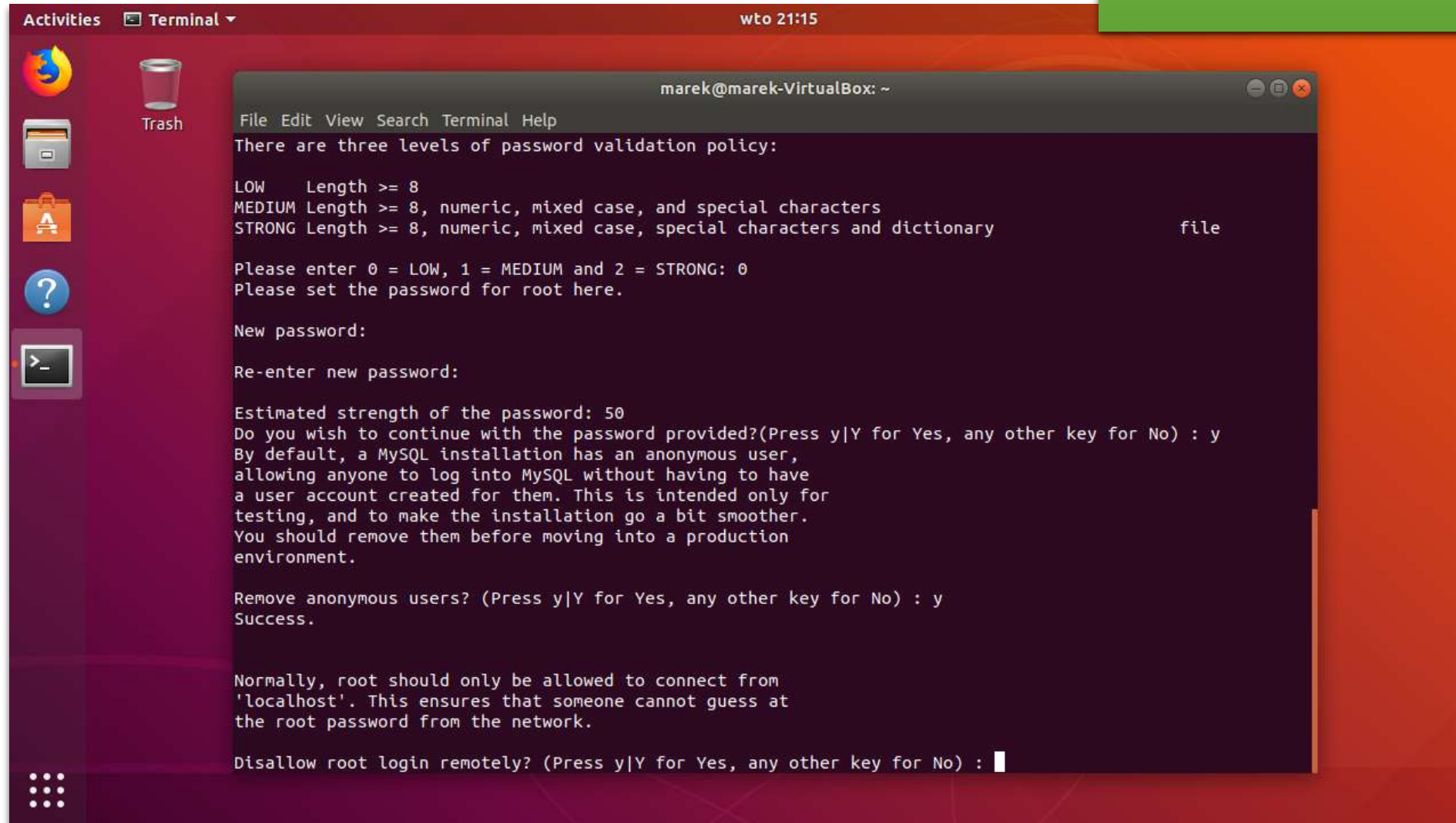
Zatwierdź hasło klawiszem Y i klawiszem Enter



The screenshot shows a terminal window titled "marek@marek-VirtualBox: ~" with a menu bar (File, Edit, View, Search, Terminal, Help). The user has executed the command `sudo mysql_secure_installation`. The terminal output shows the MySQL security configuration steps: securing the deployment, connecting with a blank password, and configuring the `VALIDATE PASSWORD PLUGIN`. It asks if the user wants to set up the plugin (answered 'y'), lists three password validation policies (LOW, MEDIUM, STRONG), asks for a selection (answered '0' for LOW), and prompts for a new password. It then shows the estimated strength of the password (50) and asks if the user wants to continue (answered 'y').

```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ sudo mysql_secure_installation  
  
Securing the MySQL server deployment.  
  
Connecting to MySQL using a blank password.  
  
VALIDATE PASSWORD PLUGIN can be used to test passwords  
and improve security. It checks the strength of password  
and allows the users to set only those passwords which are  
secure enough. Would you like to setup VALIDATE PASSWORD plugin?  
  
Press y|Y for Yes, any other key for No: y  
  
There are three levels of password validation policy:  
  
LOW      Length >= 8  
MEDIUM  Length >= 8, numeric, mixed case, and special characters  
STRONG  Length >= 8, numeric, mixed case, special characters and dictionary  
  
Please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG: 0  
Please set the password for root here.  
  
New password:  
  
Re-enter new password:  
  
Estimated strength of the password: 50  
Do you wish to continue with the password provided?(Press y|Y for Yes, any other key for No) : y
```

Możesz zablokować możliwość zdalnego logowania się użytkownikiem root



The screenshot shows a terminal window titled 'marek@marek-VirtualBox: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal output displays the MySQL installation password policy configuration. It lists three levels: LOW (length >= 8), MEDIUM (length >= 8, numeric, mixed case, and special characters), and STRONG (length >= 8, numeric, mixed case, special characters and dictionary). The user is prompted to enter a level (0 for LOW, 1 for MEDIUM, 2 for STRONG) and to set a password for the root user. The estimated strength of the password is 50. The user is then asked if they wish to continue with the provided password (y for Yes, any other key for No). The terminal shows the user pressing 'y'. A warning message follows, stating that by default, a MySQL installation has an anonymous user, allowing anyone to log into MySQL without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. The user is then asked to remove anonymous users (y for Yes, any other key for No). The terminal shows the user pressing 'y'. A success message is displayed. Finally, the user is asked to disallow root login remotely (y for Yes, any other key for No). The terminal shows the user pressing 'y'.

```
File Edit View Search Terminal Help
There are three levels of password validation policy:

LOW      Length >= 8
MEDIUM Length >= 8, numeric, mixed case, and special characters
STRONG Length >= 8, numeric, mixed case, special characters and dictionary

Please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG: 0
Please set the password for root here.

New password:

Re-enter new password:

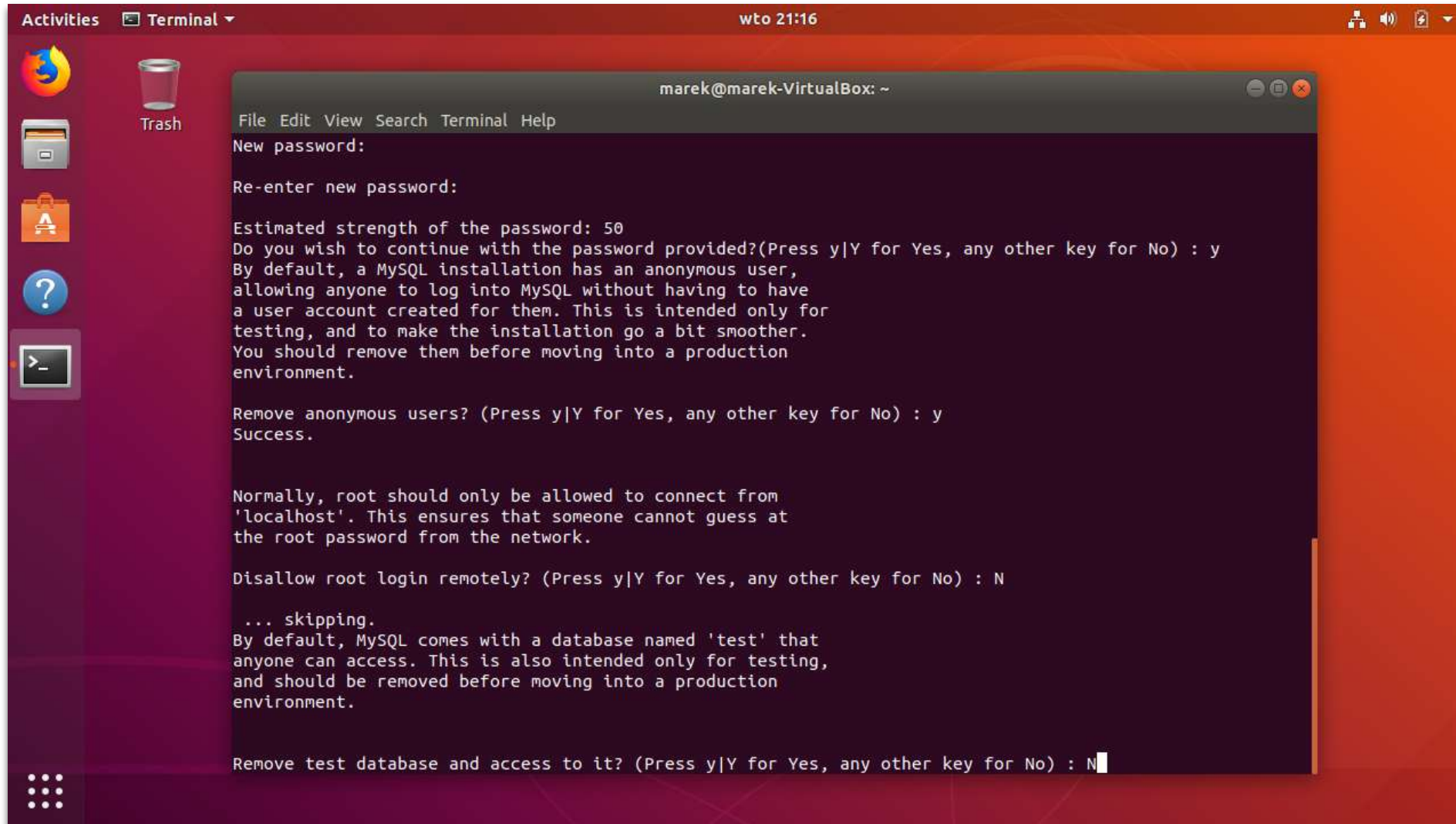
Estimated strength of the password: 50
Do you wish to continue with the password provided?(Press y|Y for Yes, any other key for No) : y
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.

Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : y
```


Na tym ekranie możesz usunąć testową bazę danych



The screenshot shows a terminal window titled 'marek@marek-VirtualBox: ~' with a menu bar containing 'File Edit View Search Terminal Help'. The terminal output shows the MySQL installation process. It prompts for a new password, which is confirmed. It then asks if the user wants to continue with the default anonymous user, which is confirmed with 'y'. It then asks if the user wants to remove anonymous users, which is confirmed with 'y'. It then asks if the user wants to disallow root login remotely, which is confirmed with 'N'. It then asks if the user wants to remove the test database and access to it, which is confirmed with 'N'.

```
File Edit View Search Terminal Help
New password:
Re-enter new password:

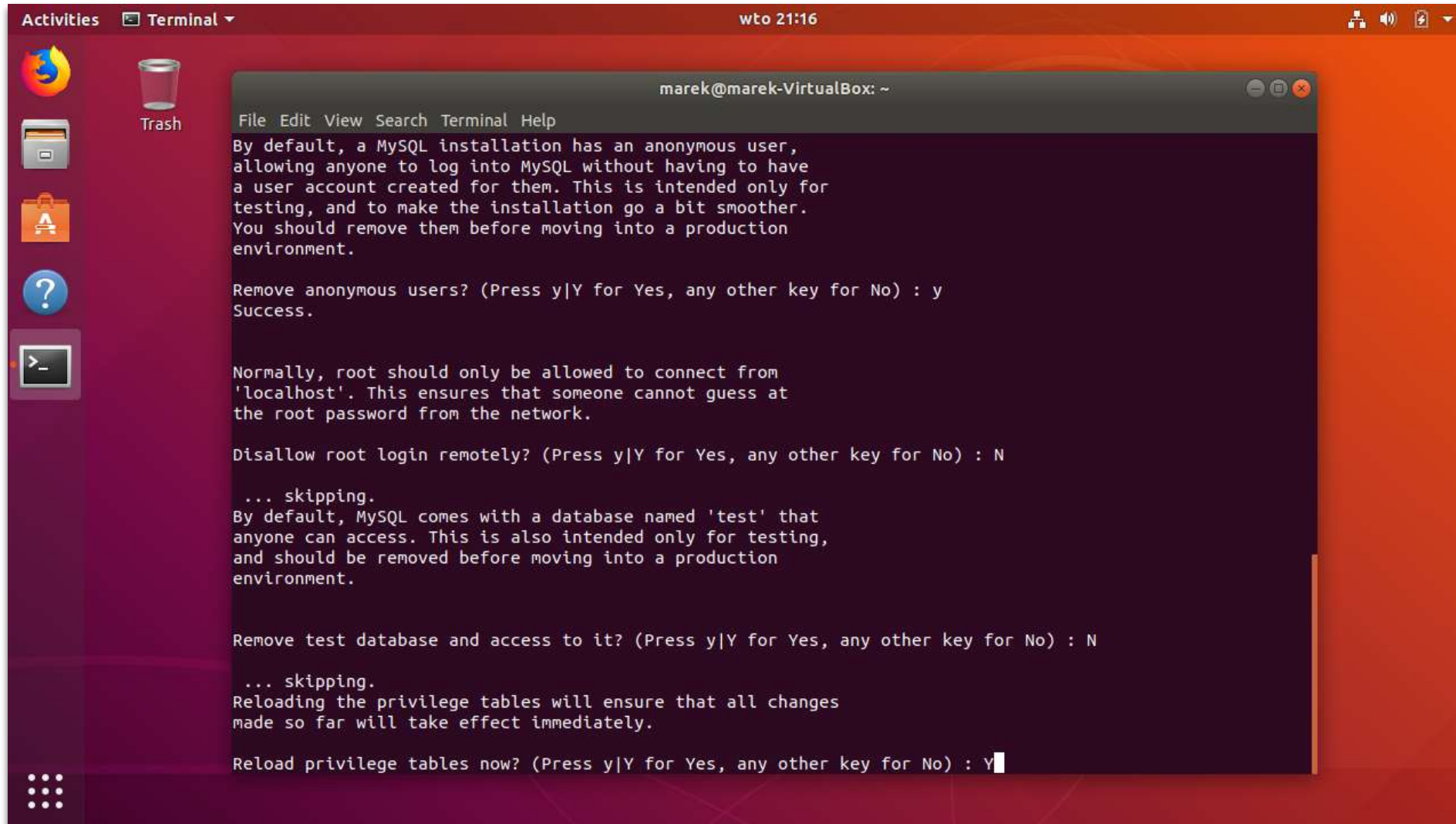
Estimated strength of the password: 50
Do you wish to continue with the password provided?(Press y|Y for Yes, any other key for No) : y
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.

Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : N
... skipping.
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.

Remove test database and access to it? (Press y|Y for Yes, any other key for No) : N
```



The screenshot shows a terminal window titled 'marek@marek-VirtualBox: ~' with a menu bar containing 'File Edit View Search Terminal Help'. The terminal output shows the MySQL installation process. It starts with a warning about anonymous users, followed by a prompt to remove them, which is answered with 'y'. Then it asks to disallow root login remotely, answered with 'N'. It then skips the 'test' database and asks to remove it, also answered with 'N'. Finally, it reloads the privilege tables and asks to reload them now, which is answered with 'Y'.

```
File Edit View Search Terminal Help
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.

Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : N

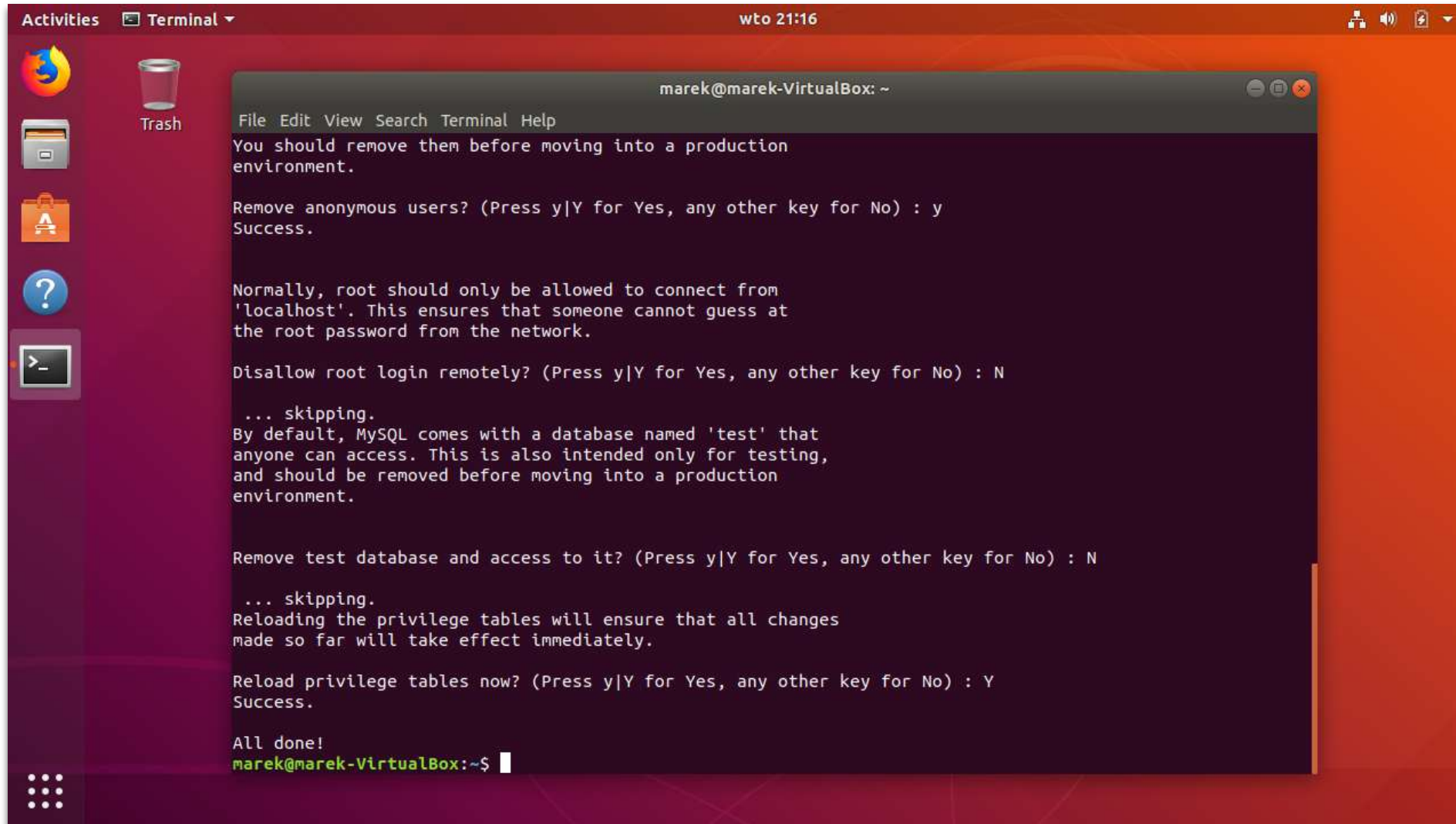
... skipping.
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.

Remove test database and access to it? (Press y|Y for Yes, any other key for No) : N

... skipping.
Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : Y
```

Gratulacje! Instalacja serwera MySQL została zakończona!



```
File Edit View Search Terminal Help
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.

Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : N

... skipping.
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.

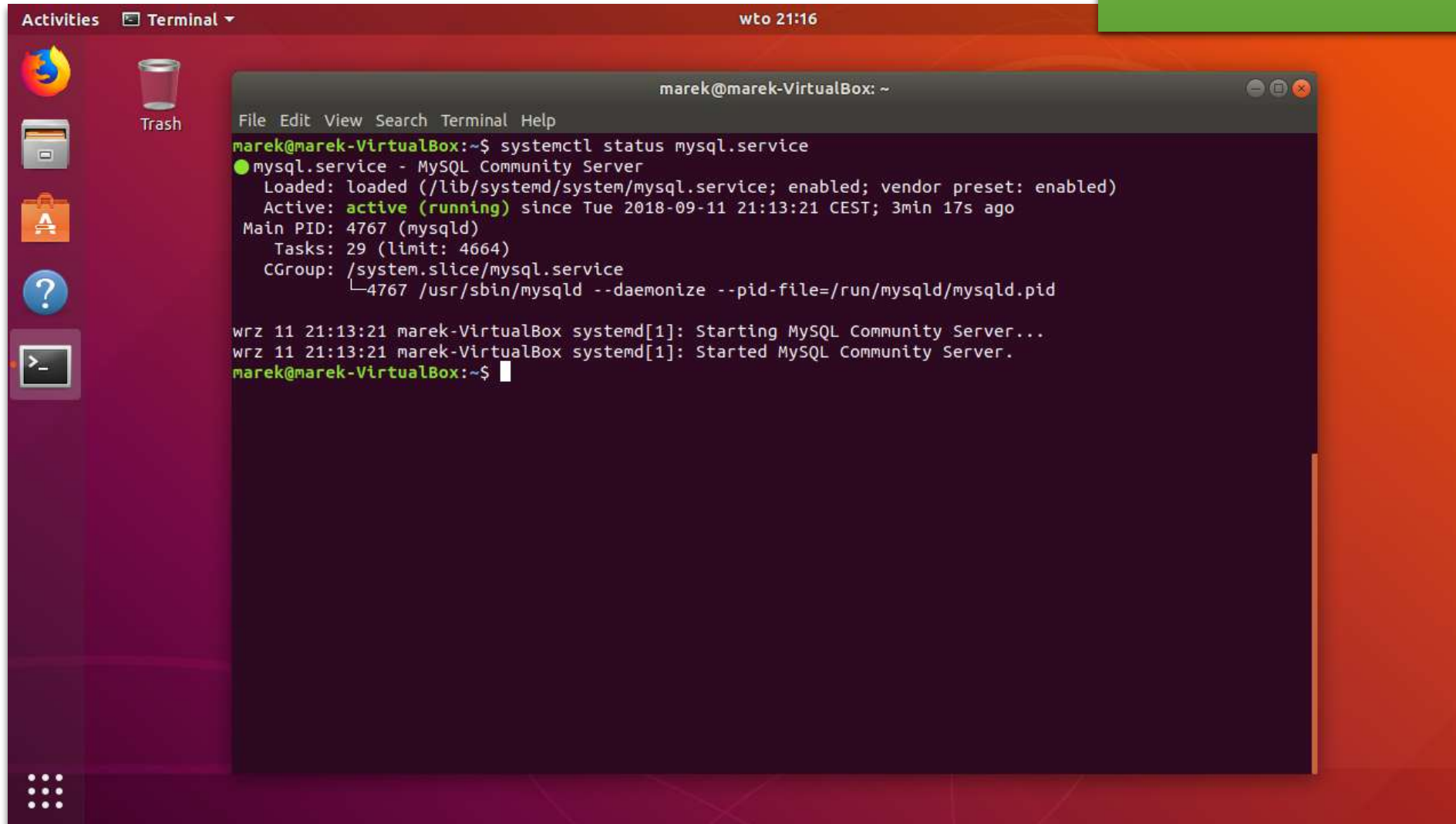
Remove test database and access to it? (Press y|Y for Yes, any other key for No) : N

... skipping.
Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : Y
Success.

All done!
marek@marek-VirtualBox:~$
```

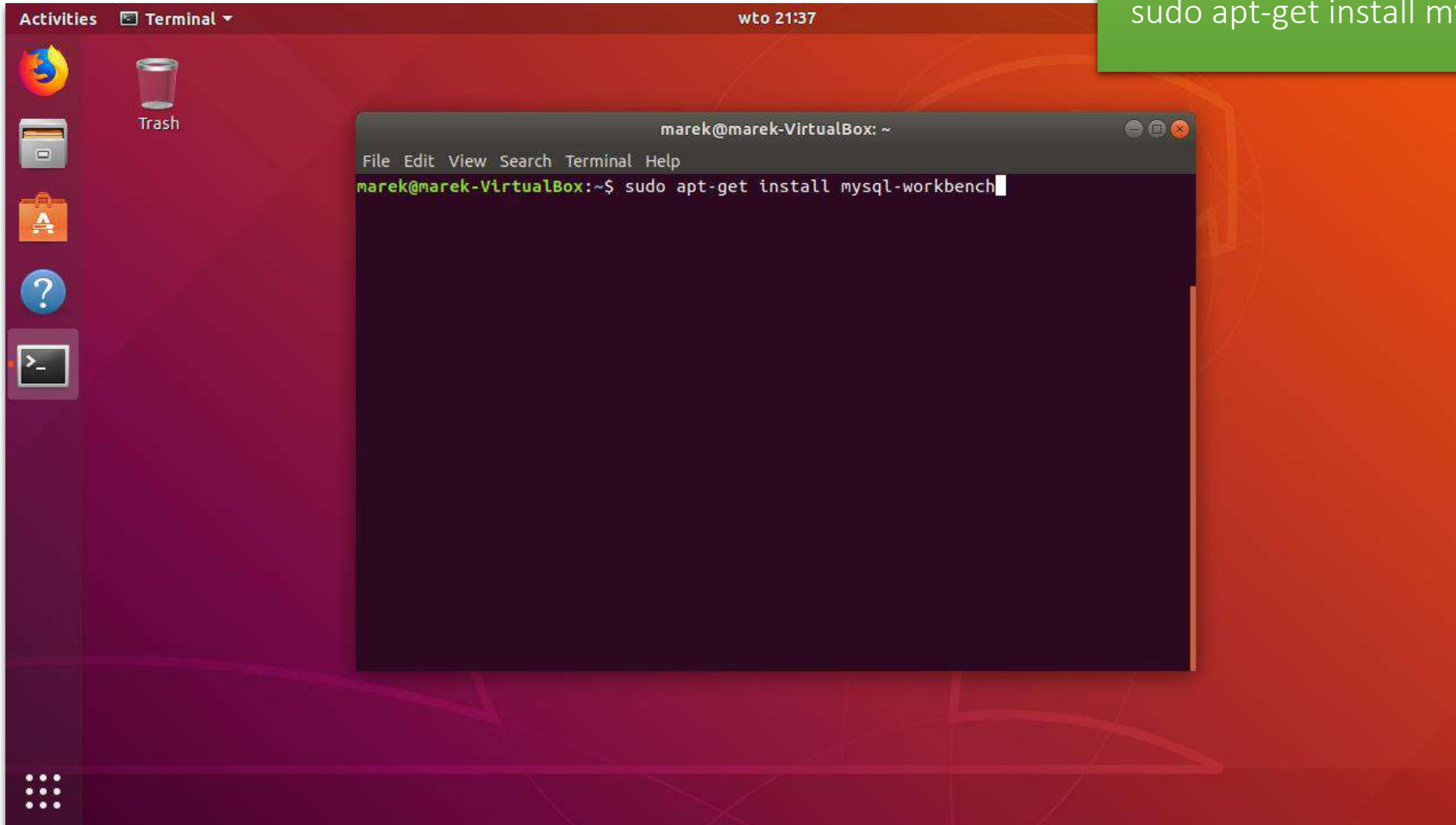

Możesz zweryfikować poprawność instalacji wykonując komendę `systemctl status mysql.service`



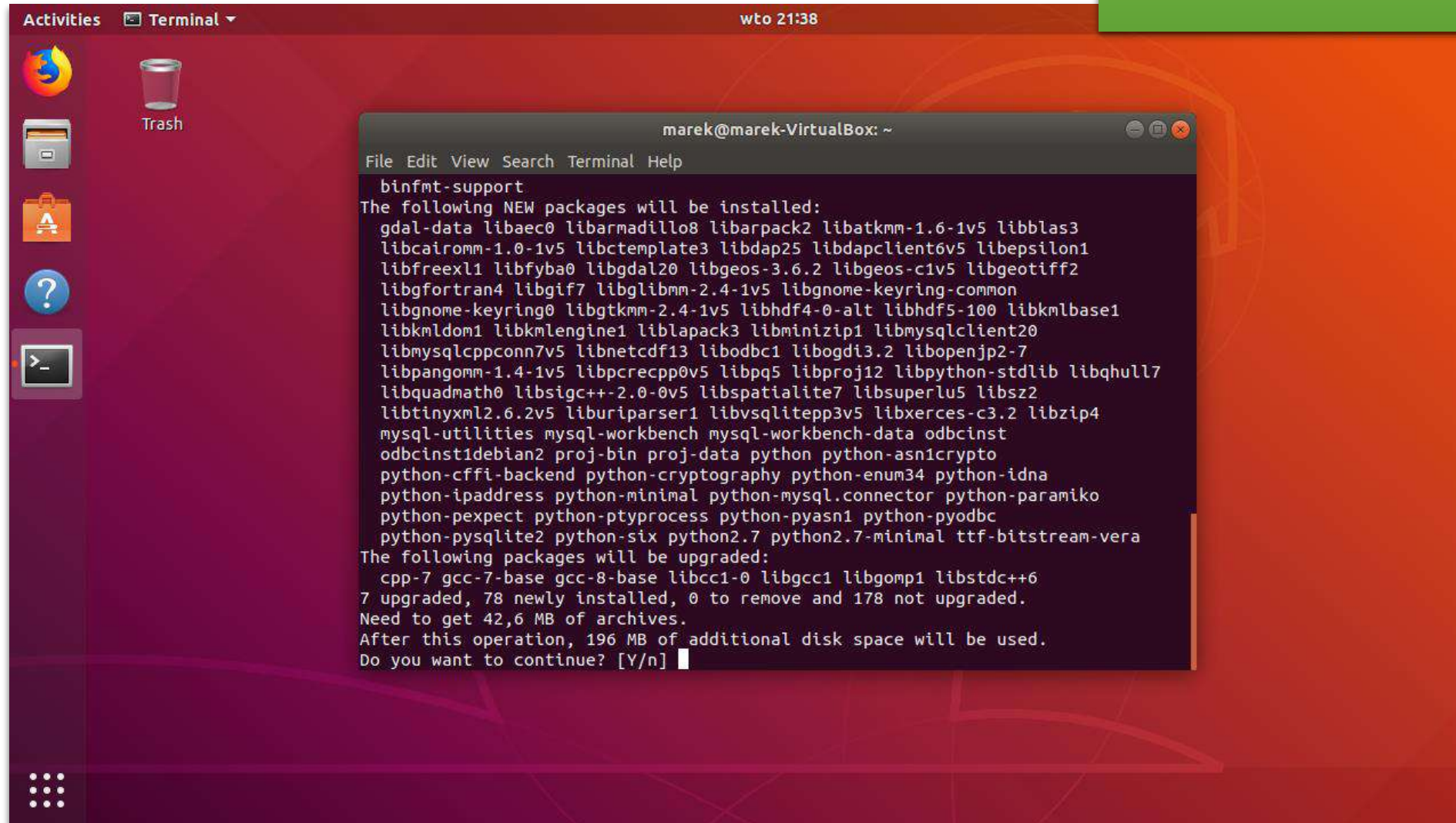
```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ systemctl status mysql.service  
● mysql.service - MySQL Community Server  
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)  
   Active: active (running) since Tue 2018-09-11 21:13:21 CEST; 3min 17s ago  
 Main PID: 4767 (mysqld)  
    Tasks: 29 (limit: 4664)  
   CGroup: /system.slice/mysql.service  
           └─4767 /usr/sbin/mysqld --daemonize --pid-file=/run/mysqld/mysqld.pid  
  
wrz 11 21:13:21 marek-VirtualBox systemd[1]: Starting MySQL Community Server...  
wrz 11 21:13:21 marek-VirtualBox systemd[1]: Started MySQL Community Server.  
marek@marek-VirtualBox:~$
```

MySQL

Aby zainstalować program MySQL Workbench wpisz w terminalu następujące polecenie
`sudo apt-get install mysql-workbench`



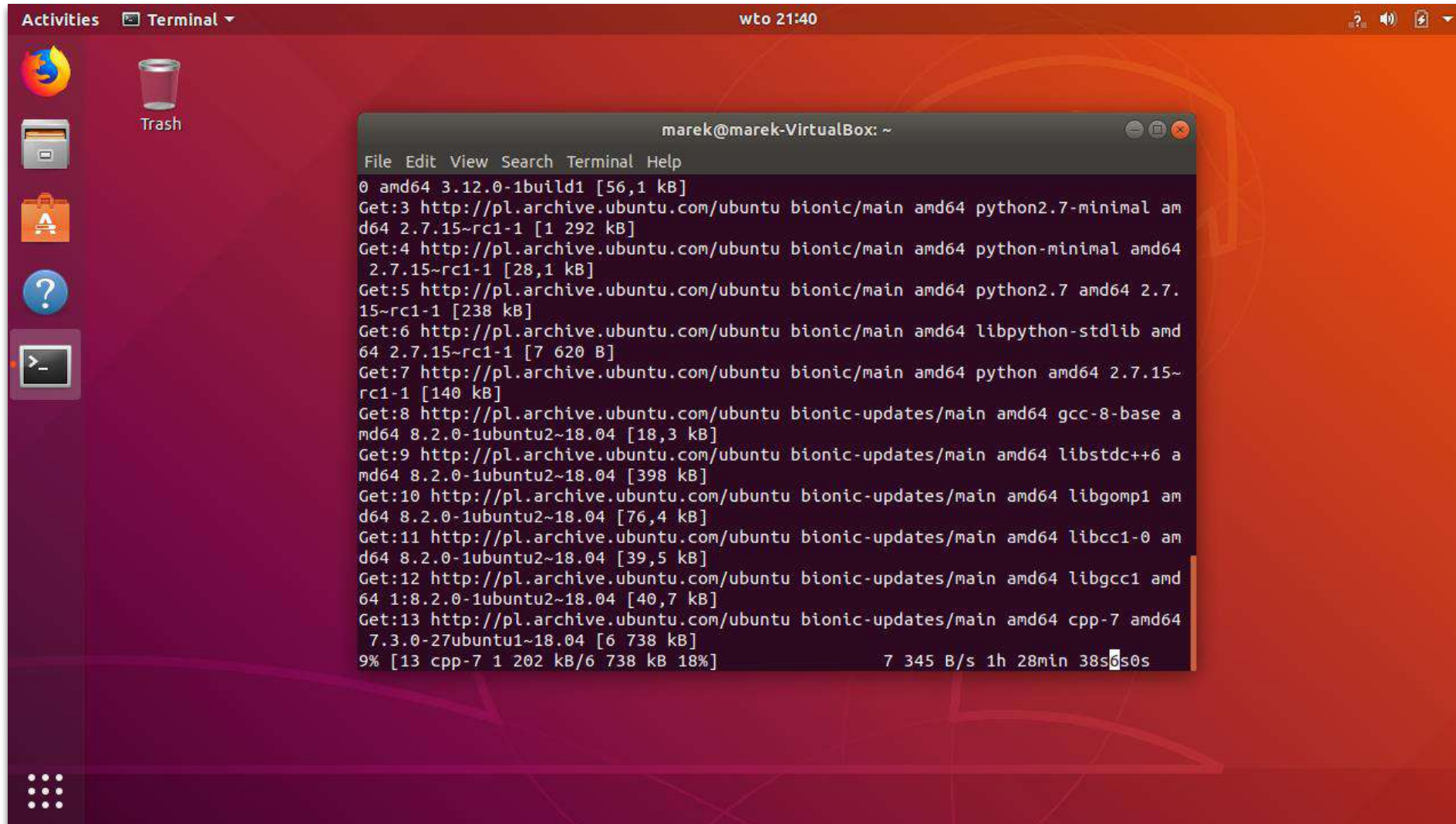
Na pytanie czy kontynuować instalację pakietu odpowiedz twierdząco (wpisz Y i wciśnij Enter)



The screenshot shows a Linux desktop with a terminal window open. The terminal displays the output of a command to install MySQL and related packages. The output lists new packages to be installed, packages to be upgraded, and the disk space requirements. The prompt 'Do you want to continue? [Y/n]' is visible at the bottom of the terminal output.

```
File Edit View Search Terminal Help
binfmt-support
The following NEW packages will be installed:
gdal-data libaec0 libarmadillo8 libarpack2 libatkmm-1.6-1v5 libblas3
libcairomm-1.0-1v5 libctemplate3 libdap25 libdapclient6v5 libepsilon1
libfreexl1 libfyba0 libgdal20 libgeos-3.6.2 libgeos-c1v5 libgeotiff2
libgfortran4 libgif7 libglibmm-2.4-1v5 libgnome-keyring-common
libgnome-keyring0 libgtkmm-2.4-1v5 libhdf4-0-alt libhdf5-100 libkmlbase1
libkmldev1 libkmlengine1 liblapack3 libminizip1 libmysqlclient20
libmysqlcppconn7v5 libnetcdf13 libodbc1 libogdi3.2 libopenjp2-7
libpangomm-1.4-1v5 libpcrecpp0v5 libpq5 libproj12 libpython-stdlib libqhull7
libquadmath0 libsigc++-2.0-0v5 libspatialite7 libsuperlu5 libsz2
libtinyxml2.6.2v5 liburiparser1 libvsqllitepp3v5 libxerces-c3.2 libzip4
mysql-utilities mysql-workbench mysql-workbench-data odbcinst
odbcinstdebian2 proj-bin proj-data python python-asn1crypto
python-cffi-backend python-cryptography python-enum34 python-idna
python-ipaddress python-minimal python-mysql.connector python-paramiko
python-pexpect python-ptyprocess python-pyasn1 python-pyodbc
python-pysqlite2 python-six python2.7 python2.7-minimal ttf-bitstream-vera
The following packages will be upgraded:
cpp-7 gcc-7-base gcc-8-base libcc1-0 libgcc1 libgomp1 libstdc++6
7 upgraded, 78 newly installed, 0 to remove and 178 not upgraded.
Need to get 42,6 MB of archives.
After this operation, 196 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```


Zaczekaj chwilę na zakończenie instalacji programu



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is 'marek@marek-VirtualBox: ~'. The terminal output shows the command 'sudo apt-get install python3' being executed, and the system is downloading and installing various packages. The output is as follows:

```
File Edit View Search Terminal Help
0 amd64 3.12.0-1build1 [56,1 kB]
Get:3 http://pl.archive.ubuntu.com/ubuntu bionic/main amd64 python2.7-minimal am
d64 2.7.15-rc1-1 [1 292 kB]
Get:4 http://pl.archive.ubuntu.com/ubuntu bionic/main amd64 python-minimal amd64
2.7.15-rc1-1 [28,1 kB]
Get:5 http://pl.archive.ubuntu.com/ubuntu bionic/main amd64 python2.7 amd64 2.7.
15-rc1-1 [238 kB]
Get:6 http://pl.archive.ubuntu.com/ubuntu bionic/main amd64 libpython-stdlib amd
64 2.7.15-rc1-1 [7 620 B]
Get:7 http://pl.archive.ubuntu.com/ubuntu bionic/main amd64 python amd64 2.7.15~
rc1-1 [140 kB]
Get:8 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 gcc-8-base a
md64 8.2.0-1ubuntu2~18.04 [18,3 kB]
Get:9 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libstdc++6 a
md64 8.2.0-1ubuntu2~18.04 [398 kB]
Get:10 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgomp1 am
d64 8.2.0-1ubuntu2~18.04 [76,4 kB]
Get:11 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgcc1 am
d64 8.2.0-1ubuntu2~18.04 [39,5 kB]
Get:12 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgcc1 amd
64 1:8.2.0-1ubuntu2~18.04 [40,7 kB]
Get:13 http://pl.archive.ubuntu.com/ubuntu bionic-updates/main amd64 cpp-7 amd64
7.3.0-27ubuntu1~18.04 [6 738 kB]
9% [13 cpp-7 1 202 kB/6 738 kB 18%] 7 345 B/s 1h 28min 38s0s0s
```

MySQL

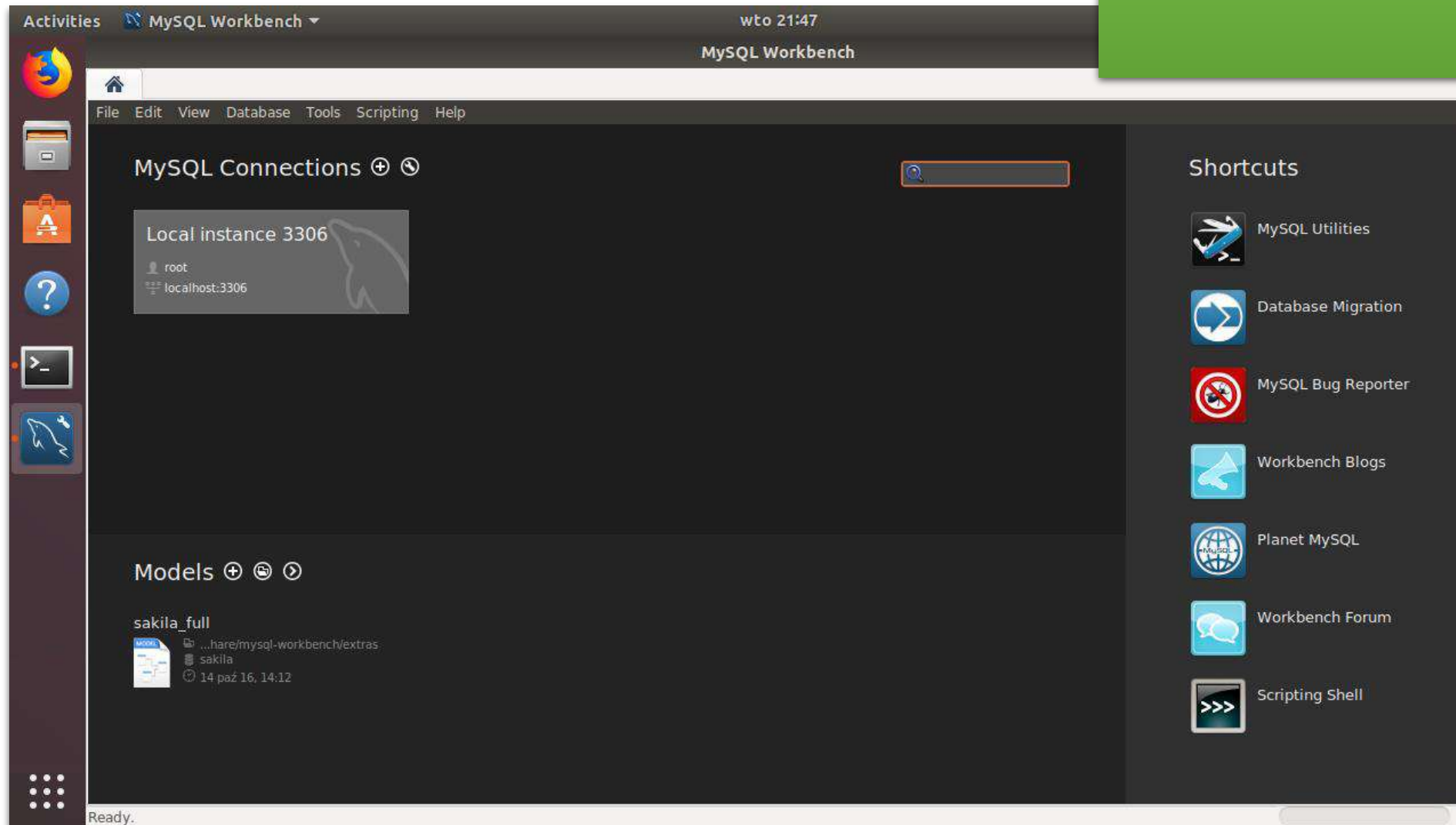
Kliknij w lewym dolnym rogu na ikonie Show Applications. Na liście zainstalowanych aplikacji powinna pojawić się ikona MySQL Workbench

Alternatywnie możesz uruchomić program wpisując w terminalu komendę `mysql-workbench`



MySQL

Gratulacje! Jeśli widzisz poniższy ekran
znaczy to, że instalacja MySQL
Workbench została zakończona!

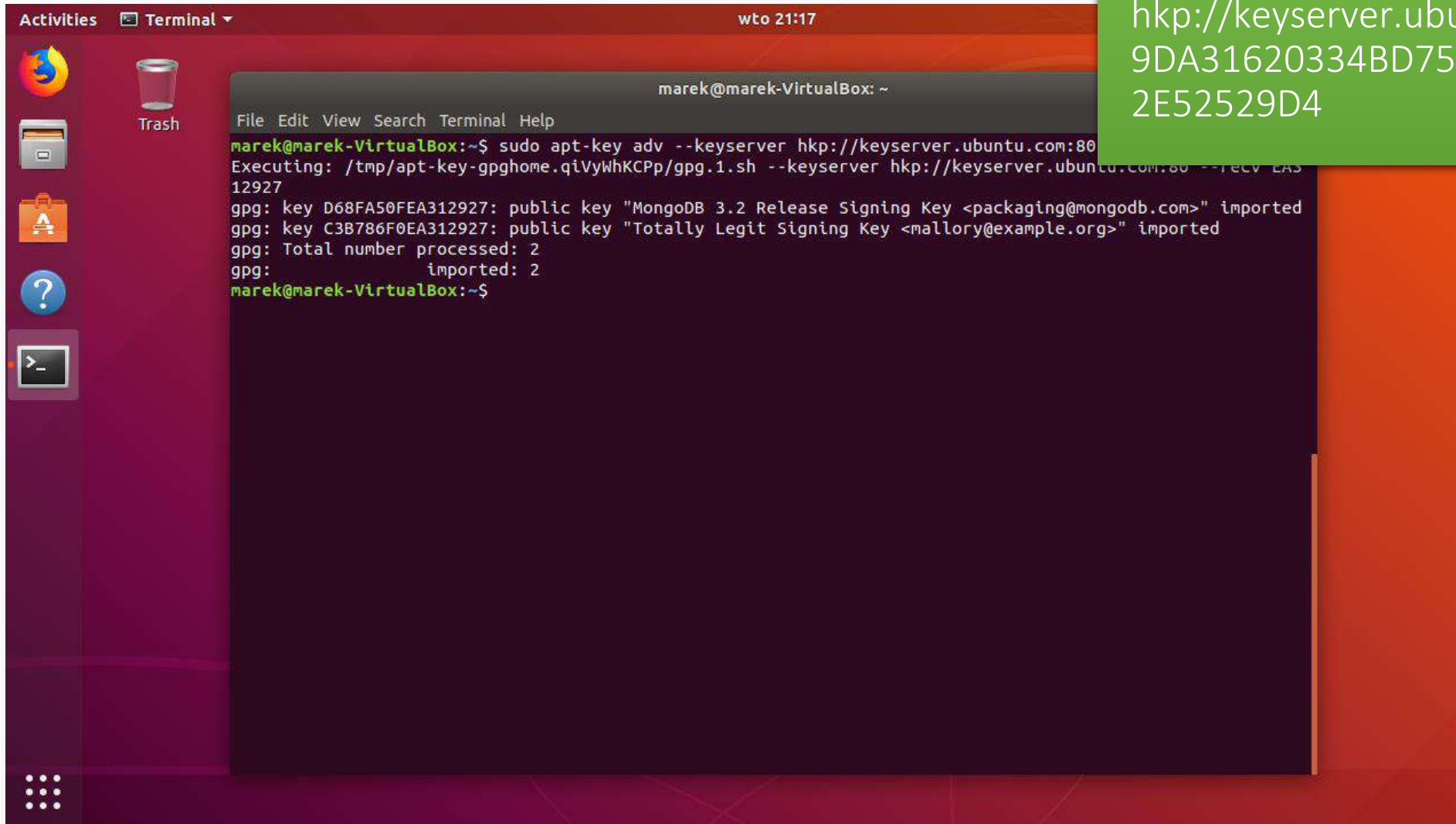


MongoDB



MongoDB

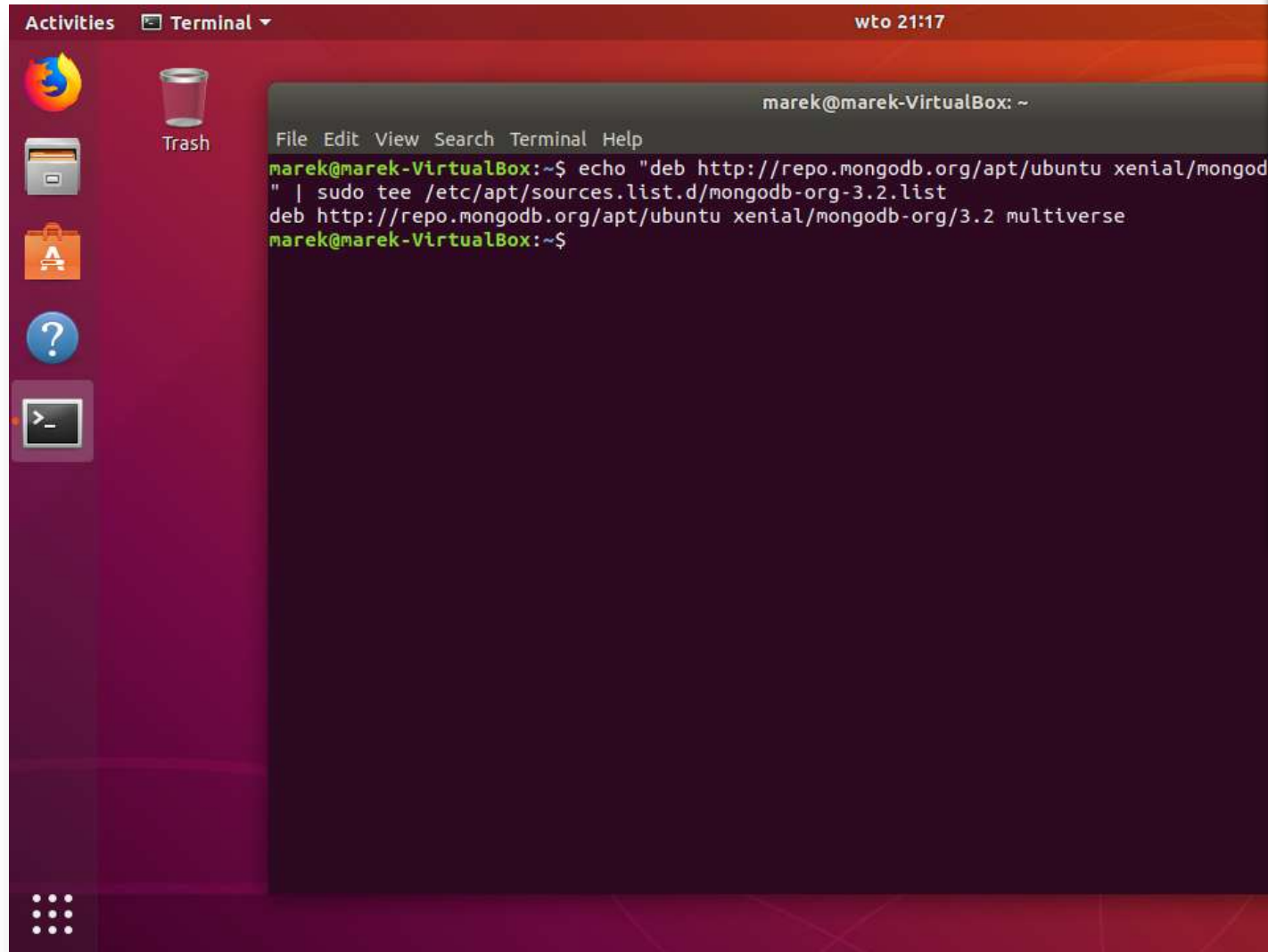
Uruchom okno terminala i wykonaj komendę
sudo apt-key adv --keyserver
hkp://keyserver.ubuntu.com:80 --recv
9DA31620334BD75D9DCB49F368818C7
2E52529D4



The screenshot shows a terminal window titled "Terminal" with the time "wto 21:17". The prompt is "marek@marek-VirtualBox: ~". The command executed is "sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv 9DA31620334BD75D9DCB49F368818C7 2E52529D4". The output shows the execution of a script and the successful import of two GPG keys: "MongoDB 3.2 Release Signing Key" and "Totally Legit Signing Key".

```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80  
Executing: /tmp/apt-key-gpghome.qiVyWhKCPp/gpg.1.sh --keyserver hkp://keyserver.ubuntu.com:80 --recv 9DA31620334BD75D9DCB49F368818C7 2E52529D4  
gpg: key D68FA50FEA312927: public key "MongoDB 3.2 Release Signing Key <packaging@mongodb.com>" imported  
gpg: key C3B786F0EA312927: public key "Totally Legit Signing Key <mallory@example.org>" imported  
gpg: Total number processed: 2  
gpg: imported: 2  
marek@marek-VirtualBox:~$
```

MongoDB



The screenshot shows a terminal window titled "Terminal" with a red header bar. The window displays the following commands and output:

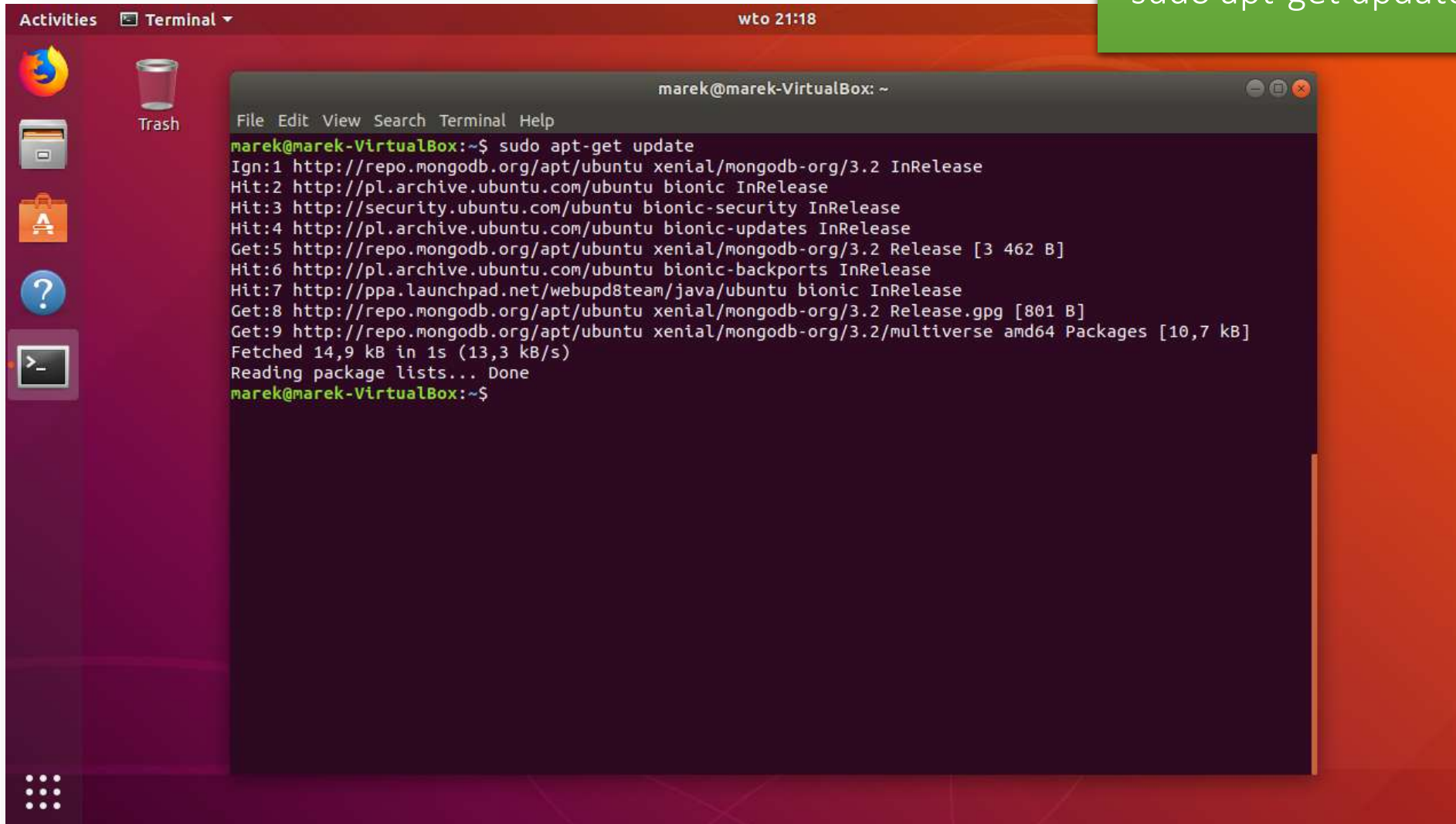
```
marek@marek-VirtualBox: ~  
File Edit View Search Terminal Help  
marek@marek-VirtualBox:~$ echo "deb http://repo.mongodb.org/apt/ubuntu xenial/mongod  
" | sudo tee /etc/apt/sources.list.d/mongodb-org-3.2.list  
deb http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.2 multiverse  
marek@marek-VirtualBox:~$
```

Następnie wykonaj komendę
`echo "deb [arch=amd64]
https://repo.mongodb.org/apt/ubuntu
bionic/mongodb-org/4.0 multiverse" |
sudo tee
/etc/apt/sources.list.d/mongodb-org-
4.0.list`

Powyższa komenda jest prawidłowa dla systemu Ubuntu 18.04. Dla innych wersji sprawdź komendę na poniższej stronie
[https://docs.mongodb.com/manual/ad
ministration/install-on-linux/](https://docs.mongodb.com/manual/administration/install-on-linux/)

Odśwież bazę pakietów wykonując komendę

`sudo apt-get update`



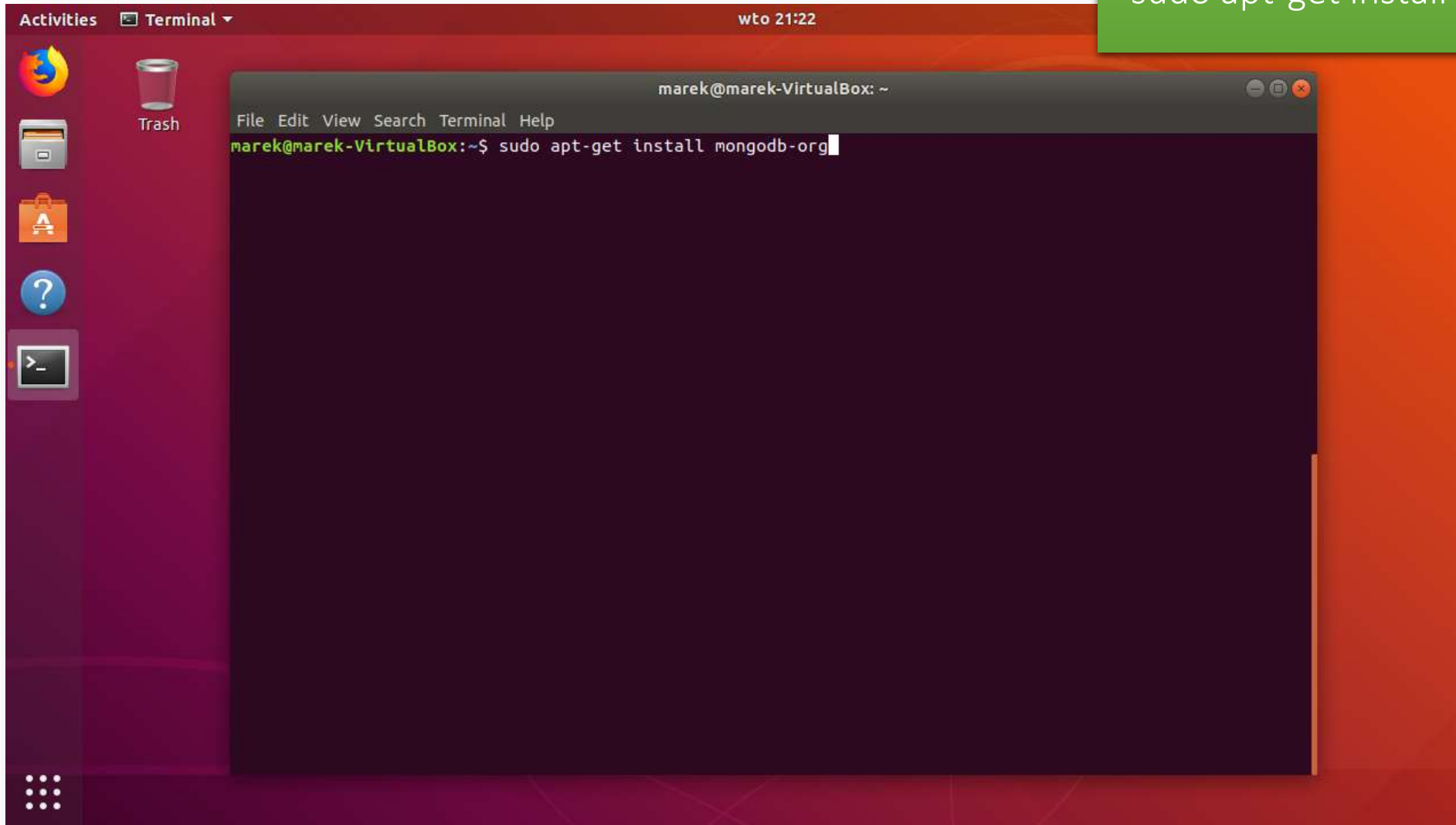
The screenshot shows a terminal window titled 'marek@marek-VirtualBox: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal output for the command 'sudo apt-get update' is as follows:

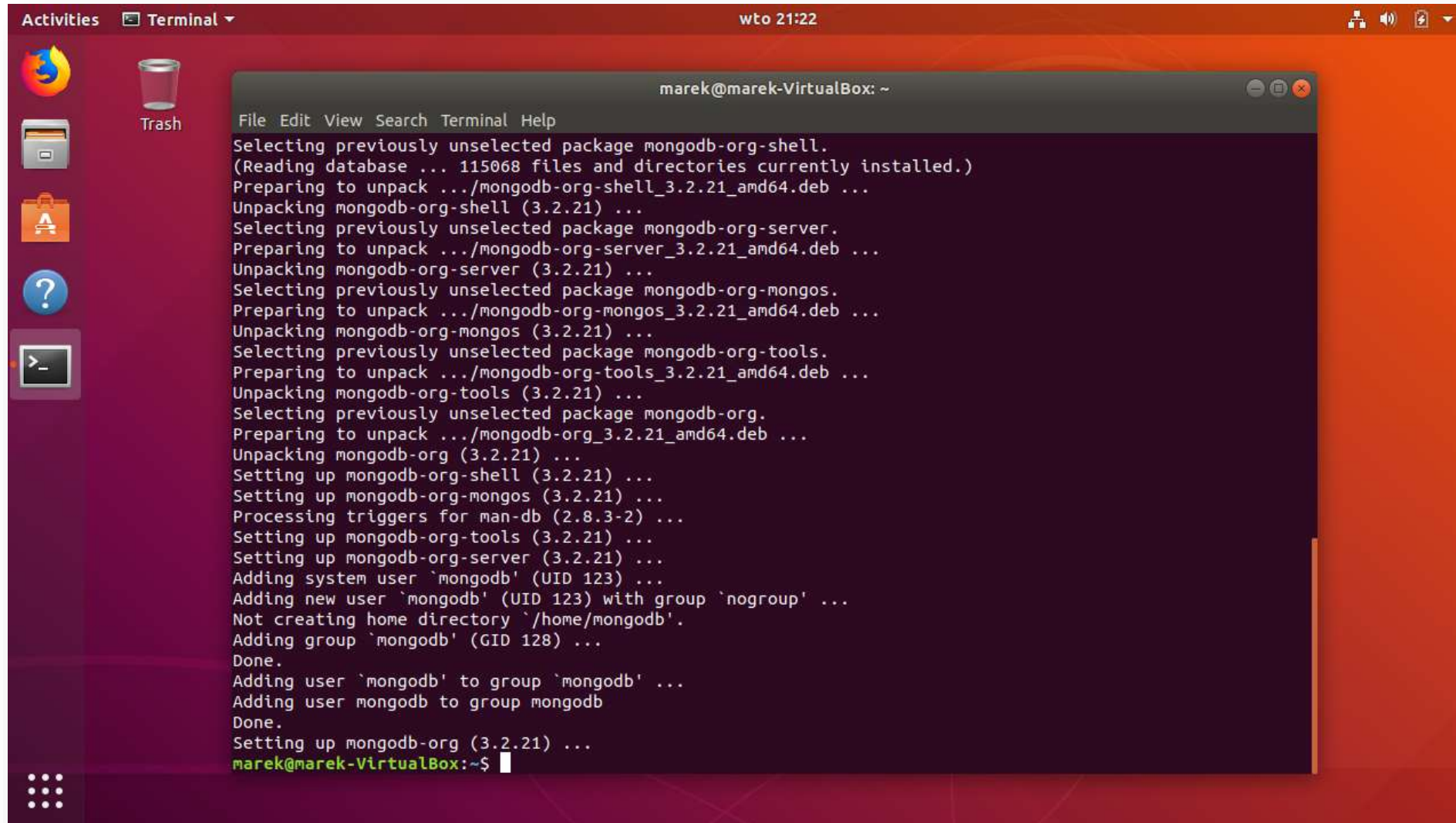
```
marek@marek-VirtualBox:~$ sudo apt-get update
Ign:1 http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.2 InRelease
Hit:2 http://pl.archive.ubuntu.com/ubuntu bionic InRelease
Hit:3 http://security.ubuntu.com/ubuntu bionic-security InRelease
Hit:4 http://pl.archive.ubuntu.com/ubuntu bionic-updates InRelease
Get:5 http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.2 Release [3 462 B]
Hit:6 http://pl.archive.ubuntu.com/ubuntu bionic-backports InRelease
Hit:7 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease
Get:8 http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.2 Release.gpg [801 B]
Get:9 http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.2/multiverse amd64 Packages [10,7 kB]
Fetched 14,9 kB in 1s (13,3 kB/s)
Reading package lists... Done
marek@marek-VirtualBox:~$
```

MongoDB

Zainstaluj bazę MongoDB wykonując polecenie

```
sudo apt-get install mongodb-org
```

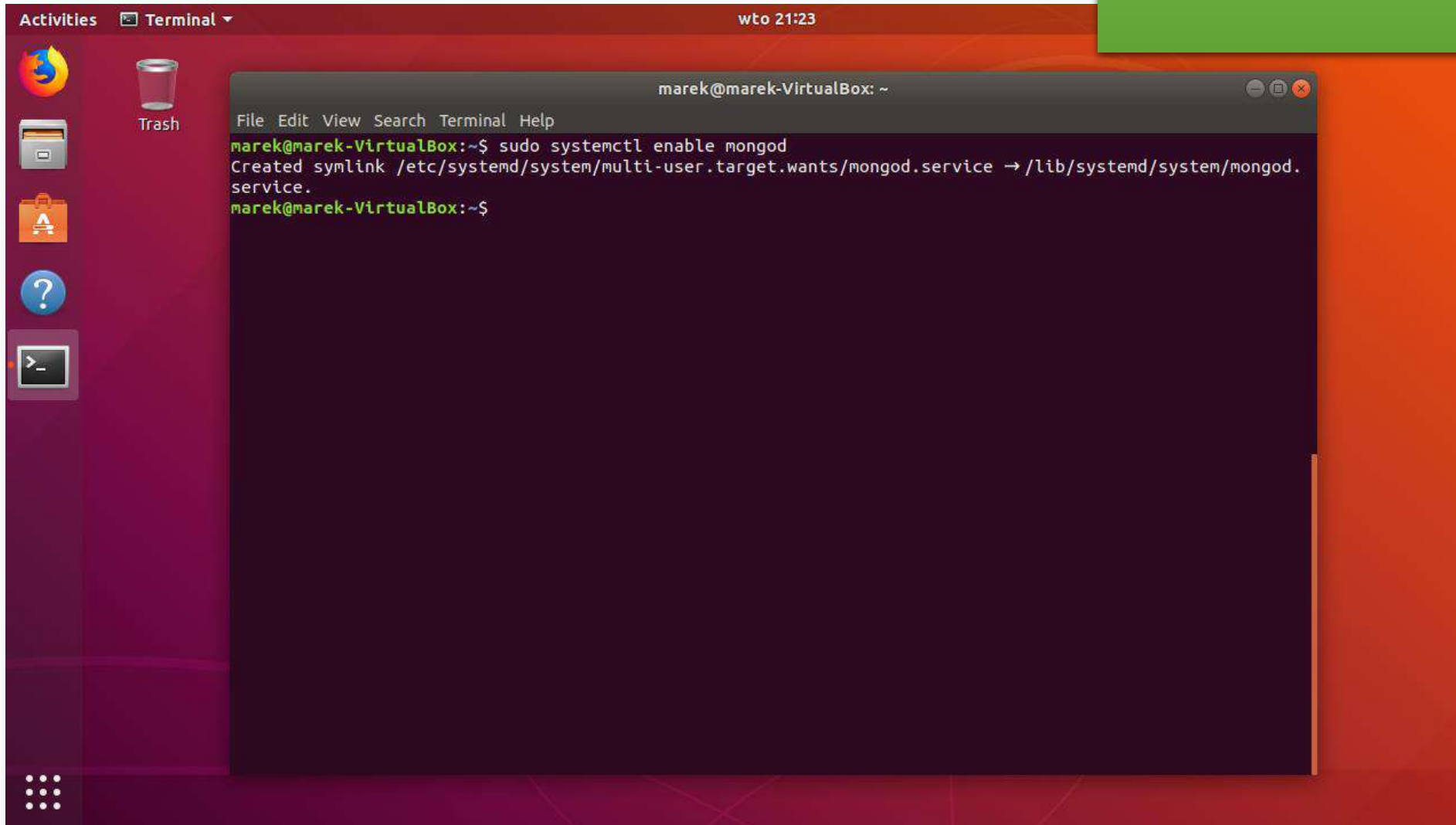




```
Activities Terminal wto 21:22
marek@marek-VirtualBox: ~
File Edit View Search Terminal Help
Selecting previously unselected package mongodb-org-shell.
(Reading database ... 115068 files and directories currently installed.)
Preparing to unpack .../mongodb-org-shell_3.2.21_amd64.deb ...
Unpacking mongodb-org-shell (3.2.21) ...
Selecting previously unselected package mongodb-org-server.
Preparing to unpack .../mongodb-org-server_3.2.21_amd64.deb ...
Unpacking mongodb-org-server (3.2.21) ...
Selecting previously unselected package mongodb-org-mongos.
Preparing to unpack .../mongodb-org-mongos_3.2.21_amd64.deb ...
Unpacking mongodb-org-mongos (3.2.21) ...
Selecting previously unselected package mongodb-org-tools.
Preparing to unpack .../mongodb-org-tools_3.2.21_amd64.deb ...
Unpacking mongodb-org-tools (3.2.21) ...
Selecting previously unselected package mongodb-org.
Preparing to unpack .../mongodb-org_3.2.21_amd64.deb ...
Unpacking mongodb-org (3.2.21) ...
Setting up mongodb-org-shell (3.2.21) ...
Setting up mongodb-org-mongos (3.2.21) ...
Processing triggers for man-db (2.8.3-2) ...
Setting up mongodb-org-tools (3.2.21) ...
Setting up mongodb-org-server (3.2.21) ...
Adding system user `mongodb' (UID 123) ...
Adding new user `mongodb' (UID 123) with group `nogroup' ...
Not creating home directory `/home/mongodb'.
Adding group `mongodb' (GID 128) ...
Done.
Adding user `mongodb' to group `mongodb' ...
Adding user mongodb to group mongodb
Done.
Setting up mongodb-org (3.2.21) ...
marek@marek-VirtualBox:~$
```


MongoDB

Włącz bazę danych wykonując polecenie
`sudo systemctl enable mongod`



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is 'marek@marek-VirtualBox: ~'. The command 'sudo systemctl enable mongod' has been executed, and the output is 'Created symlink /etc/systemd/system/multi-user.target.wants/mongod.service → /lib/systemd/system/mongod.service.' The prompt is now 'marek@marek-VirtualBox:~\$'.

```
marek@marek-VirtualBox:~$ sudo systemctl enable mongod
Created symlink /etc/systemd/system/multi-user.target.wants/mongod.service → /lib/systemd/system/mongod.service.
marek@marek-VirtualBox:~$
```



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