

LAB 03 STT AI

Group 07

Team members:

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Task - 1

1. Clearing history

```
Ubuntu 24.04.1 LTS server tty1
server login: soham
Password:
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-51-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

soham@server:~$ history -c && history -w
soham@server:~$
```

2. Deleting python 3.12.3

sudo apt remove python3: Remove the Python 3 package from the system.

```
soham@server:~$ python3 --version
Python 3.12.3
soham@server:~$ sudo apt remove python3_
```

```
Removing python3-jwt (2.7.0-1) ...
Removing python3-lazr.uri (1.0.6-3) ...
Removing python3-pkg-resources (68.1.2-2ubuntu1.1) ...
Removing python3-pyparsing (3.1.1-1) ...
Removing python3-six (1.16.0-4) ...
Removing python3-urllib3 (2.0.7-1ubuntu0.1) ...
Removing python3-yaml (6.0.1-2build2) ...
Removing python3 (3.12.3-0ubuntu2) ...
Processing triggers for dbus (1.14.10-4ubuntu4.1) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
soham@server:~$
```

Sudo apt autoremove: Remove unnecessary packages that were installed as dependencies.

```
soham@server:~$ sudo apt autoremove
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  apport-symptoms appstream distro-info-data eatmydata fdisk gdisk gir1.2-girepository-2.0 glib2.0 gir1.2-glib-2.0
  iproute2 iso-codes libappstream5 libatm1t64 libcap2-bin libcurl3t64-gnutls libeatmydata1 libgstreamer1.0-0 libinih1 libmnl0 libnetplan1 libpackagekit-glib2-18 libpam-cap libpython3.12
  libxmlb2 libxtables12 libyaml-0-2 netplan-generator packagekit packagekit-tools pciutils python3 python3.12 python3.12-minimal usbutils wget
0 upgraded, 0 newly installed, 47 to remove and 45 not upgraded.
After this operation, 96.3 MB disk space will be freed.
Do you want to continue? [Y/n] Y_
```

3.Installing wget – used for downloading from the internet

```
soham@server:~$ sudo apt install wget_
```

```
The following NEW packages will be installed:
  wget
0 upgraded, 1 newly installed, 0 to remove and 45 not upgraded.
Need to get 334 kB of archives.
After this operation, 938 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 wget amd64 1.21.4-1ubuntu1 [334 kB]
Fetched 334 kB in 2s (180 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package wget.
(Reading database ... 65891 files and directories currently installed.)
Preparing to unpack .../wget_1.21.4-1ubuntu1_amd64.deb ...
Unpacking wget (1.21.4-1ubuntu1) ...
Setting up wget (1.21.4-1ubuntu1) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Running kernel seems to be up-to-date.

Restarting services...

Service restarts being deferred:
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
soham @ session #1: login[1132]
soham @ user manager service: systemd[1227]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
soham@server:~$
```

```
#####
```

Method for downloading, extracting and setting up libraries

wget {link_to_downloading_library_source_tarball} -> Downloads library source tarball.

tar -xvf {library_name} ->Extracts the tarball

cd {library_name} -> Change directory

./configure --prefix=\$HOME/local -> Configures library for installation in ~/local

make -j\$(nproc) -> Compiling library

make install -> Installs library to the specified directory

#####

4. Creating directories for saving libraries and setting up python

mkdir : make directory

wget : download the Python 3.10.16 source tarball.

```
soham@server:~$ python3 --version
-bash: /usr/bin/python3: No such file or directory
soham@server:~$ mkdir ~/libraries ~/local
soham@server:~$ cd ~/libraries
soham@server:~/libraries$ wget https://www.python.org/ftp/python/3.10.16/Python-3.10.16.tgz
--2025-01-26 07:33:26-- https://www.python.org/ftp/python/3.10.16/Python-3.10.16.tgz
Resolving www.python.org (www.python.org)... 151.101.0.223, 151.101.64.223, 151.101.128.223, ...
Connecting to www.python.org (www.python.org)|151.101.0.223|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 25942994 (25M) [application/octet-stream]
Saving to: 'Python-3.10.16.tgz'

Python-3.10.16.tgz          100%[=====]
2025-01-26 07:33:28 (18.8 MB/s) - 'Python-3.10.16.tgz' saved [25942994/25942994]

soham@server:~/libraries$ _
```

tar -xvf :extract the contents of the downloaded Python tarball.

```
soham@server:~/libraries$ tar -xvf Python-3.10.16.tgz
```

```

Python-3.10.16/Tools/stringbench/stringbench.py
Python-3.10.16/Tools/test2to3/
Python-3.10.16/Tools/test2to3/README
Python-3.10.16/Tools/test2to3/maintest.py
Python-3.10.16/Tools/test2to3/setup.py
Python-3.10.16/Tools/test2to3/test/
Python-3.10.16/Tools/test2to3/test/runtests.py
Python-3.10.16/Tools/test2to3/test/test_foo.py
Python-3.10.16/Tools/test2to3/test2to3/
Python-3.10.16/Tools/test2to3/test2to3/__init__.py
Python-3.10.16/Tools/test2to3/test2to3/hello.py
Python-3.10.16/Tools/tz/
Python-3.10.16/Tools/tz/zdump.py
Python-3.10.16/Tools/unicode/
Python-3.10.16/Tools/unicode/Makefile
Python-3.10.16/Tools/unicode/comparecodecs.py
Python-3.10.16/Tools/unicode/genjckcodecs.py
Python-3.10.16/Tools/unicode/gencodec.py
Python-3.10.16/Tools/unicode/genmap_japanese.py
Python-3.10.16/Tools/unicode/genmap_korean.py
Python-3.10.16/Tools/unicode/genmap_schinese.py
Python-3.10.16/Tools/unicode/genmap_support.py
Python-3.10.16/Tools/unicode/genwincodec.py
Python-3.10.16/Tools/unicode/genwincodecs.bat
Python-3.10.16/Tools/unicode/listcodecs.py
Python-3.10.16/Tools/unicode/makeunicodedata.py
Python-3.10.16/Tools/unicode/mkstringprep.py
Python-3.10.16/Tools/unicode/python-mappings/
Python-3.10.16/Tools/unicode/python-mappings/CP1140.TXT
Python-3.10.16/Tools/unicode/python-mappings/CP273.TXT
Python-3.10.16/Tools/unicode/python-mappings/GB2312.TXT
Python-3.10.16/Tools/unicode/python-mappings/KOI8-U.TXT
Python-3.10.16/Tools/unicode/python-mappings/TIS-620.TXT
Python-3.10.16/Tools/unicode/python-mappings/diff/
Python-3.10.16/Tools/unicode/python-mappings/diff/jisx0213-2000-std.txt.diff
Python-3.10.16/Tools/unicode/python-mappings/diff/jisx0213-2004-std.txt.diff
Python-3.10.16/Tools/unicode/python-mappings/gb-18030-2000.xml
Python-3.10.16/Tools/unicode/python-mappings/jisx0213-2004-std.txt
Python-3.10.16/Tools/unittestgui/
Python-3.10.16/Tools/unittestgui/README.txt
Python-3.10.16/Tools/unittestgui/unittestgui.py
Python-3.10.16/aclocal.m4
Python-3.10.16/config.guess
Python-3.10.16/config.sub
Python-3.10.16/configure
Python-3.10.16/configure.ac
Python-3.10.16/install-sh
Python-3.10.16/pyconfig.h.in
Python-3.10.16/setup.py
soham@server:~/libraries$ _

```

./configure : prepare the python source code for installation.

```
soham@server:~/libraries$ ./configure_
```

4.No GCC found error

requires c compiler

```

soham@server:~/libraries/Python-3.10.16$ ./configure
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for python3.10... no
checking for python3... no
checking for python... no
checking for --enable-universalsdk... no
checking for --with-universal-archs... no
checking MACHDEP... "linux"
checking for gcc... no
checking for cc... no
checking for cl.exe... no
configure: error: in `/home/soham/libraries/Python-3.10.16':
configure: error: no acceptable C compiler found in $PATH
See `config.log' for more details
soham@server:~/libraries/Python-3.10.16$ _

```

build-essential : install required packages for building software (compilers, libraries).

```

checking for C1.exe... no
configure: error: in '/home/soham/libraries/Python-3.10.16':
configure: error: no acceptable C compiler found in $PATH
See 'config.log' for more details
soham@server:~/libraries/Python-3.10.16$ sudo apt install build-essential
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu bzip2 cpp cpp-13 cpp-13-x86-64-linux-gnu
  g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan8 libatomic1 libbinutils libbrotli1
  libfile-fcntllock-perl libgcc-13-dev libgomp1 libgprofng0 libhwasan0 libisl23 libitm1 libjansson4
  liblsan0 libubsan1 lto-disabled-list make patch
Suggested packages:
  binutils-doc gprofng-gui bzip2-doc cpp-doc gcc-13-locales cpp-13-doc debian-keyring glibc-doc
  libtool flex bison gdb gcc-doc gcc-13-multilib gdb-x86-64-linux-gnu git bzr libstdc++6
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential bzip2 cpp cpp-13 cpp-13-x86-64-linux-gnu
  g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu
  libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan8 libatomic1 libbinutils libbrotli1
  libfile-fcntllock-perl libgcc-13-dev libgomp1 libgprofng0 libhwasan0 libisl23 libitm1 libjansson4
  liblsan0 libubsan1 lto-disabled-list make patch
0 upgraded, 49 newly installed, 0 to remove and 45 not upgraded.
Need to get 67.0 MB of archives.
After this operation, 229 MB of additional disk space will be used.
Do you want to continue? [Y/n] _

```

on configuring again – error is resolved

```

checking for --with-openssl-rpath...
checking whether OpenSSL provides required APIs... no
checking for --with-ssl-default-suites... python
checking for --with-builtin-hashlib-hashes... md5,sha1,sha256,sha512,sha3,blake2
checking for --with-experimental-isolated-subinterpreters... no
checking for --with-static-libpython... yes
checking for --disable-test-modules... no
configure: creating ./config.status
config.status: creating Makefile.pre
config.status: creating Misc/python.pc
config.status: creating Misc/python-embed.pc
config.status: creating Misc/python-config.sh
config.status: creating Modules/ld_so_aix
config.status: creating pyconfig.h
creating Modules/Setup.local
creating Makefile

If you want a release build with all stable optimizations active (PGO, etc),
please run ./configure --enable-optimizations

```

5. OpenSSL source tarball (dependency)

wget :download OpenSSL source tarball

```

soham@server: ~/libraries/Python-3.10.16$ cd ..
soham@server:~/libraries$ wget https://www.openssl.org/source/openssl-1.1.1.w.tar.gz

```

```

soham@server:~/libraries$ wget https://www.openssl.org/source/openssl-1.1.1.w.tar.gz
--2025-01-26 07:41:35-- https://www.openssl.org/source/openssl-1.1.1.w.tar.gz
Resolving www.openssl.org (www.openssl.org)... 34.49.79.89, 2600:1901:0:d50b::
Connecting to www.openssl.org (www.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_1.w/openssl-1.1.1.w.tar.gz [following]
--2025-01-26 07:41:36-- https://github.com/openssl/openssl/releases/download/OpenSSL_1_1_1.w/openssl-1.1.1.w.tar.gz
Resolving github.com (github.com)... 20.207.73.82
Connecting to github.com (github.com)|20.207.73.82|:443... connected.
HTTP request sent, awaiting response... 404 Not Found
2025-01-26 07:41:36 ERROR 404: Not Found.

soham@server:~/libraries$ wget https://www.openssl.org/source/openssl-1.1.1w.tar.gz
--2025-01-26 07:42:20-- https://www.openssl.org/source/openssl-1.1.1w.tar.gz
Resolving www.openssl.org (www.openssl.org)... 34.49.79.89, 2600:1901:0:d50b::
Connecting to www.openssl.org (www.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_1w/openssl-1.1.1w.tar.gz [following]
--2025-01-26 07:42:22-- https://github.com/openssl/openssl/releases/download/OpenSSL_1_1_1w/openssl-1.1.1w.tar.gz
Resolving github.com (github.com)... 20.207.73.82
Connecting to github.com (github.com)|20.207.73.82|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be/7634677/b4c6e1f3-d928-4de0-a502-4A2568X-Amz-Credential=releaseassetproduction%2F20250126%2Fus-east-1%2Fs3%2Faws4_request%26X-Amz-Date=20250126T074222Z%26X-Amz-SignedHeaders=host&response-content-disposition=attachment%3Bresponse-content-type=application%2Foctet-stream [following]
--2025-01-26 07:42:22-- https://objects.githubusercontent.com/github-production-release-asset-2e65be/7634677/b4c6e1f3-d928-4de0-a502-4A2568X-Amz-Credential=releaseassetproduction%2F20250126%2Fus-east-1%2Fs3%2Faws4_request%26X-Amz-Date=20250126T074222Z%26X-Amz-SignedHeaders=host&response-content-disposition=attachment%3Bresponse-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.111.133, 185.199.108.133, 185.199.109.133, 185.199.110.133
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.111.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 9893384 (9.4M) [application/octet-stream]
Saving to: 'openssl-1.1.1w.tar.gz'

openssl-1.1.1w.tar.gz      100%[=====]

2025-01-26 07:42:23 (15.5 MB/s) - 'openssl-1.1.1w.tar.gz' saved [9893384/9893384]

soham@server:~/libraries$ _

```

tar -xvf extract the OpenSSL tarball.

```

Location: https://objects.githubusercontent.com/github-production-release-asset-2e65be
A256&X-Amz-Credential=releaseassetproduction%2F20250126%2Fus-east-1%2Fs3%2Faws4_reques
00c7542a5c340b9d961c7ce2e66f8f6e5d8e69b5436cace04b7302&X-Amz-SignedHeaders=host&respon
sponse-content-type=application%2Foctet-stream [following]
--2025-01-26 07:42:22-- https://objects.githubusercontent.com/github-production-relea
hm=AWS4-HMAC-SHA256&X-Amz-Credential=releaseassetproduction%2F20250126%2Fus-east-1%2Fs
ture=cf3c4cb55b00c7542a5c340b9d961c7ce2e66f8f6e5d8e69b5436cace04b7302&X-Amz-SignedHead
.1.1w.tar.gz&response-content-type=application%2Foctet-stream
Resolving objects.githubusercontent.com (objects.githubusercontent.com)... 185.199.111
Connecting to objects.githubusercontent.com (objects.githubusercontent.com)|185.199.11
HTTP request sent, awaiting response... 200 OK
Length: 9893384 (9.4M) [application/octet-stream]
Saving to: 'openssl-1.1.1w.tar.gz'

openssl-1.1.1w.tar.gz          100%[=====]

2025-01-26 07:42:23 (15.5 MB/s) - 'openssl-1.1.1w.tar.gz' saved [9893384/9893384]

soham@server:~/libraries$ tar -xzf openssl-1.1.1w.tar.gz
soham@server:~/libraries$ cd openssl-1.1.1w
soham@server:~/libraries/openssl-1.1.1w$ ./config --prefix=$HOME/local
Operating system: x86_64-whatever-linux2
Configuring OpenSSL version 1.1.1w (0x1010117fL) for linux-x86_64
Using os-specific seed configuration
Creating configdata.pm
Creating Makefile

*****
***
***   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)       ***
***                                           ***
*****
soham@server:~/libraries/openssl-1.1.1w$

```

6. ERROR – Invalid path configuration

configure Python with custom options and OpenSSL.

```

soham@server:~/libraries/Python-3.10.16$ ./configure --prefix=$HOME/local \--with-openssl=$HOME/local \--with-ensurepip=
FLAGS='-I$HOME/local/include' \PKG_CONFIG_PATH='$HOME/local/lib/pkgconfig' \--enable-optimization
> ^C
soham@server:~/libraries/Python-3.10.16$ ./configure --prefix=$HOME/local \--with-openssl=$HOME/local \--with-ensurepip=
FLAGS='-I$HOME/local/include' \PKG_CONFIG_PATH='$HOME/local/lib/pkgconfig' \--enable-optimization
configure: WARNING: unrecognized options: --enable-optimization
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for python3.10... no
checking for python3... no
checking for python... no
checking for --enable-universalsdk... no
checking for --with-universal-archs... no
checking MACHDEP... "linux"
checking for gcc... gcc
checking whether the C compiler works... no
configure: error: in `/home/soham/libraries/Python-3.10.16':
configure: error: C compiler cannot create executables
See `config.log' for more details
soham@server:~/libraries/Python-3.10.16$

```

```

renaming build/scripts-3.10/2to3 to build/scripts-3.10/2to3-3.10
make[3]: Leaving directory '/home/soham/libraries/Python-3.10.16'
make[2]: Leaving directory '/home/soham/libraries/Python-3.10.16'
touch profile-gen-stamp
make[1]: Leaving directory '/home/soham/libraries/Python-3.10.16'
# Next, run the profile task to generate the profile information.
make run_profile_task
make[1]: Entering directory '/home/soham/libraries/Python-3.10.16'
./python -m test --pgo --timeout=1200 || true
0:00:00 load avg: 5.78 Run tests sequentially (timeout: 20 min)
0:00:00 load avg: 5.78 [ 1/44] test_array
0:00:00 load avg: 5.78 [ 2/44] test_base64
0:00:01 load avg: 5.78 [ 3/44] test_binascii
0:00:01 load avg: 5.78 [ 4/44] test_binop
0:00:01 load avg: 5.78 [ 5/44] test_bisect
0:00:01 load avg: 5.78 [ 6/44] test_bytes
0:00:05 load avg: 5.32 [ 7/44] test_bz2
0:00:05 load avg: 5.32 [ 8/44] test_cmath -- test_bz2 skipped
0:00:05 load avg: 5.32 [ 9/44] test_codecs
0:00:06 load avg: 5.32 [10/44] test_collections
0:00:07 load avg: 5.32 [11/44] test_complex
0:00:08 load avg: 5.32 [12/44] test_dataclasses
0:00:08 load avg: 5.06 [13/44] test_datetime
0:00:13 load avg: 5.06 [14/44] test_decimal
0:00:17 load avg: 4.65 [15/44] test_difflib
0:00:18 load avg: 4.28 [16/44] test_embed
0:00:25 load avg: 4.01 [17/44] test_float
0:00:25 load avg: 4.01 [18/44] test_fstring
0:00:26 load avg: 4.01 [19/44] test_func tools
0:00:27 load avg: 4.01 [20/44] test_generators
0:00:27 load avg: 4.01 [21/44] test_hashlib
0:00:28 load avg: 4.01 [22/44] test_heapq
0:00:29 load avg: 3.77 [23/44] test_int
0:00:29 load avg: 3.77 [24/44] test_itertools
0:00:34 load avg: 3.55 [25/44] test_json
0:00:36 load avg: 3.55 [26/44] test_long
0:00:39 load avg: 3.35 [27/44] test_lzma
0:00:39 load avg: 3.35 [28/44] test_math -- test_lzma skipped
0:00:43 load avg: 3.35 [29/44] test_memoryview
0:00:43 load avg: 3.16 [30/44] test_operator
0:00:44 load avg: 3.16 [31/44] test_ordered_dict
0:00:45 load avg: 3.16 [32/44] test_patma
0:00:46 load avg: 3.16 [33/44] test_pickle
0:00:53 load avg: 2.99 [34/44] test_pprint
0:00:53 load avg: 2.99 [35/44] test_re
0:00:54 load avg: 2.83 [36/44] test_set
0:01:00 load avg: 2.68 [37/44] test_sqlite
0:01:00 load avg: 2.68 [38/44] test_statistics -- test_sqlite skipped
0:01:02 load avg: 2.68 [39/44] test_struct

```

7. Dependencies- Libffi ,sqlite and zlib library required error

```

The necessary bits to build these optional modules were not found:
_bz2                _curses                _curses_panel
_dbm                 _gdbm                  _hashlib
_lzma                _sqlite3                _ssl
_tkinter             _uuid                   nis
readline             zlib

To find the necessary bits, look in setup.py in detect_modules() for the module's name.

The following modules found by detect_modules() in setup.py, have been
built by the Makefile instead, as configured by the Setup files:
_abc                  pwd                    time

Failed to build these modules:
_ctypes

Could not build the ssl module!
Python requires a OpenSSL 1.1.1 or newer

running build_scripts
copying and adjusting /home/soham/libraries/Python-3.10.16/Tools/scripts/pydoc3 -> build/scripts-3.10
copying and adjusting /home/soham/libraries/Python-3.10.16/Tools/scripts/idle3 -> build/scripts-3.10
copying and adjusting /home/soham/libraries/Python-3.10.16/Tools/scripts/2to3 -> build/scripts-3.10
changing mode of build/scripts-3.10/pydoc3 from 664 to 775
changing mode of build/scripts-3.10/idle3 from 664 to 775
changing mode of build/scripts-3.10/2to3 from 664 to 775
renaming build/scripts-3.10/pydoc3 to build/scripts-3.10/pydoc3.10
renaming build/scripts-3.10/idle3 to build/scripts-3.10/idle3.10
renaming build/scripts-3.10/2to3 to build/scripts-3.10/2to3.10
make[1]: Leaving directory '/home/soham/libraries/Python-3.10.16'

```

8. Installing required libraries


```
renaming build/scripts-3.10/ldle3 to build/scripts-3.10/ldle3.10
renaming build/scripts-3.10/2to3 to build/scripts-3.10/2to3-3.10
make[1]: Leaving directory '/home/soham/libraries/Python-3.10.16'
soham@server:~/libraries/Python-3.10.16$ cd ..
soham@server:~/libraries$ wget https://github.com/libffi/libffi/releases/download/v3.4.5/libffi-3.4.5.tar.gz_
```

```
soham@server:~/libraries$ wget https://www.zlib.net/zlib-1.3.1.tar.gz
--2025-01-26 08:02:51-- https://www.zlib.net/zlib-1.3.1.tar.gz
Resolving www.zlib.net (www.zlib.net)... 85.187.148.2
Connecting to www.zlib.net (www.zlib.net)|85.187.148.2|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1512791 (1.4M) [application/x-gzip]
Saving to: 'zlib-1.3.1.tar.gz'

zlib-1.3.1.tar.gz          100%[=====]
2025-01-26 08:02:55 (679 KB/s) - 'zlib-1.3.1.tar.gz' saved [1512791/1512791]

soham@server:~/libraries$
```

9. Configure Python with custom options and OpenSSL. And Add OpenSSL binary directory to the system PATH.

```
soham@server:~/libraries/zlib-1.3.1$ cd ..
soham@server:~/libraries$ cd Python-3.10.16
soham@server:~/libraries/Python-3.10.16$ ./configure --prefix=$HOME/local \--with-openssl=$HOME/local \--with-ensurepip=
FLAGS=-I$HOME/local/include' \PKG_CONFIG_PATH=$HOME/local/lib/pkgconfig' \--enable-optimization
configure: WARNING: unrecognized options: --enable-optimization
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking for python3.10... no
checking for python3... no
checking for python... no
checking for --enable-universalsdk... no
checking for --with-universal-archs... no
checking MACHDEP... "linux"
checking for gcc... gcc
checking whether the C compiler works... no
configure: error: in '/home/soham/libraries/Python-3.10.16':
configure: error: C compiler cannot create executables
See 'config.log' for more details
soham@server:~/libraries/Python-3.10.16$ cd ...
-bash: cd: ...: No such file or directory
soham@server:~/libraries/Python-3.10.16$ cd ..
soham@server:~/libraries$ export PATH=$HOME/openssl/bin:$PATH_
```

compile python and install it into the specified directory

```
fi
rm -f /home/soham/local/bin/python3-config
(cd /home/soham/local/bin; ln -s python3.10-config python3-config)
rm -f /home/soham/local/lib/pkgconfig/python3.pc
(cd /home/soham/local/lib/pkgconfig; ln -s python-3.10.pc python3.pc)
rm -f /home/soham/local/lib/pkgconfig/python3-embed.pc
(cd /home/soham/local/lib/pkgconfig; ln -s python-3.10-embed.pc python3-embed.pc)
rm -f /home/soham/local/bin/idle3
(cd /home/soham/local/bin; ln -s idle3.10 idle3)
rm -f /home/soham/local/bin/pydoc3
(cd /home/soham/local/bin; ln -s pydoc3.10 pydoc3)
rm -f /home/soham/local/bin/2to3
(cd /home/soham/local/bin; ln -s 2to3-3.10 2to3)
if test "x" != "x" ; then \
    rm -f /home/soham/local/bin/python3-32; \
    (cd /home/soham/local/bin; ln -s python3.10-32 python3-32) \
fi
if test "x" != "x" ; then \
    rm -f /home/soham/local/bin/python3-intel64; \
    (cd /home/soham/local/bin; ln -s python3.10-intel64 python3-intel64) \
fi
rm -f /home/soham/local/share/man/man1/python3.1
(cd /home/soham/local/share/man/man1; ln -s python3.10.1 python3.1)
if test "xinstall" != "xno" ; then \
    case install in \
        upgrade) ensurepip="--upgrade" ;; \
        install|*) ensurepip="" ;; \
    esac; \
    ./python -E -m ensurepip \
        $ensurepip --root=/ ; \
fi
looking in links: /tmp/tmpiqv4mp_d
Processing /tmp/tmpiqv4mp_d/setuptools-65.5.0-py3-none-any.whl
Processing /tmp/tmpiqv4mp_d/pip-23.0.1-py3-none-any.whl
Installing collected packages: setuptools, pip
WARNING: The scripts pip3 and pip3.10 are installed in '/home/soham/local/bin' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed pip-23.0.1 setuptools-65.5.0
soham@server:~/libraries/Python-3.10.16$
```

```

Successfully installed pip-23.0.1 setuptools-65.5.0
soham@server:~/libraries/Python-3.10.16$ python3 --version
-bash: python3: command not found
soham@server:~/libraries/Python-3.10.16$ cd ..
soham@server:~/libraries$ export PATH=$HOME/local/bin:$PATH
soham@server:~/libraries$ echo $PATH
/home/soham/local/bin:/home/soham/openssl/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
soham@server:~/libraries$ python3 --version
Python 3.10.16
soham@server:~/libraries$

```

10. Python successfully installed and Creating new virtual environment (myenv) , activating environment and installing label-studio

```

Python 3.10.16
soham@server:~/libraries/Python-3.10.16$ python3.10 -m venv myenv
/home/soham/local/bin/python3.10: No module named venv
soham@server:~/libraries/Python-3.10.16$ python3.10 -m venv myenv
soham@server:~/libraries/Python-3.10.16$ source myenv/bin/activate
(myenv) soham@server:~/libraries/Python-3.10.16$ pip install label-studio
Collecting label-studio
  Downloading label_studio-1.15.0-py3-none-any.whl (60.6 MB)
    38.0/60.6 MB 10.2 MB/s eta 0:00:03

```

11. History

You can view the history : saved_history.txt on the github link

https://github.com/Soham-Gaonkar/CS_203_Lab03/blob/main/saved_history.txt

Pushing to GitHub using PAT token

```

108 sudo apt install git
109 git init
110 git add .
111 git commit -m 'initial commit'
112 git config --global user.name 'Soham-Gaonkar'
113 git config --global user.email 'sohamgaonkar2005@gmail.com'
114 git remote add origin https://github.com/Soham-Gaonkar/CS_203_Lab03.git
115 git remote -v
116 git branch -M main
117 git push -u origin main
118 git status
119 git branch
120 git rm -r *
121 ls
122 git add saved_history.txt
123 git commit -m 'added txt file'
124 git push
125 git status
126 git branch
127 git status
128 git push -u origin main
129 git remote set-url origin https://[redacted]@github.com/Soham-Gaonkar/CS_203_Lab03
130 git add saved_history.txt
131 git commit -m 'test commit'
132 git push origin main
133 git reset --hard HEAD~1
134 git status
135 git ls-files
136 git rm -r --cached
137 git rm -r --cached
138 git ls-files
139 git reset openssl
140 git reset libraries
141 git reset local
142 git status
143 git ls-files
144 git reset local/
145 git reset libraries/
146 git reset openssl/
147 git status
148 git ls-files
149 clear
150 git rm -r --cached .
151 git add saved_history.txt
152 git commit -m 'removed stuff'
153 git push origin main
154 clear
155 history
soham@server:~$

```

Task 2:

General

Labeling Interface

Annotation

Model

Predictions

Cloud Storage

Webhooks

Danger Zone

Labeling Interface

Browse Templates

Code

Visual

Configure data

Use text from field <set manually> \$text

Add label names

Use new line as a separator to add multiple labels

Add

Labels (14)

NOUN

PROPN

VERB

ADJ

ADV

Configure settings

☐ Select text by words

Display labels: top

☐ Add filter for long list of labels

Save

UI Preview

NOUN 1

PROPN 2

VERB 3

ADJ 4

ADV 5

ADP 6

DET 7

CONJ 8

PART 9

PRON_WH 0

PART_NEG q

NUM w

X e

PRON t

Sample: Your text will go here.

Regions

History

Relations

Info

Manual

By Time

Regions not added

Projects / NLP_Annotation

Settings

SD

Default

New Tab 2

+

Tasks: 20 / 14419

Annotations: 20

Predictions: 0

Actions

Columns

Filters

Order

not set

IF

Label All Tasks

↺

Import

Export

List

ID	Inner ID	Completed		Annotation results	Updated at	text	str
<input type="checkbox"/>	14560	121	Jan 25 2025, 17:28:15	1	[[{"value": {"start": 0, "end": 16, "text": "u0928u0947u0936u0"}, {"start": 16, "end": 24, "text": "u092fu0942u0928u09"}], id: ZHPY44zSSO,	नैकत हेलि मिशन (NHM), उपग्रह ने कायमिहिले हेलि मिशन (CHM) के पदों पर	↗
<input type="checkbox"/>	14561	122	Jan 25 2025, 17:35:19	1	[[{"value": {"start": 0, "end": 24, "text": "u092fu0942u0928u09"}], id: ZHPY44zSSO,	युनिवर्सिटी प्रोफेसर ने नैकत एलिजिबिलिटी टेस्ट या UGC NET 2021 का एपाम	↗
<input type="checkbox"/>	14562	123	Jan 25 2025, 18:39:34	1	[[{"value": {"start": 0, "end": 34, "text": "u0911u0932u0907u0902u0921u0"}, {"start": 34, "end": 42, "text": "u092fu0942u0928u09"}], id: ZHPY44zSSO,	ऑल इंडिया प्रैक्टिस एसासिएशन (AIPA) ने CBSE 2021 बोर्ड परीक्षाओं को लेकर केंद्रीय शिक्षा	↗
<input type="checkbox"/>	14563	124	Jan 25 2025, 18:55:33	1	[[{"value": {"start": 20, "end": 23, "text": "u0938u0947", "labels": ["ADJ"]}], id: ZHPY44zSSO,	एकेडमिक ईयर 2020-21 से इंडियन इंडीपेंडेंट ऑफ टेक्नोलॉजी (IIT) और नैकत	↗
<input type="checkbox"/>	14564	125	Jan 25 2025, 19:00:36	1	[[{"value": {"start": 0, "end": 2, "text": "u0907u0938", "labels": ["PRON"]}], id: ZHPY44zSSO,	इस दौरान केंद्रीय शिक्षा मंत्री ने फैसला किया कि आगे सार से IIT, NIT समेत कई इंडीनिप्रिस	↗
<input type="checkbox"/>	14565	126	Jan 25 2025, 19:03:59	1	[[{"value": {"start": 0, "end": 6, "text": "u0907u0902u0921u0"}, {"start": 6, "end": 16, "text": "u092fu0942u0928u09"}], id: ZHPY44zSSO,	इंडियन इंडीपेंडेंट ऑफ टेक्नोलॉजी (IIT) बजटपर जॉइंट एंड्रस एपाम (JEE) एडमिशन	↗
<input type="checkbox"/>	14566	127	Jan 25 2025, 19:08:42	1	[[{"value": {"start": 0, "end": 4, "text": "u091c u092c u0915 u09"}, {"start": 4, "end": 16, "text": "u092fu0942u0928u09"}], id: ZHPY44zSSO,	जबकि NTPC, डी रेड्डी, हिंदुस्तान युनिवर्सिटी, IICI बैंक और सन फार्म के स्टॉक में बढ़त है।	↗
<input type="checkbox"/>	14567	128	Jan 25 2025, 19:12:08	1	[[{"value": {"start": 0, "end": 3, "text": "u0915u0941u091b"}, {"start": 3, "end": 16, "text": "u092fu0942u0928u09"}], id: ZHPY44zSSO,	कुछ महाने पहले ही FEMA के नियम को तोड़ने को लेकर आरोपों के इलाक़ा में	↗

Label Studio

Projects / CV_Annotation

Settings50

Default

ActionsColumnsFiltersOrdernot setLabel All Tasks

ImportExportList

ID	Completed				Annotated by	image
<input type="checkbox"/> 28859	Jan 25 2025, 21:13:56	1	0	0	23	View
<input type="checkbox"/> 28860	Jan 25 2025, 21:14:19	1	0	0	23	View
<input type="checkbox"/> 28861	Jan 25 2025, 21:15:10	1	0	0	23	View
<input type="checkbox"/> 28862	Jan 25 2025, 21:15:18	1	0	0	23	View
<input type="checkbox"/> 28863	Jan 25 2025, 21:15:37	1	0	0	23	View
<input type="checkbox"/> 28864	Jan 25 2025, 21:16:06	1	0	0	23	View
<input type="checkbox"/> 28865	Jan 25 2025, 21:16:12	1	0	0	23	View
<input type="checkbox"/> 28866	Jan 25 2025, 21:16:17	1	0	0	23	View