

CS 203: Software Tools and Techniques for AI

Lab 3

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GitHub Repository - <https://github.com/HarinarayanJ/CS203-Lab3>

Task 1

Explanations:

history - Shows the command history.

history -c && history -w - Clears the history memory and writes to the bash.

sudo apt list | grep -i python3.10 - Check for installed versions for python3.10

lynx <https://www.python.org/downloads/source> - Terminal based web browser to open the link.

gzip -d Python-3.10.15.tgz - Uncompresses initial layer of compression.

tar -xf Python-3.10.15.tar - Uncompresses final layer of compression.

wget opendss.org/source/openssl-1.1.1t.tar.gz - Download the file.

gzip -d openssl-1.1.1t.tar.gz - Uncompresses initial layer of compression.

tar -xf openssl-1.1.1t.tar - Uncompresses final layer of compression.

./Configure --prefix=\$HOME/os --openssldir=\$HOME/os shared zlib - Initial Configure.

cd openssl-1.1.1t - Changes directory

./Configure --prefix=\$HOME/os --openssldir=\$HOME/os shared zlib - Initial Configure.

./Configure --prefix=\$HOME/os --openssldir=\$HOME/os shared zlib gcc - Initial Configure, setting system as GCC.

./config --prefix=\$HOME/os --openssldir=\$HOME/os shared zlib - Final Configure. Enabling shared libssl.so.

vim Makefile - Speed up the compilation.

make -j2 - Compile the application.

make install -j10 - Install the compiled application

vim ~/.bashrc - Edit the path variables.

source ~/.bashrc - Update the path variables.

echo "\$LD_LIBRARY_PATH" - Verification.

echo "\$PATH" - Verification.

export CFLAGS="-I\$HOME/os/include" - Setting compiler flags.

echo "\$CFLAGS" - Verification.

export LDFLAGS="-L\$HOME/os/lib" - Setting link flags.

echo "\$LDFLAGS" - Verification.

ls - List directories.

ls /Home/user1/os - List directories.
ls /Home/user1 - List directories.
ls /home/user1 - List directories.
ls /home/user1/0s - List directories.
ls /home/user1/os/lib - List directories.
cd Python-3.10.15/ - Change directory.
cd - Change directory.
cd Python-3.10.15/ - Change directory.
./configure --prefix=\$HOME/python3.10 --with-openssl=\$HOME/os - Configure.
vim Makefile - Speed up the compilation.
make - j2 - Compile the application
make install -j20 - Install the compiled application
vim /.bashrc - Edit the path variables.
source /.bashrc - Update the path variables.
label-studio - Trying to start label studio.
python3.10 -m ensurepip - Installing pip
python3.10 -m pip install --upgrade pip - Updating pip
python3.10 -m pip install venv label-studio - Trying to install venv and label-studio packages.
python3.10 -m pip install label-studio - Installing label-studio package.
label-studio - Running label-studio

Screenshots:

```
user1@linux:~$ ls
a.py app.py app_.py
user1@linux:~$ history
  1  ls
  2  history
user1@linux:~$ history -c && history -w
user1@linux:~$ history
  1  history
user1@linux:~$ sudo apt list | grep -i python3.10
[sudo] password for user1:
WARNING: apt does not have a stable CLI interface. Use with caution in scripts.
```

```
user1@linux:~/lab3$ lynx https://www.python.org/downloads/source_
```

```
user1@linux:~/lab3$ gzip -d Python-3.10.15.tgz
user1@linux:~/lab3$ tar -xf Python-3.10.15.tar
```

```

user1@linux:~/lab3$ gzip -d Python-3.10.15.tgz
user1@linux:~/lab3$ tar -xvf Python-3.10.15.tar
user1@linux:~/lab3$ wget openssl.org/source/openssl-1.1.1t-tar.gz
URL transformed to HTTPS due to an HSTS policy
--2025-01-26 18:19:41-- https://openssl.org/source/openssl-1.1.1t-tar.gz
Resolving openssl.org (openssl.org)... 34.49.79.89, 2600:1901:0:d50b::
Connecting to openssl.org (openssl.org)[34.49.79.89]:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://github.com/openssl/openssl/releases/download/OpenSSL_1_1_1t/openssl-1.1.1t-tar.gz [following]
--2025-01-26 18:19:42-- https://github.com/openssl/openssl/releases/download/OpenSSL_1_1_1t/openssl-1.1.1t-tar.gz
Resolving github.com (github.com)... 20.205.243.166
Connecting to github.com (github.com)[20.205.243.166]:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/7634677/d7446444-0f18-4771-85f3-2083574c7934?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250126%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250126T181943Z&X-Amz-Expires=300&X-Amz-Signature=fc083f10b5b93e88bbef3b105e8ff6175f58580bb1edd256256baa5c7643fc32&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dopenssl-1.1.1t-tar.gz&response-content-type=application%2Foctet-stream [following]
--2025-01-26 18:19:43-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/7634677/d7446444-0f18-4771-85f3-2083574c7934?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250126%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20250126T181943Z&X-Amz-Expires=300&X-Amz-Signature=fc083f10b5b93e88bbef3b105e8ff6175f58580bb1edd256256baa5c7643fc32&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3Dopenssl-1.1.1t-tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.111.133, ...
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)[185.199.108.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 9881866 (9.4M) [application/octet-stream]
Saving to: 'openssl-1.1.1t-tar.gz'

openssl-1.1.1t-tar.gz      100%[=====] 9.42M  5.79MB/s  in 1.6s

2025-01-26 18:19:46 (5.79 MB/s) - 'openssl-1.1.1t-tar.gz' saved [9881866/9881866]

user1@linux:~/lab3$ gzip -d openssl-1.1.1t-tar.gz
user1@linux:~/lab3$ tar -xvf openssl-1.1.1t-tar
user1@linux:~/lab3$ cd openssl
-bash: cd: openssl: No such file or directory
user1@linux:~/lab3$ cd openssl-1.1.1t

```

```

user1@linux:~/lab3/openssl-1.1.1t$ ./Configure --prefix=$HOME/os --openssldir=$HOME/os shared zlib gcc
Configuring OpenSSL version 1.1.1t (0x1010114fL) for gcc
Using os-specific seed configuration
Creating configdata.pm
Creating Makefile

```

The library could not be configured for supporting multi-threaded applications as the compiler options required on this system are not known. See file INSTALL for details if you need multi-threading.

The options 'shared', 'pic' and 'dynamic-engine' aren't supported on this platform, so we will pretend you gave the option 'no-pic', which also disables 'shared' and 'dynamic-engine'. If you know how to implement shared libraries or position independent code, please let us know (but please first make sure you have tried with a current version of OpenSSL).

```

*****
***
***   OpenSSL has been successfully configured   ***
***
***   If you encounter a problem while building, please open an ***
***   issue on GitHub <https://github.com/openssl/openssl/issues> ***
***   and include the output from the following command: ***
***
***       perl configdata.pm --dump ***
***
***   (If you are new to OpenSSL, you might want to consult the ***
***   'Troubleshooting' section in the INSTALL file first) ***
***
*****

```

```

user1@linux:~/lab3/openssl-1.1.1t$ vim Makefile

```

```

CFLAGS=-Wall -O0
CXXFLAGS=-Wall -G0

```

```

user1@linux:~/lab3/openssl-1.1.1t$ make -j50_

```

```

user1@linux:~/lab3/openssl-1.1.1t$ make install -j50_

```

```

user1@linux:~/Python-3.10.15$ vim Makefile

```

```

# Compiler options
OPT=          -DNDEBUG -g -fwrapv -O0 -g0 -Wall

user1@linux:~/Python-3.10.15$ make install -j11

user1@linux:~/Python-3.10.15$ vim ~/.bashrc
export PATH=$HOME/os/bin:$HOME/python3.10/bin:$PATH
"~/.bashrc" 121L, 3878B written
user1@linux:~/Python-3.10.15$ source ~/.bashrc

user1@linux:~/Python-3.10.15$ source ~/.bashrc
user1@linux:~/Python-3.10.15$ label-studio
-bash: label-studio: command not found
user1@linux:~/Python-3.10.15$ python3.10 -m ensurepip_

user1@linux:~/Python-3.10.15$ python3.10 -m pip install --upgrade pip

user1@linux:~/Python-3.10.15$ python3.10 -m pip install venv label-studio
ERROR: Could not find a version that satisfies the requirement venv (from versions: none)
ERROR: No matching distribution found for venv
user1@linux:~/Python-3.10.15$ python3.10 -m pip install label-studio

Starting new HTTPS connection (1): pypi.org:443
https://pypi.org:443 "GET /pypi/label-studio/json HTTP/1.1" 200 33651
Initializing database..

```

History after all the commands:

```
wget openssl.org/source/openssl-1.1.1t.tar.gz
gzip -d openssl-1.1.1t.tar.gz
tar -xf openssl-1.1.1t.tar
./Configure --prefix=$HOME/os --openssldir=$HOME/os shared zlib
./C
ls
cd os
cd openssl
cd openssl-1.1.1t
./Configure --prefix=$HOME/os --openssldir=$HOME/os shared zlib
./Configure --prefix=$HOME/os --openssldir=$HOME/os shared zlib gcc
./config --prefix=$HOME/os --openssldir=$HOME/os shared zlib
vim Makefile
make -j2
make install -j10
vim ~/.bashrc
source ~/.bashrc
echo "$LD_LIBRARY_PATH"
echo "$PATH"
export CFLAGS="-I$HOME/os/include"
echo "$CFLAGS"
export LDFLAGS="-L$HOME/os/lib"
echo "$LDFLAGS"
ls
ls /Home/user1/os
ls /Home/user1
ls /home/user1
ls /home/user1/os
ls /home/user1/os/lib
cd Python-3.10.15/
cd
cd Python-3.10.15/
./configure --prefix=$HOME/python3.10 --with-openssl=$HOME/os
vim Makefile
make -j2
make install -j20
vim ~/.bashrc
source ~/.bashrc
```

```
label-studio
python3.10 -m ensurepip
python3.10 -m pip install --upgrade pip
python3.10 pip install venv label-studio
python3.10-m pip install venv label-studio
python3.10 -m pip install venv label-studio
python3.10 -m pip install label-studio
label-studio
```

Task 2:

The group members annotated two samples for the NLP and CV tasks, Vivek Raj (23110362) helped us with the third sample for CV.

Task 3:

Self-explanatory IPYNB files with proper comments.