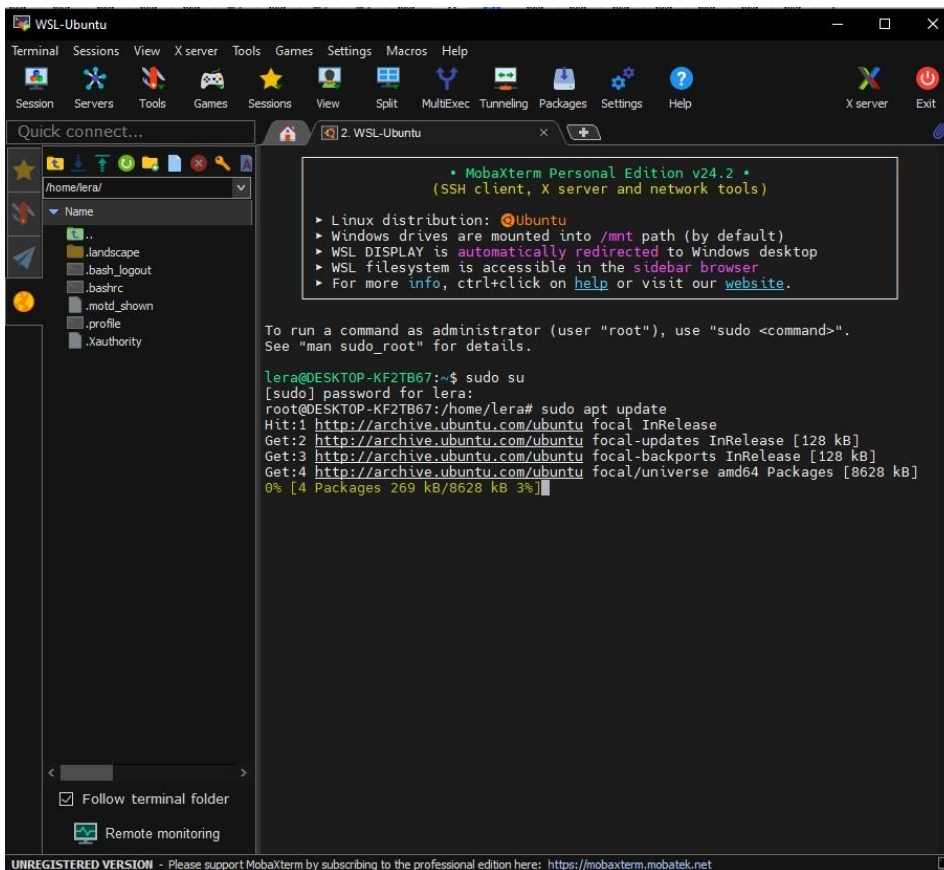



```
lera@DESKTOP-KF2TB67: ~  
Retype new password:  
passwd: password updated successfully  
Installation successful!  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.10.102.1-microsoft-standard-WSL2 x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage  
  
System information as of Mon Nov  4 20:17:25 MSK 2024  
  
System load:  0.07          Processes:      8  
Usage of /:   0.5% of 250.98GB Users logged in: 0  
Memory usage: 2%          IPv4 address for eth0: 172.17.199.147  
Swap usage:   0%  
  
1 update can be applied immediately.  
To see these additional updates run: apt list --upgradable  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
This message is shown once a day. To disable it please create the  
/home/lera/.hushlogin file.  
lera@DESKTOP-KF2TB67:~$
```

1.4. Закрываем Ubuntu, все остальные действия производим через программу MobaXterm:



The screenshot shows the MobaXterm v24.2 interface. The top menu bar includes Terminal, Sessions, View, X server, Tools, Games, Settings, Macros, and Help. Below the menu is a toolbar with icons for Session, Servers, Tools, Games, Sessions, View, Split, MultiExec, Tunneling, Packages, Settings, Help, X server, and Exit. The main terminal window displays the output of the Ubuntu WSL installation, including system information and update status. A sidebar on the left shows the file explorer for the /home/lera/ directory, listing files like .landscape, .bash_logout, .bashrc, .motd_shown, .profile, and .xauthority. The terminal output includes the following text:

```
lera@DESKTOP-KF2TB67:~$ sudo su  
[sudo] password for lera:  
root@DESKTOP-KF2TB67:/home/lera# sudo apt update  
Hit:1 http://archive.ubuntu.com/ubuntu focal InRelease  
Get:2 http://archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]  
Get:3 http://archive.ubuntu.com/ubuntu focal-backports InRelease [128 kB]  
Get:4 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [8628 kB]  
0% [4 Packages 269 kB/8628 kB 3%]
```

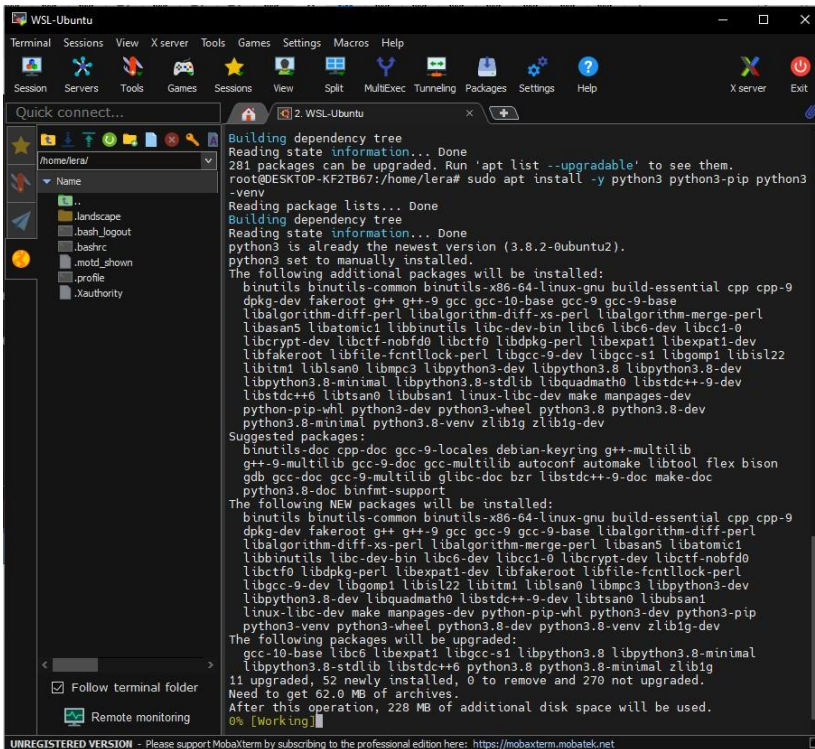
2.2 sudo su – получаем права доступа

2.3 sudo apt update получаем пакеты обновлений для Linux

2.4 sudo add-apt-repository ppa:deadsnakes/ppa подключаем нужный нам репозиторий

2.5 sudo apt install -y python3 python3-pip python3-venv команда устанавливает Python, pip и venv последней версии доступной в подключённом репозитории. - python3: Это интерпретатор языка программирования Python версии 3.x. Он позволяет запускать и выполнять Python-скрипты и приложения. - python3-pip: Это инструмент управления пакетами для Python. Он используется для установки, обновления и управления сторонними библиотеками и модулями Python. - python3-venv:

Этот пакет предоставляет виртуальное окружение Python, которое позволяет изолировать проекты Python друг от друга. Виртуальные окружения полезны для управления зависимостями проекта и предотвращения конфликтов между версиями пакетов. - `sudo apt install -y python3.8 python3.8-pip python3.8-venv` пример команды если нам нужна конкретная версия Python, в данном случае Python 3.8



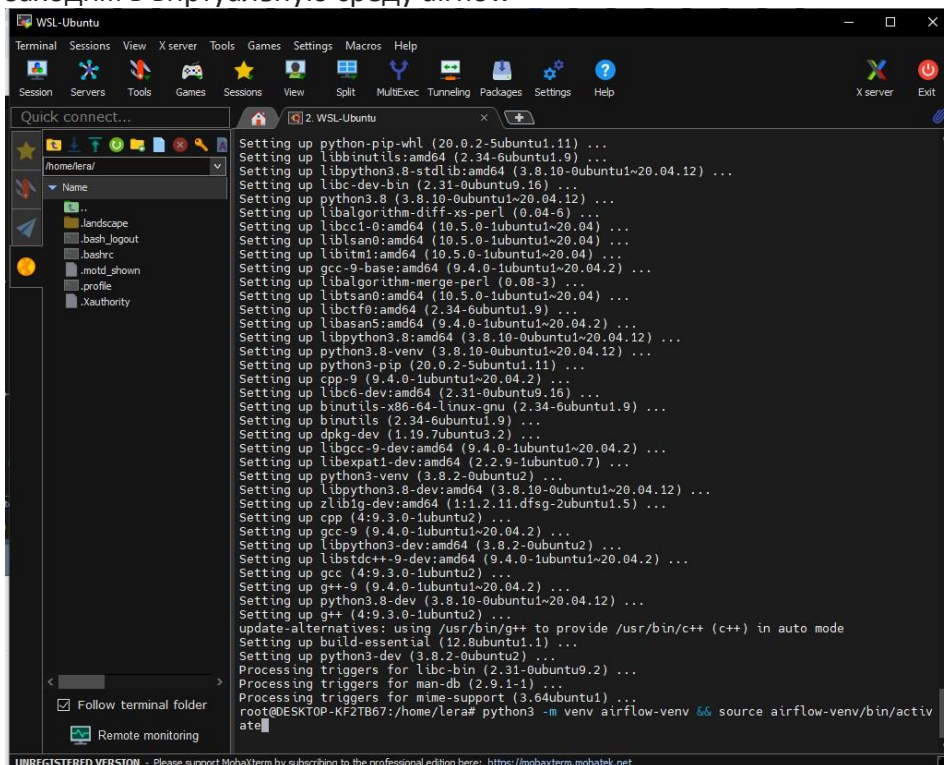
```
WSL-Ubuntu
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help X server Exit

Quick connect...
/home/lera/
Name
landscape
bash_logout
bashrc
motd_shown
profile
xauthority

Building dependency tree
Reading state information... Done
281 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@DESKTOP-KF2TB67:/home/lera# sudo apt install -y python3 python3-pip python3-venv
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3 is already the newest version (3.8.2-0ubuntu2).
python3 set to manually installed.
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp cpp-9
  dpkg-dev fakeroot g++ g++-9 gcc gcc-9-base libalgorithm-diff-perl
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan5 libatomic1
  libbinutils libc-dev-bin libc6 libc6-dev libcc1-0 libcrypt-dev
  libctf-nobfd0 libctf0 libdpkg-perl libexpat1 libexpat1-dev libfakeroot
  libfile-fcntllock-perl libgcc-9-dev libgcc-s1 libgomp1 libisl22
  libitm1 liblsan0 libmpc3 libpython3-dev libpython3.8 libpython3.8-dev
  libpython3.8-minimal libpython3.8-stdlib libquadmath0 libstdc++-9-dev
  libstdc++6 libtsan0 libubsan1 linux-libc-dev make manpages-dev
  python-pip-whl python3-dev python3-wheel python3.8 python3.8-dev
  python3.8-minimal python3.8-venv zlib1g zlib1g-dev
Suggested packages:
  binutils-doc cpp-doc gcc-9-locales debian-keyring g++-multilib
  g++-9-multilib gcc-9-doc gcc-multilib autoconf automake libtool flex bison
  gdb gcc-doc gcc-9-multilib glibc-doc bzip libstdc++-9-doc make-doc
  python3.8-doc binfmt-support
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp cpp-9
  dpkg-dev fakeroot g++ g++-9 gcc gcc-9-base libalgorithm-diff-perl
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan5 libatomic1
  libbinutils libc-dev-bin libc6 libc6-dev libcc1-0 libcrypt-dev
  libctf-nobfd0 libctf0 libdpkg-perl libexpat1 libexpat1-dev libfakeroot
  libfile-fcntllock-perl libgcc-9-dev libgomp1 libisl22 libitm1 liblsan0
  libmpc3 libpython3-dev libpython3.8 libpython3.8-dev
  libpython3.8-minimal libpython3.8-stdlib libquadmath0 libstdc++-9-dev
  libstdc++6 libtsan0 libubsan1 linux-libc-dev make manpages-dev
  python-pip-whl python3-dev python3-wheel python3.8 python3.8-dev
  python3.8-minimal python3.8-venv zlib1g zlib1g-dev
The following packages will be upgraded:
  gcc-10-base libc6 libexpat1 libgcc-s1 libpython3.8 libpython3.8-minimal
  libpython3.8-stdlib libstdc++6 python3.8 python3.8-minimal zlib1g
11 upgraded, 52 newly installed, 0 to remove and 270 not upgraded.
Need to get 62.0 MB of archives.
After this operation, 228 MB of additional disk space will be used.
0% [Working]
```

3. Установка программы AirFlow

3.1 `python3 -m venv airflow-venv && source airflow-venv/bin/activate` - данной командой мы заходим в виртуальную среду airflow



```
WSL-Ubuntu
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help X server Exit

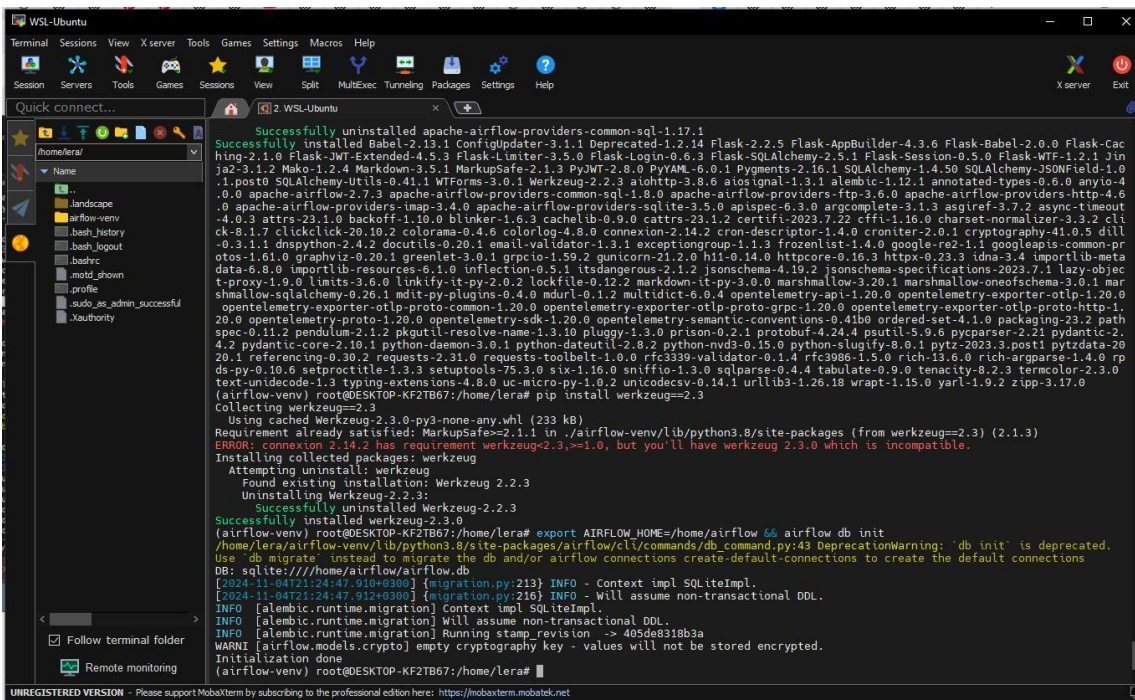
Quick connect...
/home/lera/
Name
landscape
bash_logout
bashrc
motd_shown
profile
xauthority

Setting up python-pip-whl (20.0.2-5ubuntu1.1) ...
Setting up libbinutils:amd64 (2.34-6ubuntu1.9) ...
Setting up libpython3.8-stdlib:amd64 (3.8.10-0ubuntu1~20.04.12) ...
Setting up libc-dev-bin (2.31-0ubuntu9.16) ...
Setting up python3.8 (3.8.10-0ubuntu1~20.04.12) ...
Setting up libalgorithm-diff-xs-perl (0.04-6) ...
Setting up libcc1-0:amd64 (10.5.0-1ubuntu1~20.04) ...
Setting up liblsan0:amd64 (10.5.0-1ubuntu1~20.04) ...
Setting up libitm1:amd64 (10.5.0-1ubuntu1~20.04) ...
Setting up gcc-9-base:amd64 (9.4.0-1ubuntu1~20.04.2) ...
Setting up libalgorithm-merge-perl (0.08-3) ...
Setting up libtsan0:amd64 (10.5.0-1ubuntu1~20.04) ...
Setting up libctf0:amd64 (2.34-6ubuntu1.9) ...
Setting up libasan5:amd64 (9.4.0-1ubuntu1~20.04.2) ...
Setting up libpython3.8:amd64 (3.8.10-0ubuntu1~20.04.12) ...
Setting up python3.8-venv (3.8.10-0ubuntu1~20.04.12) ...
Setting up python3-pip (20.0.2-5ubuntu1.1) ...
Setting up cpp-9 (9.4.0-1ubuntu1~20.04.2) ...
Setting up libc6-dev:amd64 (2.31-0ubuntu9.16) ...
Setting up binutils-x86-64-linux-gnu (2.34-6ubuntu1.9) ...
Setting up binutils (2.34-6ubuntu1.9) ...
Setting up dpkg-dev (1.19.7ubuntu3.2) ...
Setting up libgcc-9-dev:amd64 (9.4.0-1ubuntu1~20.04.2) ...
Setting up libexpat1-dev:amd64 (2.2.9-1ubuntu0.7) ...
Setting up python3-venv (3.8.2-0ubuntu2) ...
Setting up libpython3.8-dev:amd64 (3.8.10-0ubuntu1~20.04.12) ...
Setting up zlib1g-dev:amd64 (1:1.2.11.dfsg-2ubuntu1.5) ...
Setting up cpp (4:9.3.0-1ubuntu2) ...
Setting up gcc-9 (9.4.0-1ubuntu1~20.04.2) ...
Setting up libpython3-dev:amd64 (3.8.2-0ubuntu2) ...
Setting up libstdc++-9-dev:amd64 (9.4.0-1ubuntu1~20.04.2) ...
Setting up gcc (4:9.3.0-1ubuntu2) ...
Setting up g++-9 (9.4.0-1ubuntu1~20.04.2) ...
Setting up python3.8-dev (3.8.10-0ubuntu1~20.04.12) ...
Setting up g++ (4:9.3.0-1ubuntu2) ...
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode
Setting up build-essential (12.8ubuntu1) ...
Setting up python3-dev (3.8.2-0ubuntu2) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for mime-support (3.64ubuntu1) ...
root@DESKTOP-KF2TB67:/home/lera# python3 -m venv airflow-venv && source airflow-venv/bin/activate
```

3.2 `pip install apache-airflow==2.7.3 --constraint`

`"https://raw.githubusercontent.com/apache/airflow/constraints-2.7.3/constraints-3.8.txt" --force-reinstall --upgrade` данной командой мы устанавливаем airflow

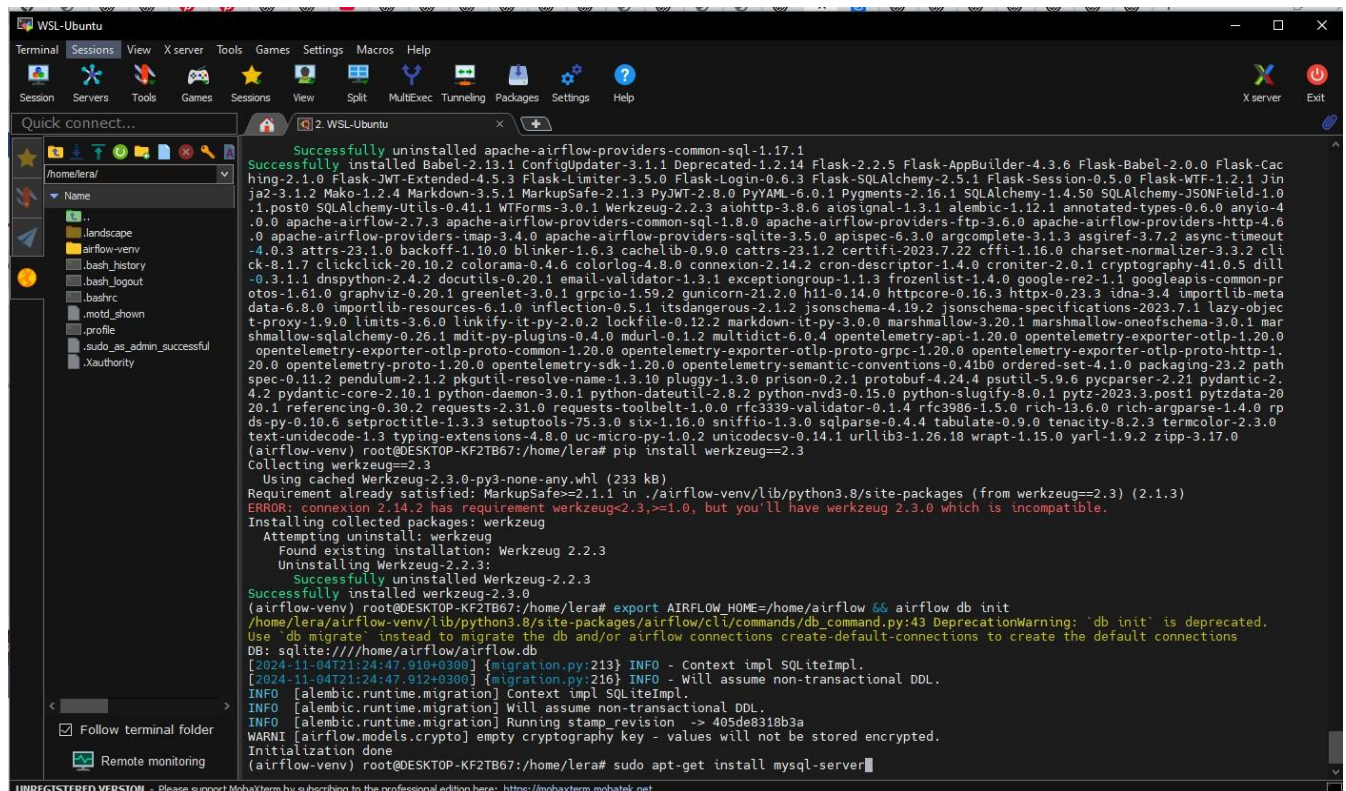
3.3 export AIRFLOW_HOME=/home/airflow && airflow db init - делаем пробный запуск airflow



```
Successfully installed Babel-2.13.1 ConfigUpdater-3.1.1 Deprecated-1.2.14 Flask-2.2.5 Flask-AppBuilder-4.3.6 Flask-Babel-2.0.0 Flask-Caching-2.1.0 Flask-JWT-Extended-4.5.3 Flask-Limiter-3.5.0 Flask-Login-0.6.3 Flask-SQLAlchemy-2.5.1 Flask-Session-0.5.0 Flask-WTF-1.2.1 Jinja2-3.1.2 Mako-1.2.4 Markdown-3.5.1 MarkupSafe-2.1.3 PyJWT-2.8.0 PyYAML-6.0.1 Pygments-2.16.1 SQLAlchemy-1.4.50 SQLAlchemy-JSONField-1.0.1.post0 SQLAlchemy-Utils-0.41.1 WTForms-3.0.1 Werkzeug-2.2.3 aiohttp-3.8.6 aiosignal-1.3.1 alembic-1.12.1 annotated-types-0.6.0 anyio-4.0.0 apache-airflow-2.7.3 apache-airflow-providers-common-sql-1.8.0 apache-airflow-providers-ftp-3.6.0 apache-airflow-providers-http-4.6.0 apache-airflow-providers-imap-3.4.0 apache-airflow-providers-sqlite-3.5.0 apispec-6.3.0 argcomplete-3.1.3 asgiref-3.7.2 async-timeout-4.0.3 attrs-23.1.0 backoff-1.10.0 blinker-1.6.3 cachetlib-0.9.0 cattrs-23.1.2 certifi-2023.7.22 cffi-1.16.0 charset-normalizer-3.3.2 click-8.1.7 clickclick-20.10.2 colorama-0.4.6 colorlog-4.8.0 connexion-2.14.2 cron-descriptor-1.4.0 croniter-2.0.1 cryptography-41.0.5 dill-0.3.1.1 dnspython-2.4.2 docutils-0.20.1 email-validator-1.3.1 exceptiongroup-1.1.3 frozenlist-1.4.0 google-re2-1.1 googleapis-common-protos-1.61.0 graphviz-0.20.1 greenlet-3.0.1 grpcio-1.59.2 gunicorn-21.2.0 h11-0.14.0 httpcore-0.16.3 httpx-0.23.3 idna-3.4 importlib-metadata-6.8.0 importlib-resources-6.1.0 infection-0.5.1 itsdangerous-2.1.2 jsonschema-4.19.2 jsonschema-specifications-2023.7.1 lazy-object-proxy-1.9.0 limits-3.6.0 linkify-it-py-2.0.2 lockfile-0.12.2 markdown-it-py-3.0.0 marshmallow-3.20.1 marshmallow-oneofschema-3.0.1 marshmallow-sqlalchemy-0.26.1 mdit-py-plugins-0.4.0 mdurl-0.1.2 multidict-6.0.4 opentelemetry-api-1.20.0 opentelemetry-exporter-otlp-1.20.0 opentelemetry-exporter-otlp-proto-common-1.20.0 opentelemetry-exporter-otlp-proto-grpc-1.20.0 opentelemetry-exporter-otlp-proto-http-1.20.0 opentelemetry-proto-1.20.0 opentelemetry-sdk-1.20.0 opentelemetry-semantic-conventions-0.41b0 ordered-set-4.1.0 packaging-23.2 pathspec-0.11.2 pendulum-2.1.2 pkgutil-resolve-name-1.3.10 pluggy-1.3.0 prison-0.2.1 protobuf-4.24.4 psutil-5.9.6 pycparser-2.21 pydantic-2.4.2 pydantic-core-2.10.1 python-daemon-3.0.1 python-dateutil-2.8.2 python-nvd3-0.15.0 python-slugify-8.0.1 pytz-2023.3.post1 pytzdata-2020.1 referencing-0.30.2 requests-2.31.0 requests-toolbelt-1.0.0 rfc3339-validator-0.1.4 rfc3986-1.5.0 rich-13.6.0 rich-argparse-1.4.0 rpds-py-0.10.6 setproctitle-1.3.3 setuptools-75.3.0 six-1.16.0 sniffio-1.3.0 sqlparse-0.4.4 tabulate-0.9.0 tenacity-8.2.3 termcolor-2.3.0 text-unidecode-1.3 typing-extensions-4.8.0 uc-micro-py-1.0.2 unicodecsv-0.14.1 urllib3-1.26.18 wrapt-1.15.0 yarl-1.9.2 zipp-3.17.0 (airflow-venv) root@DESKTOP-KF2TB67:/home/lera# pip install werkzeug==2.3
Collecting werkzeug==2.3
  Using cached Werkzeug-2.3.0-py3-none-any.whl (233 kB)
Requirement already satisfied: MarkupSafe>=2.1.1 in ./airflow-venv/lib/python3.8/site-packages (from werkzeug==2.3) (2.1.3)
ERROR: connexion 2.14.2 has requirement werkzeug<2.3,=>1.0, but you'll have werkzeug 2.3.0 which is incompatible.
Installing collected packages: werkzeug
  Attempting uninstall: werkzeug
    Found existing installation: Werkzeug 2.2.3
    Uninstalling Werkzeug-2.2.3:
      Successfully uninstalled Werkzeug-2.2.3
  Successfully installed werkzeug-2.3.0
(airflow-venv) root@DESKTOP-KF2TB67:/home/lera# export AIRFLOW_HOME=/home/airflow && airflow db init
/home/lera/airflow-venv/lib/python3.8/site-packages/airflow/cli/commands/db_command.py:43 DeprecationWarning: 'db init' is deprecated.
Use 'db migrate' instead to migrate the db and/or airflow connections create-default-connections to create the default connections
DB: sqlite:///home/airflow/airflow.db
[2024-11-04T21:24:47.910+0300] {migration.py:213} INFO - Context impl SQLiteImpl.
[2024-11-04T21:24:47.912+0300] {migration.py:216} INFO - Will assume non-transactional DDL.
INFO [alembic.runtime.migration] Context impl SQLiteImpl.
INFO [alembic.runtime.migration] Will assume non-transactional DDL.
INFO [alembic.runtime.migration] Running stamp revision -> 405de8318b3a
WARNI [airflow.models.crypto] empty cryptography key - values will not be stored encrypted.
Initialization done
(airflow-venv) root@DESKTOP-KF2TB67:/home/lera#
```

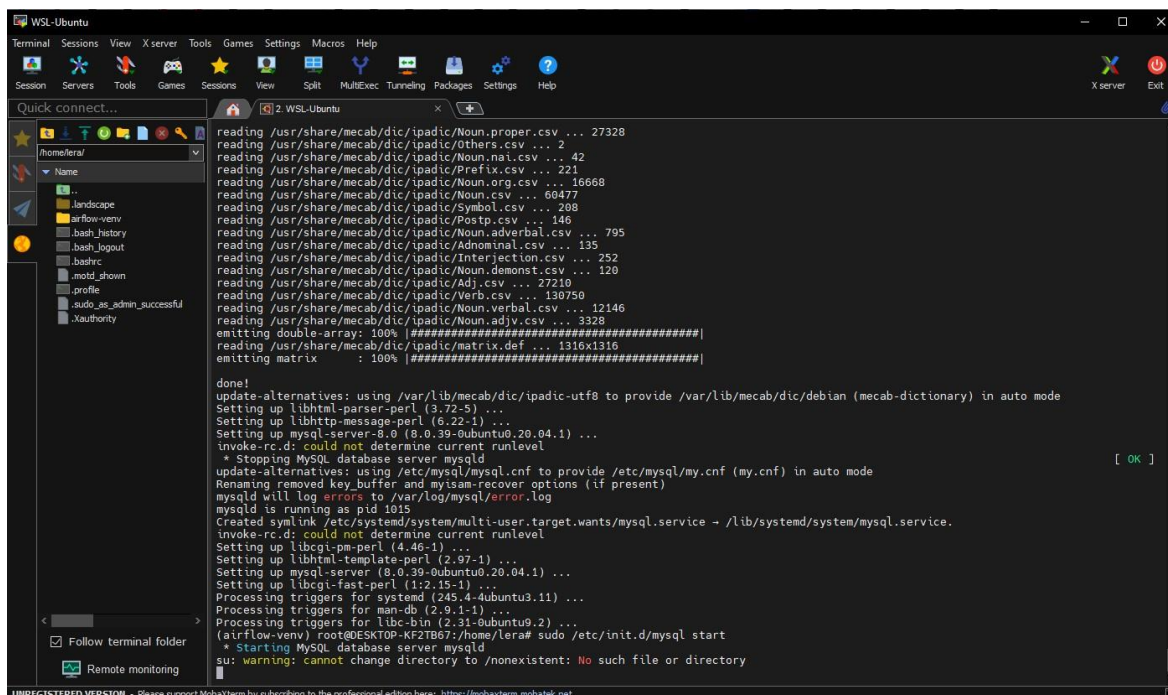
4. Далее мы устанавливаем Mysql:

4.1 sudo apt-get install mysql-server - устанавливаем Mysql



```
Successfully installed Babel-2.13.1 ConfigUpdater-3.1.1 Deprecated-1.2.14 Flask-2.2.5 Flask-AppBuilder-4.3.6 Flask-Babel-2.0.0 Flask-Caching-2.1.0 Flask-JWT-Extended-4.5.3 Flask-Limiter-3.5.0 Flask-Login-0.6.3 Flask-SQLAlchemy-2.5.1 Flask-Session-0.5.0 Flask-WTF-1.2.1 Jinja2-3.1.2 Mako-1.2.4 Markdown-3.5.1 MarkupSafe-2.1.3 PyJWT-2.8.0 PyYAML-6.0.1 Pygments-2.16.1 SQLAlchemy-1.4.50 SQLAlchemy-JSONField-1.0.1.post0 SQLAlchemy-Utils-0.41.1 WTForms-3.0.1 Werkzeug-2.2.3 aiohttp-3.8.6 aiosignal-1.3.1 alembic-1.12.1 annotated-types-0.6.0 anyio-4.0.0 apache-airflow-2.7.3 apache-airflow-providers-common-sql-1.8.0 apache-airflow-providers-ftp-3.6.0 apache-airflow-providers-http-4.6.0 apache-airflow-providers-imap-3.4.0 apache-airflow-providers-sqlite-3.5.0 apispec-6.3.0 argcomplete-3.1.3 asgiref-3.7.2 async-timeout-4.0.3 attrs-23.1.0 backoff-1.10.0 blinker-1.6.3 cachetlib-0.9.0 cattrs-23.1.2 certifi-2023.7.22 cffi-1.16.0 charset-normalizer-3.3.2 click-8.1.7 clickclick-20.10.2 colorama-0.4.6 colorlog-4.8.0 connexion-2.14.2 cron-descriptor-1.4.0 croniter-2.0.1 cryptography-41.0.5 dill-0.3.1.1 dnspython-2.4.2 docutils-0.20.1 email-validator-1.3.1 exceptiongroup-1.1.3 frozenlist-1.4.0 google-re2-1.1 googleapis-common-protos-1.61.0 graphviz-0.20.1 greenlet-3.0.1 grpcio-1.59.2 gunicorn-21.2.0 h11-0.14.0 httpcore-0.16.3 httpx-0.23.3 idna-3.4 importlib-metadata-6.8.0 importlib-resources-6.1.0 infection-0.5.1 itsdangerous-2.1.2 jsonschema-4.19.2 jsonschema-specifications-2023.7.1 lazy-object-proxy-1.9.0 limits-3.6.0 linkify-it-py-2.0.2 lockfile-0.12.2 markdown-it-py-3.0.0 marshmallow-3.20.1 marshmallow-oneofschema-3.0.1 marshmallow-sqlalchemy-0.26.1 mdit-py-plugins-0.4.0 mdurl-0.1.2 multidict-6.0.4 opentelemetry-api-1.20.0 opentelemetry-exporter-otlp-1.20.0 opentelemetry-exporter-otlp-proto-common-1.20.0 opentelemetry-exporter-otlp-proto-grpc-1.20.0 opentelemetry-exporter-otlp-proto-http-1.20.0 opentelemetry-proto-1.20.0 opentelemetry-sdk-1.20.0 opentelemetry-semantic-conventions-0.41b0 ordered-set-4.1.0 packaging-23.2 pathspec-0.11.2 pendulum-2.1.2 pkgutil-resolve-name-1.3.10 pluggy-1.3.0 prison-0.2.1 protobuf-4.24.4 psutil-5.9.6 pycparser-2.21 pydantic-2.4.2 pydantic-core-2.10.1 python-daemon-3.0.1 python-dateutil-2.8.2 python-nvd3-0.15.0 python-slugify-8.0.1 pytz-2023.3.post1 pytzdata-2020.1 referencing-0.30.2 requests-2.31.0 requests-toolbelt-1.0.0 rfc3339-validator-0.1.4 rfc3986-1.5.0 rich-13.6.0 rich-argparse-1.4.0 rpds-py-0.10.6 setproctitle-1.3.3 setuptools-75.3.0 six-1.16.0 sniffio-1.3.0 sqlparse-0.4.4 tabulate-0.9.0 tenacity-8.2.3 termcolor-2.3.0 text-unidecode-1.3 typing-extensions-4.8.0 uc-micro-py-1.0.2 unicodecsv-0.14.1 urllib3-1.26.18 wrapt-1.15.0 yarl-1.9.2 zipp-3.17.0 (airflow-venv) root@DESKTOP-KF2TB67:/home/lera# pip install werkzeug==2.3
Collecting werkzeug==2.3
  Using cached Werkzeug-2.3.0-py3-none-any.whl (233 kB)
Requirement already satisfied: MarkupSafe>=2.1.1 in ./airflow-venv/lib/python3.8/site-packages (from werkzeug==2.3) (2.1.3)
ERROR: connexion 2.14.2 has requirement werkzeug<2.3,=>1.0, but you'll have werkzeug 2.3.0 which is incompatible.
Installing collected packages: werkzeug
  Attempting uninstall: werkzeug
    Found existing installation: Werkzeug 2.2.3
    Uninstalling Werkzeug-2.2.3:
      Successfully uninstalled Werkzeug-2.2.3
  Successfully installed werkzeug-2.3.0
(airflow-venv) root@DESKTOP-KF2TB67:/home/lera# export AIRFLOW_HOME=/home/airflow && airflow db init
/home/lera/airflow-venv/lib/python3.8/site-packages/airflow/cli/commands/db_command.py:43 DeprecationWarning: 'db init' is deprecated.
Use 'db migrate' instead to migrate the db and/or airflow connections create-default-connections to create the default connections
DB: sqlite:///home/airflow/airflow.db
[2024-11-04T21:24:47.910+0300] {migration.py:213} INFO - Context impl SQLiteImpl.
[2024-11-04T21:24:47.912+0300] {migration.py:216} INFO - Will assume non-transactional DDL.
INFO [alembic.runtime.migration] Context impl SQLiteImpl.
INFO [alembic.runtime.migration] Will assume non-transactional DDL.
INFO [alembic.runtime.migration] Running stamp revision -> 405de8318b3a
WARNI [airflow.models.crypto] empty cryptography key - values will not be stored encrypted.
Initialization done
(airflow-venv) root@DESKTOP-KF2TB67:/home/lera# sudo apt-get install mysql-server
```

4.2 sudo /etc/init.d/mysql start - запускаем Mysql



```
reading /usr/share/mecab/dic/ipadic/Noun.proper.csv ... 27328
reading /usr/share/mecab/dic/ipadic/Others.csv ... 2
reading /usr/share/mecab/dic/ipadic/Noun.nai.csv ... 42
reading /usr/share/mecab/dic/ipadic/Prefix.csv ... 221
reading /usr/share/mecab/dic/ipadic/Noun.org.csv ... 16668
reading /usr/share/mecab/dic/ipadic/Noun.csv ... 60477
reading /usr/share/mecab/dic/ipadic/Symbol.csv ... 208
reading /usr/share/mecab/dic/ipadic/Postp.csv ... 146
reading /usr/share/mecab/dic/ipadic/Noun.adverbial.csv ... 795
reading /usr/share/mecab/dic/ipadic/Adnominal.csv ... 135
reading /usr/share/mecab/dic/ipadic/Interjection.csv ... 252
reading /usr/share/mecab/dic/ipadic/Noun.demonst.csv ... 120
reading /usr/share/mecab/dic/ipadic/Adj.csv ... 27210
reading /usr/share/mecab/dic/ipadic/Verb.csv ... 130750
reading /usr/share/mecab/dic/ipadic/Noun.verbal.csv ... 12146
reading /usr/share/mecab/dic/ipadic/Noun.advj.csv ... 3328
emitting double-array: 100% |#####|
reading /usr/share/mecab/dic/ipadic/matrix.def ... 1316x1316
emitting matrix : 100% |#####|
done!
update-alternatives: using /var/lib/mecab/dic/ipadic-utf8 to provide /var/lib/mecab/dic/debian (mecab-dictionary) in auto mode
Setting up libhtml-parser-perl (3.72-5) ...
Setting up libhttp-message-perl (6.22-1) ...
Setting up mysql-server-8.0 (8.0.39-0ubuntu0.20.04.1) ...
invoke-rc.d: could not determine current runlevel
* Stopping MySQL database server mysqld
update-alternatives: using /etc/mysql/mysql.cnf to provide /etc/mysql/my.cnf (my.cnf) in auto mode
Renaming removed key buffer and mysam-recover options (if present)
mysqld will log errors to /var/log/mysql/error.log
mysqld is running as pid 1015
Created symlink /etc/systemd/system/multi-user.target.wants/mysql.service → /lib/systemd/system/mysql.service.
invoke-rc.d: could not determine current runlevel
Setting up libcgil-pm-perl (4.46-1) ...
Setting up libhtml-template-perl (2.97-1) ...
Setting up mysql-server (8.0.39-0ubuntu0.20.04.1) ...
Setting up libcgi-fast-perl (1:2.15-1) ...
Processing triggers for systemd (245.4-4ubuntu3.11) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
(airflow-venv) root@DESKTOP-KF2T867:/home/lera# sudo /etc/init.d/mysql start
* Starting MySQL database server mysqld
su: warning: cannot change directory to /nonexistent: No such file or directory
(airflow-venv) root@DESKTOP-KF2T867:/home/lera#
```

4.3 sudo mysql_secure_installation - запускаем настройку сервиса везде ставим нет кроме последнего пункта:

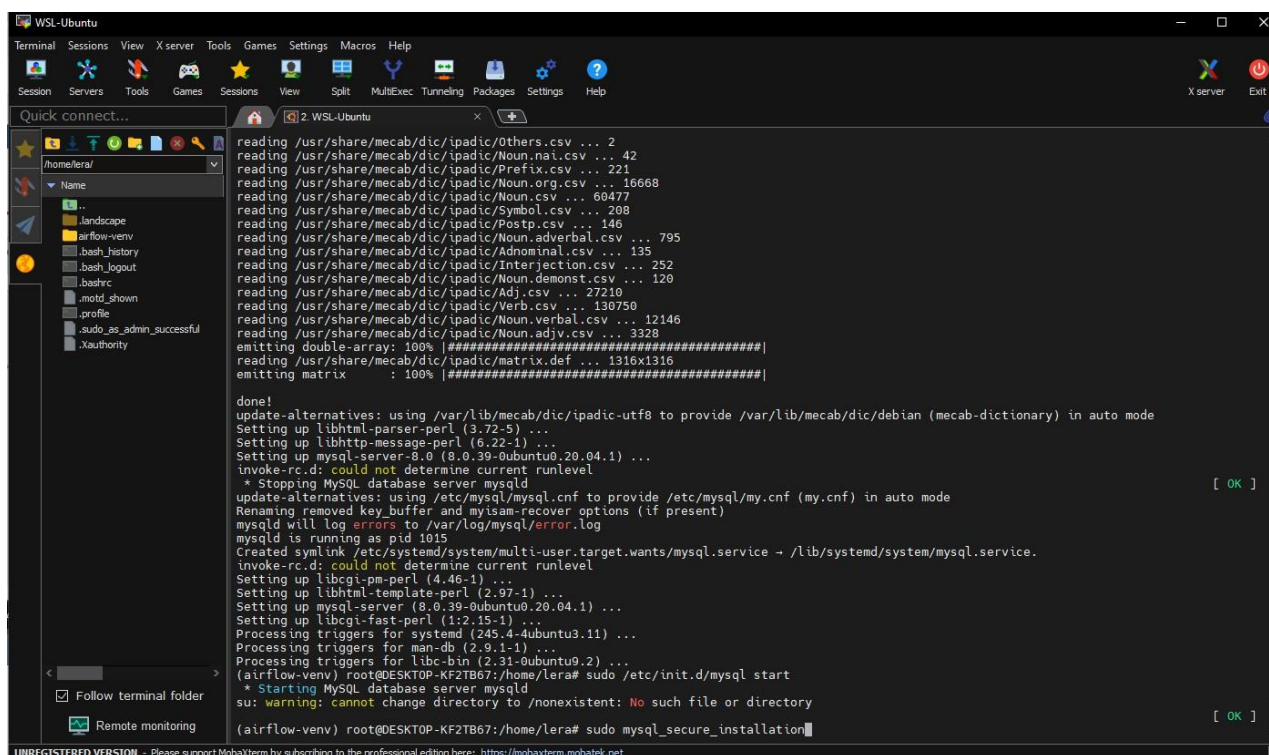
- VALIDATE PASSWORD COMPONENT... ставим n

- By default, a MySQL installation has an anonymous user... ставим n (no)

- Normally, root should only be allowed to connect from 'localhost'... ставим n (no)

- By default, MySQL comes with a database named 'test' that... ставим n (no)

- Reloading the privilege tables will ensure that all changes made so far will take effect immediately anyone can access... ставим y (yes).

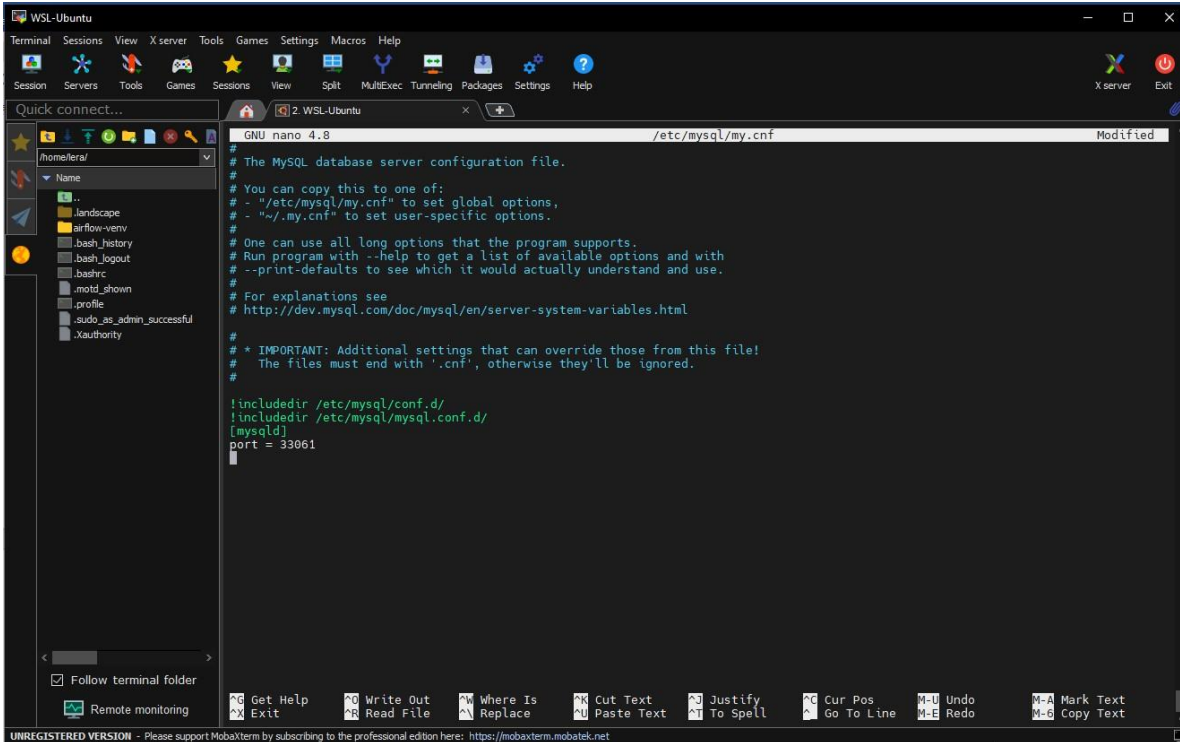


```
reading /usr/share/mecab/dic/ipadic/Others.csv ... 2
reading /usr/share/mecab/dic/ipadic/Noun.nai.csv ... 42
reading /usr/share/mecab/dic/ipadic/Prefix.csv ... 221
reading /usr/share/mecab/dic/ipadic/Noun.org.csv ... 16668
reading /usr/share/mecab/dic/ipadic/Noun.csv ... 60477
reading /usr/share/mecab/dic/ipadic/Symbol.csv ... 208
reading /usr/share/mecab/dic/ipadic/Postp.csv ... 146
reading /usr/share/mecab/dic/ipadic/Noun.adverbial.csv ... 795
reading /usr/share/mecab/dic/ipadic/Adnominal.csv ... 135
reading /usr/share/mecab/dic/ipadic/Interjection.csv ... 252
reading /usr/share/mecab/dic/ipadic/Noun.demonst.csv ... 120
reading /usr/share/mecab/dic/ipadic/Adj.csv ... 27210
reading /usr/share/mecab/dic/ipadic/Verb.csv ... 130750
reading /usr/share/mecab/dic/ipadic/Noun.verbal.csv ... 12146
reading /usr/share/mecab/dic/ipadic/Noun.advj.csv ... 3328
emitting double-array: 100% |#####|
reading /usr/share/mecab/dic/ipadic/matrix.def ... 1316x1316
emitting matrix : 100% |#####|
done!
update-alternatives: using /var/lib/mecab/dic/ipadic-utf8 to provide /var/lib/mecab/dic/debian (mecab-dictionary) in auto mode
Setting up libhtml-parser-perl (3.72-5) ...
Setting up libhttp-message-perl (6.22-1) ...
Setting up mysql-server-8.0 (8.0.39-0ubuntu0.20.04.1) ...
invoke-rc.d: could not determine current runlevel
* Stopping MySQL database server mysqld
update-alternatives: using /etc/mysql/mysql.cnf to provide /etc/mysql/my.cnf (my.cnf) in auto mode
Renaming removed key buffer and mysam-recover options (if present)
mysqld will log errors to /var/log/mysql/error.log
mysqld is running as pid 1015
Created symlink /etc/systemd/system/multi-user.target.wants/mysql.service → /lib/systemd/system/mysql.service.
invoke-rc.d: could not determine current runlevel
Setting up libcgil-pm-perl (4.46-1) ...
Setting up libhtml-template-perl (2.97-1) ...
Setting up mysql-server (8.0.39-0ubuntu0.20.04.1) ...
Setting up libcgi-fast-perl (1:2.15-1) ...
Processing triggers for systemd (245.4-4ubuntu3.11) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
(airflow-venv) root@DESKTOP-KF2T867:/home/lera# sudo /etc/init.d/mysql start
* Starting MySQL database server mysqld
su: warning: cannot change directory to /nonexistent: No such file or directory
(airflow-venv) root@DESKTOP-KF2T867:/home/lera# sudo mysql_secure_installation
```


4.4. `sudo mysql -u root -p` - заходим в программу Mysql

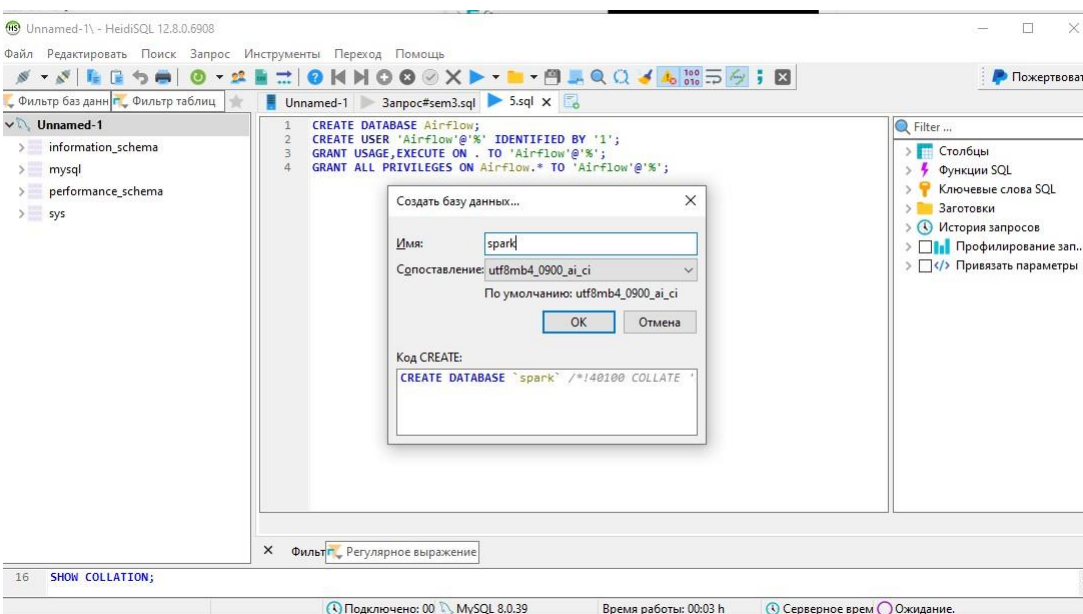
4.5. `ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY '1';`
строка выше установит пароль "1", затем выходим командой `exit`

4.6. `sudo nano /etc/mysql/my.cnf` - данный файл надо подредактировать добавив строчки:
[mysqld]
port = 33061 и сохраняем изменения в файле (Ctrl+X -> Y -> Enter)

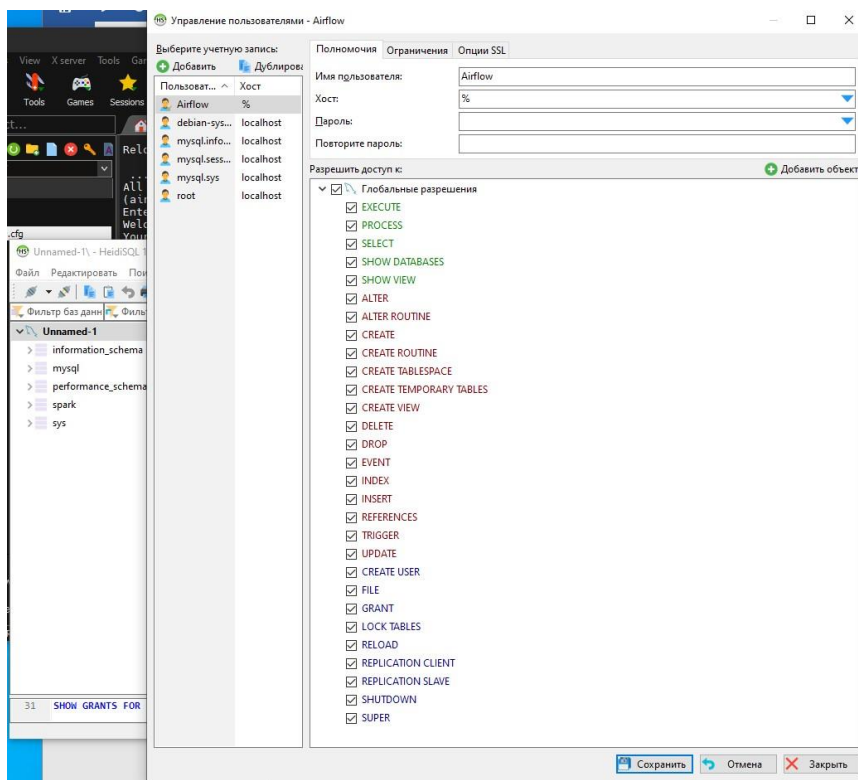
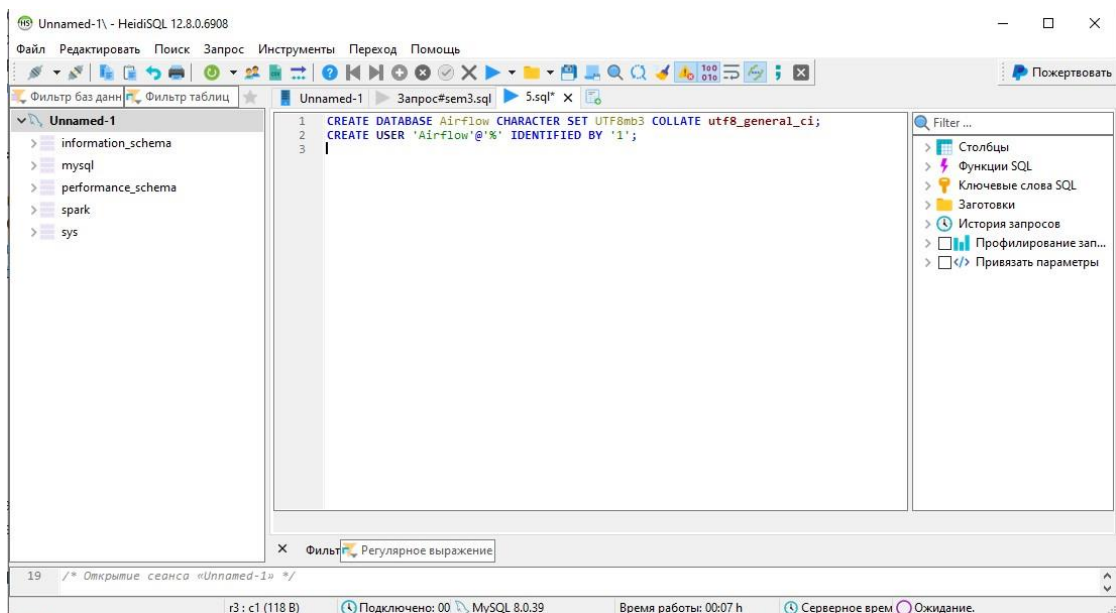


4.7. `sudo service mysql restart` - перезапускаем Mysql

4.8. заходим в MySQL оболочку через программу HeidiSQL и создаем базу данных "spark":



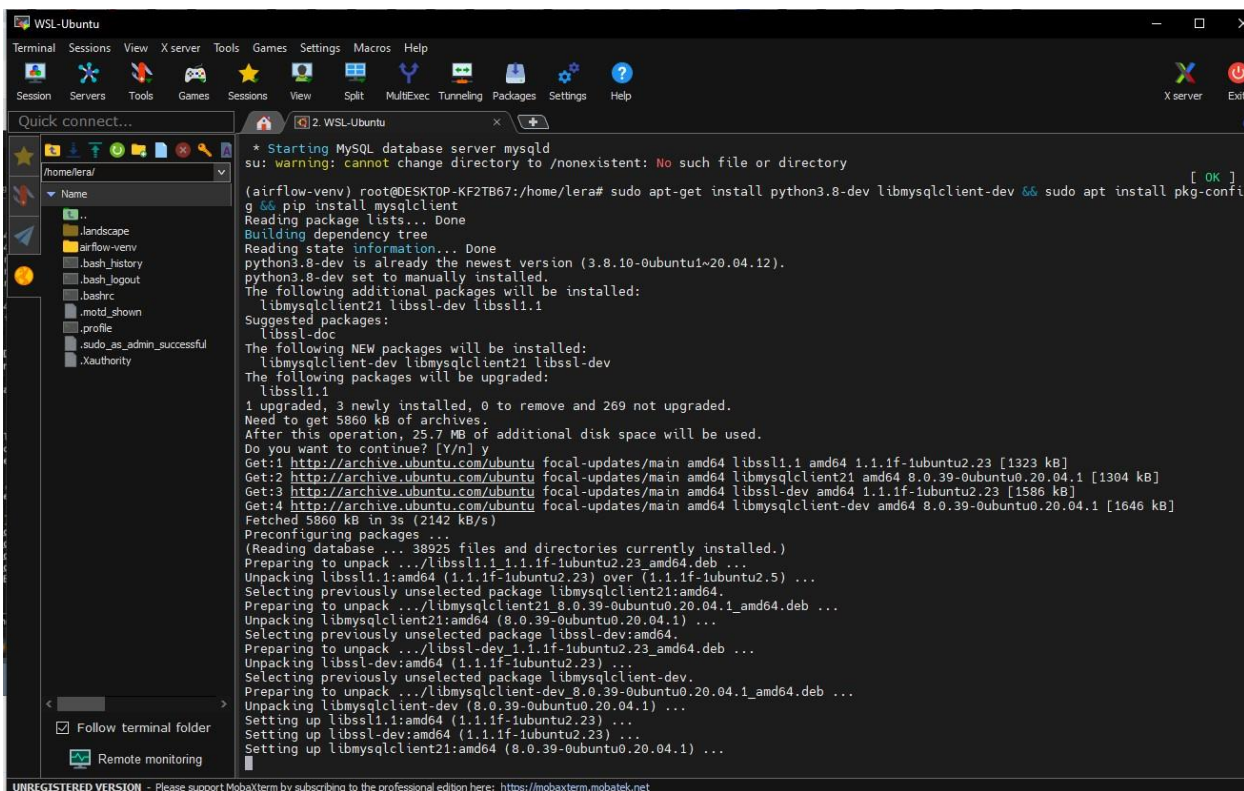
4.9 Сделаем SQL-запрос: `CREATE DATABASE Airflow CHARACTER SET UTF8mb3 COLLATE utf8_general_ci;`
`CREATE USER 'Airflow'@'%' IDENTIFIED BY '1';` - в результате появится база данных Airflow, затем заходим в пользователей и выдаем пользователю Airflow все права доступа.



5 Продолжаем работать с установкой программы AirFlow

5.1 apt-get install python3.8-dev libmysqlclient-dev && sudo apt install pkg-config && pip install mysqlclient - устанавливаем библиотеки:

- pip install python3.8 - установит дополнительно питон нужной версии
- pip install pkg-config - установит дополнительную библиотеку
- pip install mysqlclient - установит нужный mysqlclient



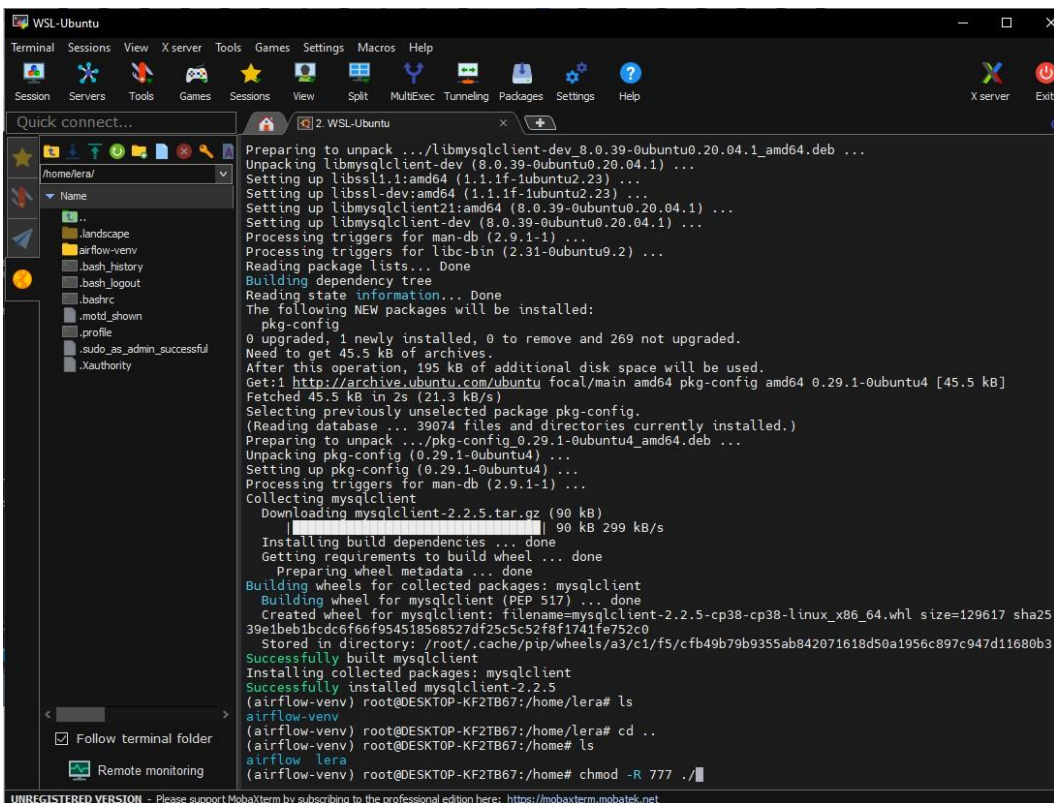
```
WSL-Ubuntu
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...
* Starting MySQL database server mysqld
su: warning: cannot change directory to /nonexistent: No such file or directory

(home/lera) root@DESKTOP-KF2TB67:/home/lera# sudo apt-get install python3.8-dev libmysqlclient-dev
g 66 pip install mysqlclient
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3.8-dev is already the newest version (3.8.10-0ubuntu1~20.04.12).
python3.8-dev set to manually installed.
The following additional packages will be installed:
  libmysqlclient21 libssl-dev libssl1.1
Suggested packages:
  libssl-doc
The following NEW packages will be installed:
  libmysqlclient-dev libmysqlclient21 libssl-dev
The following packages will be upgraded:
  libssl1.1
1 upgraded, 3 newly installed, 0 to remove and 269 not upgraded.
Need to get 5860 kB of archives.
After this operation, 25.7 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libssl1.1 amd64 1.1.1f-1ubuntu2.23 [1323 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libmysqlclient21 amd64 8.0.39-0ubuntu0.20.04.1 [1304 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libssl-dev amd64 1.1.1f-1ubuntu2.23 [1586 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 libmysqlclient-dev amd64 8.0.39-0ubuntu0.20.04.1 [1646 kB]
Fetched 5860 kB in 3s (2142 kB/s)
Preconfiguring packages ...
(Reading database ... 38925 files and directories currently installed.)
Preparing to unpack .../libssl1.1_1.1.1f-1ubuntu2.23_amd64.deb ...
Unpacking libssl1.1:amd64 (1.1.1f-1ubuntu2.23) over (1.1.1f-1ubuntu2.5) ...
Selecting previously unselected package libmysqlclient21:amd64.
Preparing to unpack .../libmysqlclient21_8.0.39-0ubuntu0.20.04.1_amd64.deb ...
Unpacking libmysqlclient21:amd64 (8.0.39-0ubuntu0.20.04.1) ...
Selecting previously unselected package libssl-dev:amd64.
Preparing to unpack .../libssl-dev_1.1.1f-1ubuntu2.23_amd64.deb ...
Unpacking libssl-dev:amd64 (1.1.1f-1ubuntu2.23) ...
Selecting previously unselected package libmysqlclient-dev.
Preparing to unpack .../libmysqlclient-dev_8.0.39-0ubuntu0.20.04.1_amd64.deb ...
Unpacking libmysqlclient-dev (8.0.39-0ubuntu0.20.04.1) ...
Setting up libssl1.1:amd64 (1.1.1f-1ubuntu2.23) ...
Setting up libssl-dev:amd64 (1.1.1f-1ubuntu2.23) ...
Setting up libmysqlclient21:amd64 (8.0.39-0ubuntu0.20.04.1) ...
Setting up libmysqlclient-dev (8.0.39-0ubuntu0.20.04.1) ...

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```

5.2. chmod -R 777 ./ - выполняем команду, затем снова делаем пробный запуск airflow



```
WSL-Ubuntu
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...
2 WSL-Ubuntu
Preparing to unpack .../libmysqlclient-dev_8.0.39-0ubuntu0.20.04.1_amd64.deb ...
Unpacking libmysqlclient-dev (8.0.39-0ubuntu0.20.04.1) ...
Setting up libssl1.1:amd64 (1.1.1f-1ubuntu2.23) ...
Setting up libssl-dev:amd64 (1.1.1f-1ubuntu2.23) ...
Setting up libmysqlclient21:amd64 (8.0.39-0ubuntu0.20.04.1) ...
Setting up libmysqlclient-dev (8.0.39-0ubuntu0.20.04.1) ...
Processing triggers for man-db (2.9.1-1) ...
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  pkg-config
0 upgraded, 1 newly installed, 0 to remove and 269 not upgraded.
Need to get 45.5 kB of archives.
After this operation, 195 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 pkg-config amd64 0.29.1-0ubuntu4 [45.5 kB]
Fetched 45.5 kB in 2s (21.3 kB/s)
Selecting previously unselected package pkg-config.
(Reading database ... 39074 files and directories currently installed.)
Preparing to unpack .../pkg-config_0.29.1-0ubuntu4_amd64.deb ...
Unpacking pkg-config (0.29.1-0ubuntu4) ...
Setting up pkg-config (0.29.1-0ubuntu4) ...
Processing triggers for man-db (2.9.1-1) ...
Collecting mysqlclient
  Downloading mysqlclient-2.2.5.tar.gz (90 kB)
    | 90 kB 299 kB/s
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing wheel metadata ... done
Building wheels for collected packages: mysqlclient
  Building wheel for mysqlclient (PEP 517) ... done
  Created wheel for mysqlclient: filename=mysqlclient-2.2.5-cp38-cp38-linux_x86_64.whl size=129617 sha256=39e1beb1bcd6f66f954518568527df25c5c52f8f1741fe752c0
  Stored in directory: /root/.cache/pip/wheels/a3/c1/fs/cfb49b79b9355ab842071618d50a1956c897c947d11680b3
Successfully built mysqlclient
Installing collected packages: mysqlclient
Successfully installed mysqlclient-2.2.5
(airflow-venv) root@DESKTOP-KF2TB67:/home/lera# ls
(airflow-venv) root@DESKTOP-KF2TB67:/home/lera# cd ..
(airflow-venv) root@DESKTOP-KF2TB67:/home# ls
airflow lera
(airflow-venv) root@DESKTOP-KF2TB67:/home# chmod -R 777 ./

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net
```

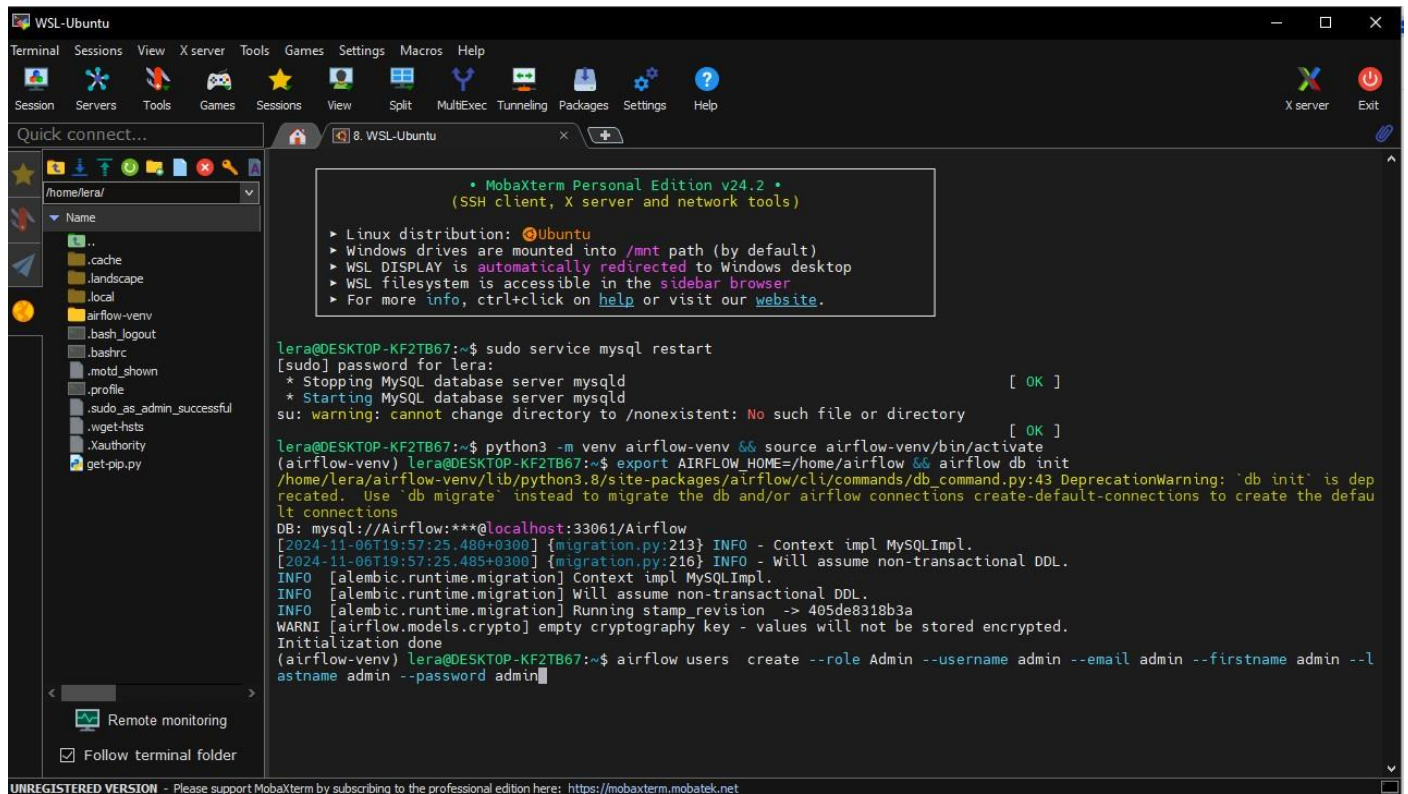
5.2.1. Появилась папка "airflow" там есть файл airflow.cfg который, мы должны заменить нашим файлом airflow.cfg

5.2.2. В каталоге "/home/airflow/" создаем папку "dags"

5.2.3. export AIRFLOW_HOME=/home/airflow && airflow db init - делаем повторную инициализацию. Выдает ошибку.

5.3 Выключаем wsl (wsl shutdown.bat) и затем запускаем заново.

5.4 Снова инициализируем виртуальную среду и инициализируем airflow



```
WSL-Ubuntu
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

/home/lera/
Name
...
.cache
.landscap
.local
.airflow-venv
.bash_logout
.bashrc
.motd_shown
.profile
.sudo_as_admin_successful
.wget-hsts
.Xauthority
.get-pip.py

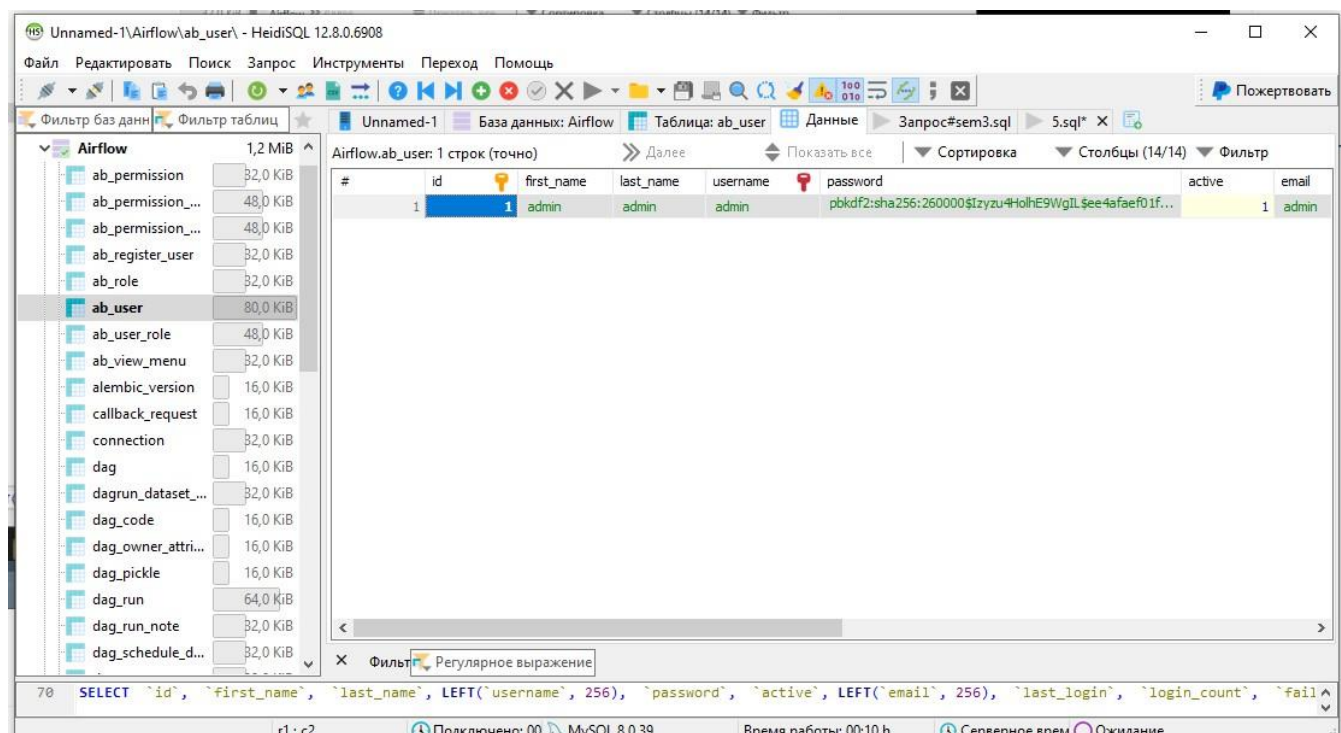
MobaXterm Personal Edition v24.2
(SSH client, X server and network tools)

Linux distribution: Ubuntu
Windows drives are mounted into /mnt path (by default)
WSL DISPLAY is automatically redirected to Windows desktop
WSL filesystem is accessible in the sidebar browser
For more info, ctrl+click on help or visit our website.

lera@DESKTOP-KF2TB67:~$ sudo service mysql restart
[sudo] password for lera:
* Stopping MySQL database server mysqld [ OK ]
* Starting MySQL database server mysqld
su: warning: cannot change directory to /nonexistent: No such file or directory [ OK ]

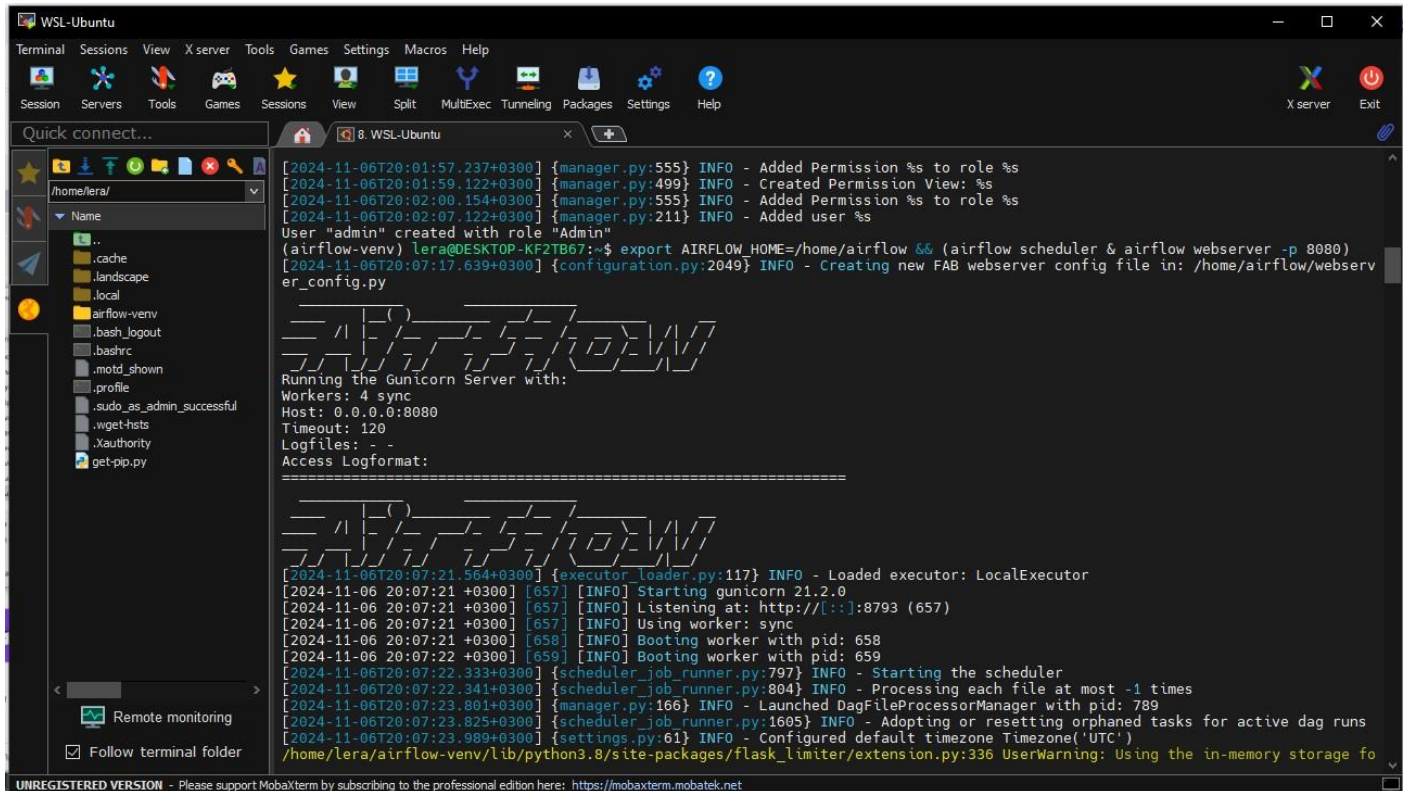
lera@DESKTOP-KF2TB67:~$ python3 -m venv airflow-venv && source airflow-venv/bin/activate
(airflow-venv) lera@DESKTOP-KF2TB67:~$ export AIRFLOW_HOME=/home/airflow && airflow db init
/home/lera/airflow-venv/lib/python3.8/site-packages/airflow/cli/commands/db_command.py:43 DeprecationWarning: 'db init' is deprecated. Use 'db migrate' instead to migrate the db and/or airflow connections create-default-connections to create the default connections
DB: mysql://Airflow:***@localhost:33061/Airflow
[2024-11-06T19:57:25.480+0300] {migration.py:213} INFO - Context impl MySQLImpl.
[2024-11-06T19:57:25.485+0300] {migration.py:216} INFO - Will assume non-transactional DDL.
INFO [alembic.runtime.migration] Context impl MySQLImpl.
INFO [alembic.runtime.migration] Will assume non-transactional DDL.
INFO [alembic.runtime.migration] Running stamp revision -> 405de8318b3a
WARN! [airflow.models.crypto] empty cryptography key - values will not be stored encrypted.
Initialization done
(airflow-venv) lera@DESKTOP-KF2TB67:~$ airflow users create --role Admin --username admin --email admin --firstname admin --l
astname admin --password admin
```

5.5. airflow users create --role Admin --username admin --email admin --firstname admin --lastname admin --password admin - данной командой создаём пользователя для airflow



#	id	first_name	last_name	username	password	active	email
1	1	admin	admin	admin	pbkdf2:sha256:260000\$Izyzu4HohE9WgIL\$ee4faef01f...	1	admin

5.6 export AIRFLOW_HOME=/home/airflow && (airflow scheduler & airflow webserver -p 8080) - данной командой запускаем сервер airflow



```
WSL-Ubuntu
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

Quick connect...
/home/lera/
Name
..
.cache
.landscape
.local
airflow-venv
.bash_logout
.bashrc
.motd_shown
.profile
.sudo_as_admin_successful
.wget-hsts
.Xauthority
get-pip.py

Remote monitoring
Follow terminal folder

[2024-11-06T20:01:57.237+0300] {manager.py:555} INFO - Added Permission %s to role %s
[2024-11-06T20:01:59.122+0300] {manager.py:499} INFO - Created Permission View: %s
[2024-11-06T20:02:00.154+0300] {manager.py:555} INFO - Added Permission %s to role %s
[2024-11-06T20:02:07.122+0300] {manager.py:211} INFO - Added user %s
User "admin" created with role "Admin"
(airflow-venv) lera@DESKTOP-KF2TB67:~$ export AIRFLOW_HOME=/home/airflow && (airflow scheduler & airflow webserver -p 8080)
[2024-11-06T20:07:17.639+0300] {configuration.py:2049} INFO - Creating new FAB webserver config file in: /home/airflow/webserver_config.py

AIRFLOW

Running the Gunicorn Server with:
Workers: 4 sync
Host: 0.0.0.0:8080
Timeout: 120
Logfiles: - -
Access Logformat:

AIRFLOW

[2024-11-06T20:07:21.564+0300] {executor_loader.py:117} INFO - Loaded executor: LocalExecutor
[2024-11-06 20:07:21 +0300] [657] [INFO] Starting gunicorn 21.2.0
[2024-11-06 20:07:21 +0300] [657] [INFO] Listening at: http://[::]:8793 (657)
[2024-11-06 20:07:21 +0300] [657] [INFO] Using worker: sync
[2024-11-06 20:07:21 +0300] [658] [INFO] Booting worker with pid: 658
[2024-11-06 20:07:22 +0300] [659] [INFO] Booting worker with pid: 659
[2024-11-06T20:07:22.333+0300] {scheduler_job_runner.py:797} INFO - Starting the scheduler
[2024-11-06T20:07:22.341+0300] {scheduler_job_runner.py:804} INFO - Processing each file at most -1 times
[2024-11-06T20:07:23.801+0300] {manager.py:166} INFO - Launched DagFileProcessorManager with pid: 789
[2024-11-06T20:07:23.825+0300] {scheduler_job_runner.py:1605} INFO - Adopting or resetting orphaned tasks for active dag runs
[2024-11-06T20:07:23.989+0300] {settings.py:61} INFO - Configured default timezone Timezone('UTC')
/home/lera/airflow-venv/lib/python3.8/site-packages/flask_limiter/extension.py:336 UserWarning: Using the in-memory storage fo
```

Для подключения к серверу airflow в адресной строке браузера вводим localhost:8080 в результате чего появляется админ сайт airflow - логин/пароль: admin

Мы установили и запустили AirFlow в Windows 10 с помощью WSL

