

TOPICS IN COMPUTER SCIENCE-II

ASSIGNMENT

NAME:

HUSSAIN ALI

REGISTRATION NUMBER:

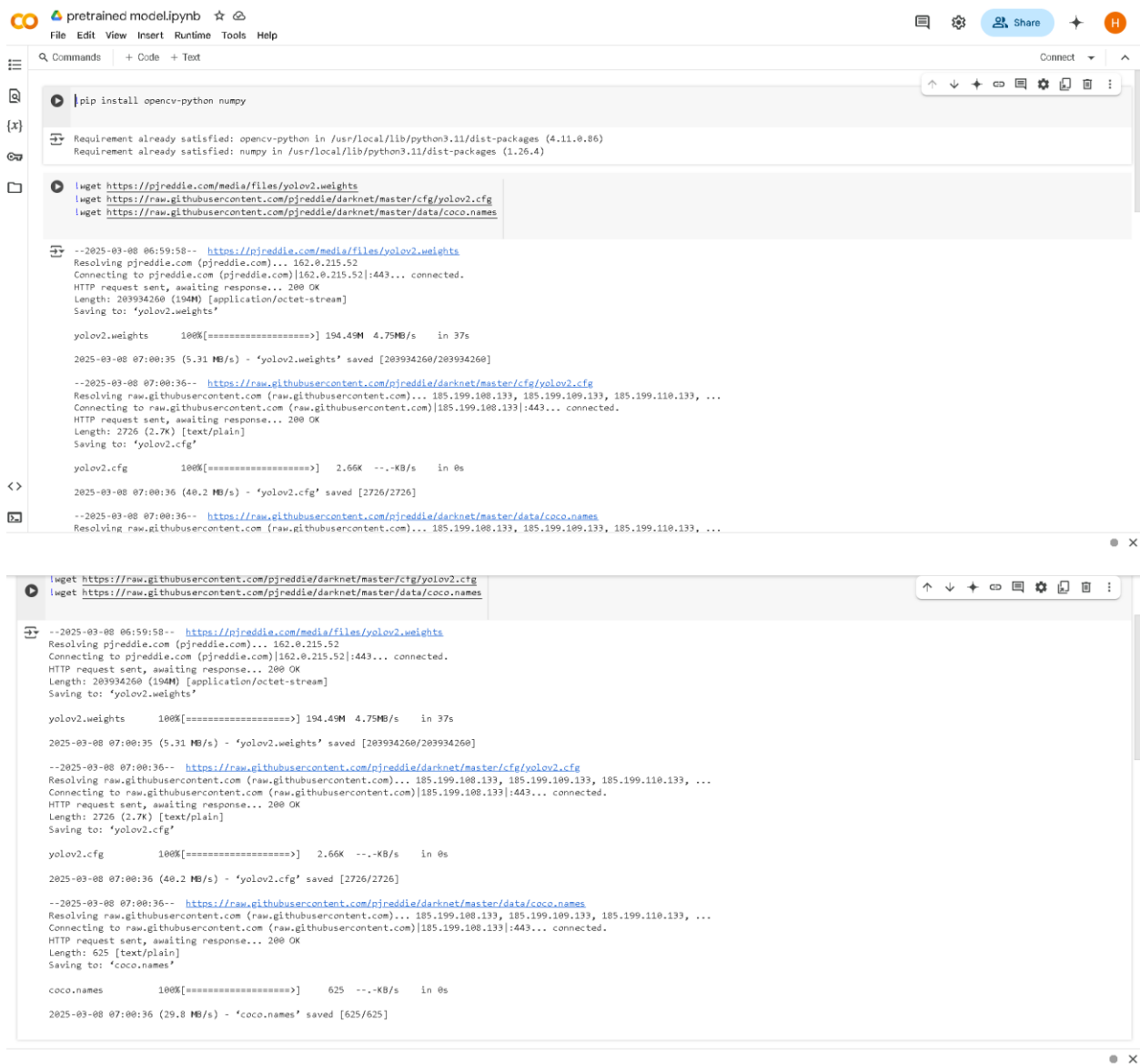
FA21-BCS-066

SECTION:

BCS-8A

QUESTION NO.1:

SCREENSHOTS:



The first screenshot shows the JupyterLab interface with the terminal output for the command `pip install opencv-python numpy`. The output indicates that the requirements are already satisfied. Below this, the terminal shows the execution of `wget` commands to download `yolov2.weights`, `yolov2.cfg`, and `coco.names` from GitHub. The download progress for `yolov2.weights` is shown as 100% complete, with a size of 194.49M and a download speed of 4.75MB/s. The download for `yolov2.cfg` is also shown as 100% complete, with a size of 2.66K and a download speed of 2.66K/s. The download for `coco.names` is shown as 100% complete, with a size of 625 bytes and a download speed of 625 bytes/s.

```
pretrained model.ipynb
File Edit View Insert Runtime Tools Help

Commands + Code + Text

| pip install opencv-python numpy

Requirement already satisfied: opencv-python in /usr/local/lib/python3.11/dist-packages (4.11.0.86)
Requirement already satisfied: numpy in /usr/local/lib/python3.11/dist-packages (1.26.4)

wget https://pjreddie.com/media/files/yolov2.weights
wget https://raw.githubusercontent.com/pjreddie/darknet/master/cfg/yolov2.cfg
wget https://raw.githubusercontent.com/pjreddie/darknet/master/data/coco.names

--2025-03-08 06:59:58-- https://pjreddie.com/media/files/yolov2.weights
Resolving pjreddie.com (pjreddie.com)... 162.0.215.52
Connecting to pjreddie.com (pjreddie.com)[162.0.215.52]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 203934260 (194M) [application/octet-stream]
Saving to: 'yolov2.weights'

yolov2.weights 100%[=====] 194.49M 4.75MB/s in 37s

2025-03-08 07:00:35 (5.31 MB/s) - 'yolov2.weights' saved [203934260/203934260]

--2025-03-08 07:00:36-- https://raw.githubusercontent.com/pjreddie/darknet/master/cfg/yolov2.cfg
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)[185.199.108.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2726 (2.7K) [text/plain]
Saving to: 'yolov2.cfg'

yolov2.cfg 100%[=====] 2.66K --KB/s in 0s

2025-03-08 07:00:36 (40.2 MB/s) - 'yolov2.cfg' saved [2726/2726]

--2025-03-08 07:00:36-- https://raw.githubusercontent.com/pjreddie/darknet/master/data/coco.names
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...

wget https://raw.githubusercontent.com/pjreddie/darknet/master/cfg/yolov2.cfg
wget https://raw.githubusercontent.com/pjreddie/darknet/master/data/coco.names

--2025-03-08 06:59:58-- https://pjreddie.com/media/files/yolov2.weights
Resolving pjreddie.com (pjreddie.com)... 162.0.215.52
Connecting to pjreddie.com (pjreddie.com)[162.0.215.52]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 203934260 (194M) [application/octet-stream]
Saving to: 'yolov2.weights'

yolov2.weights 100%[=====] 194.49M 4.75MB/s in 37s

2025-03-08 07:00:35 (5.31 MB/s) - 'yolov2.weights' saved [203934260/203934260]

--2025-03-08 07:00:36-- https://raw.githubusercontent.com/pjreddie/darknet/master/cfg/yolov2.cfg
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)[185.199.108.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 2726 (2.7K) [text/plain]
Saving to: 'yolov2.cfg'

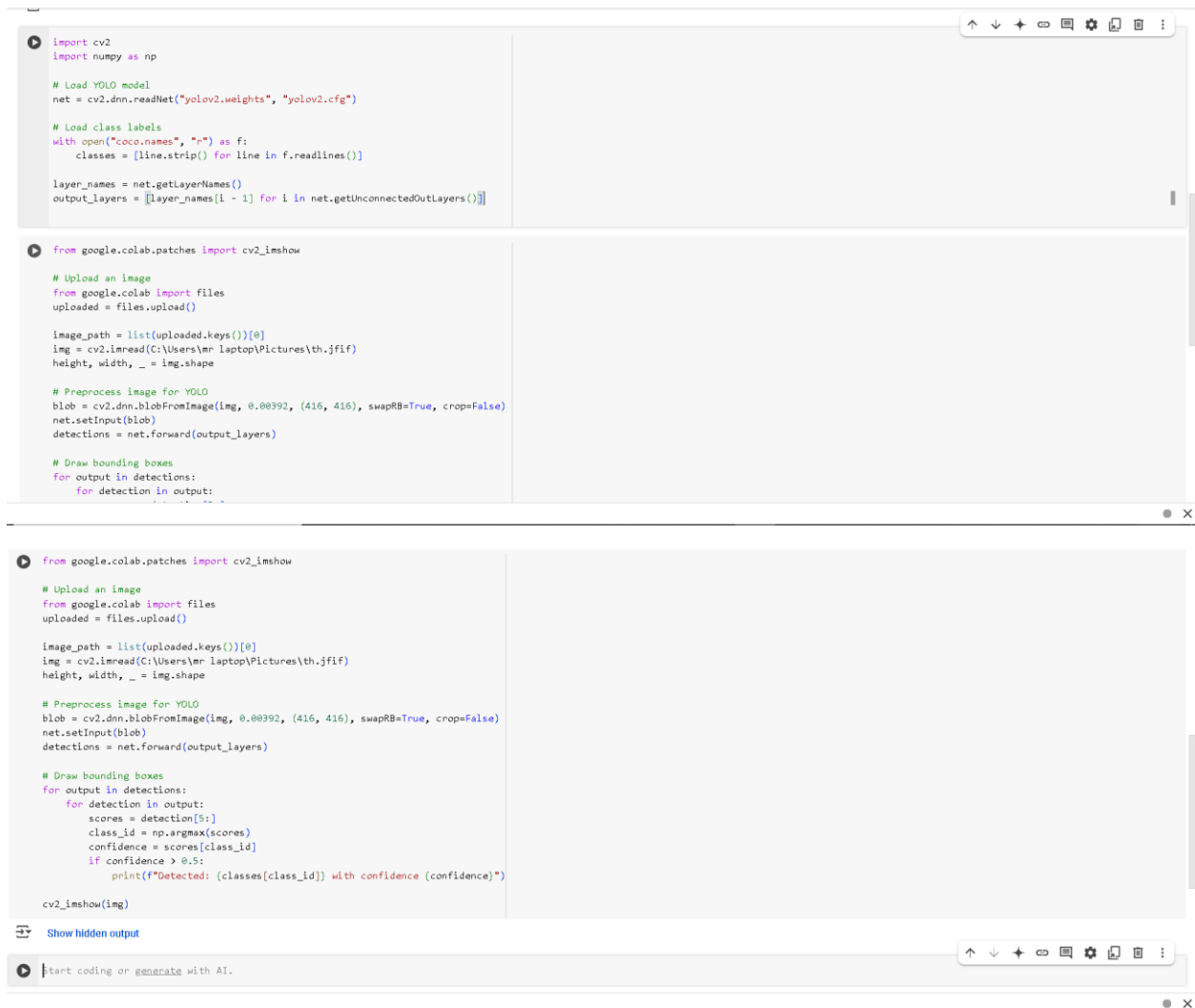
yolov2.cfg 100%[=====] 2.66K --KB/s in 0s

2025-03-08 07:00:36 (40.2 MB/s) - 'yolov2.cfg' saved [2726/2726]

--2025-03-08 07:00:36-- https://raw.githubusercontent.com/pjreddie/darknet/master/data/coco.names
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)[185.199.108.133]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 625 [text/plain]
Saving to: 'coco.names'

coco.names 100%[=====] 625 --KB/s in 0s

2025-03-08 07:00:36 (29.8 MB/s) - 'coco.names' saved [625/625]
```



QUESTION NO.2

SCREENSHOTS:

newdatasetipyb

File Edit View Insert Runtime Tools Help

Commands + Code + Text

pip install opencv-python numpy
git clone https://github.com/AlexeyAB/darknet.git
%cd darknet
make

Requirement already satisfied: opencv-python in /usr/local/lib/python3.11/dist-packages (4.11.0.86)
Requirement already satisfied: numpy in /usr/local/lib/python3.11/dist-packages (1.26.4)
Cloning into 'darknet'...
remote: Enumerating objects: 15873, done.
remote: Counting objects: 100% (23/23), done.
remote: Compressing objects: 100% (16/16), done.
remote: Total 15873 (delta 12), reused 7 (delta 7), pack-reused 15850 (from 3)
Receiving objects: 100% (15873/15873), 14.58 MiB | 14.75 MiB/s, done.
Resolving deltas: 100% (10679/10679), done.
/content/darknet
mkdir -p ./obj/
mkdir -p backup
mkdir -p results
chmod +x *.sh
g++ -std=c++11 -std=c++11 -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/image_opencv.cpp -o obj/image_opencv.o
g++ -std=c++11 -std=c++11 -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/http_stream.cpp -o obj/http_stream.o
./src/http_stream.cpp: In member function 'bool JSON_sender::write(const char*)':
./src/http_stream.cpp:253:21: warning: unused variable 'n' [-Wunused-variable]
253 | int n = _write(client, outputbuf, outlen);
 | ^
./src/http_stream.cpp: In function 'void set_track_id(detection*, int, float, float, float, int, int, int)':
./src/http_stream.cpp:866:27: warning: comparison of integer expressions of different signedness: 'int' and 'std::vector<detection_t>::size_type' {aka 'long unsigned int'} [-Wsign-compare]
866 | for (int i = 0; i < v.size(); ++i) {
 | ~~~~~^~~~~~
./src/http_stream.cpp:874:33: warning: comparison of integer expressions of different signedness: 'int' and 'std::vector<detection_t>::size_type' {aka 'long unsigned int'} [-Wsign-compare]
874 | for (int old_id = 0; old_id < old_dets.size(); ++old_id) {
 | ~~~~~^~~~~~
./src/http_stream.cpp:893:31: warning: comparison of integer expressions of different signedness: 'int' and 'std::vector<detection_t>::size_type' {aka 'long unsigned int'} [-Wsign-compare]
893 | for (int index = 0; index < new_dets.num*old_dets.size(); ++index) {
 | ~~~~~^~~~~~

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Receiving objects: 100% (15873/15873), 14.58 MiB | 14.75 MiB/s, done.
Resolving deltas: 100% (10679/10679), done.
/content/darknet
mkdir -p ./obj/
mkdir -p backup
mkdir -p results
chmod +x *.sh
g++ -std=c++11 -std=c++11 -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/image_opencv.cpp -o obj/image_opencv.o
g++ -std=c++11 -std=c++11 -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/http_stream.cpp -o obj/http_stream.o
./src/http_stream.cpp: In member function 'bool JSON_sender::write(const char*)':
./src/http_stream.cpp:253:21: warning: unused variable 'n' [-Wunused-variable]
253 | int n = _write(client, outputbuf, outlen);
 | ^
./src/http_stream.cpp: In function 'void set_track_id(detection*, int, float, float, float, int, int, int)':
./src/http_stream.cpp:866:27: warning: comparison of integer expressions of different signedness: 'int' and 'std::vector<detection_t>::size_type' {aka 'long unsigned int'} [-Wsign-compare]
866 | for (int i = 0; i < v.size(); ++i) {
 | ~~~~~^~~~~~
./src/http_stream.cpp:874:33: warning: comparison of integer expressions of different signedness: 'int' and 'std::vector<detection_t>::size_type' {aka 'long unsigned int'} [-Wsign-compare]
874 | for (int old_id = 0; old_id < old_dets.size(); ++old_id) {
 | ~~~~~^~~~~~
./src/http_stream.cpp:893:31: warning: comparison of integer expressions of different signedness: 'int' and 'std::vector<detection_t>::size_type' {aka 'long unsigned int'} [-Wsign-compare]
893 | for (int index = 0; index < new_dets.num*old_dets.size(); ++index) {
 | ~~~~~^~~~~~
./src/http_stream.cpp:929:28: warning: comparison of integer expressions of different signedness: 'std::deque<std::vector<detection_t> >::size_type' {aka 'long unsigned int'} and 'int' [-Wsign-compare]
929 | if (old_dets_dq.size() > deque_size) old_dets_dq.pop_front();
 | ~~~~~^~~~~~
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/gemm.c -o obj/gemm.o
./src/gemm.c: In function 'convolution_2d':
./src/gemm.c:2042:15: warning: unused variable 'out_w' [-Wunused-variable]
2042 | const int out_w = (w + 2 * pad - ksize) / stride + 1; // output_width=input_width for stride=1 and pad=1
 | ~~~~~^~~~~~
./src/gemm.c:2041:15: warning: unused variable 'out_h' [-Wunused-variable]
2041 | const int out_h = (h + 2 * pad - ksize) / stride + 1; // output_height=input_height for stride=1 and pad=1
 | ~~~~~^~~~~~
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/utils.c -o obj/utils.o
./src/utils.c: In function 'custom_hash':
./src/utils.c:1093:12: warning: suggest parentheses around assignment used as truth value [-Wparentheses]
1093 | while (c = *str++)
 | ^

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```

✓ 51s | ./src/blas.c: In function 'backward_shortcut_multilayer_cpu':
./src/blas.c:207:21: warning: unused variable 'out_index' [-Wunused-variable]
207 |         int out_index = id;
    |         ~~~~~
    |
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/crop_layer.c -o obj/crop_layer.o
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/dropout_layer.c -o obj/dropout_layer.o
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/maxpool_layer.c -o obj/maxpool_layer.o
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/softmax_layer.c -o obj/softmax_layer.o
./src/softmax_layer.c: In function 'forward_contrastive_layer':
./src/softmax_layer.c:242:27: warning: variable 'max_truth' set but not used [-Wunused-but-set-variable]
242 |         float max_truth = 0;
    |         ~~~~~
    |
gcc -Iinclude/ -I3rdparty/stb/include -Wall -Wfatal-errors -Wno-unused-result -Wno-unknown-pragmas -fPIC -rdynamic -Ofast -c ./src/data.c -o obj/data.o
./src/data.c: In function 'load_data_detection':
./src/data.c:1399:43: warning: variable 'r_scale' set but not used [-Wunused-but-set-variable]
1399 |         float r1 = 0, r2 = 0, r3 = 0, r4 = 0, r_scale;
    |         ~~~~~
    |
./src/data.c: In function 'fill_truth_detection':
./src/data.c:431:33: warning: '%s' directive writing up to 4095 bytes into a region of size 251 [-Wformat-overflow=]
431 |         sprintf(buff, "echo %s \"Wrong annotation: w = %f\" >> bad_label.list", labelpath, w);
    |         ~~~~~
    |
./src/data.c:431:27: note: assuming directive output of 8 bytes
431 |         sprintf(buff, "echo %s \"Wrong annotation: w = %f\" >> bad_label.list", labelpath, w);
    |         ~~~~~
    |
In file included from /usr/include/stdio.h:894,
from include/darknet.h:13,
from ./src/data.h:5,
from ./src/data.c:1:
./usr/include/x86_64-linux-gnu/bits/stdio2.h:38:10: note: '__builtin__sprintf_chk' output between 52 and 4461 bytes into a destination of size 256
38 |     return __builtin__sprintf_chk(__s, __USE_FORTIFY_LEVEL - 1,
    |            ~~~~~
    |
39 |         __glibc_objsize(__s), __fmt,
    |         ~~~~~
    |
40 |         __va_arg_pack ());
    |         ~~~~~
    |
./src/data.c:437:33: warning: '%s' directive writing up to 4095 bytes into a region of size 251 [-Wformat-overflow=]
437 |         sprintf(buff, "echo %s \"Wrong annotation: h = %f\" >> bad_label.list", labelpath, h);
    |         ~~~~~
    |

```

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```

pip install kaggle
mkdir ~/.kaggle

```

```

Requirement already satisfied: kaggle in /usr/local/lib/python3.11/dist-packages (1.6.17)
Requirement already satisfied: six>=1.10 in /usr/local/lib/python3.11/dist-packages (from kaggle) (1.17.0)
Requirement already satisfied: certifi>=2023.7.22 in /usr/local/lib/python3.11/dist-packages (from kaggle) (2025.1.31)
Requirement already satisfied: python-dateutil in /usr/local/lib/python3.11/dist-packages (from kaggle) (2.8.2)
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (from kaggle) (2.32.3)
Requirement already satisfied: tqdm in /usr/local/lib/python3.11/dist-packages (from kaggle) (4.67.1)
Requirement already satisfied: python-slugify in /usr/local/lib/python3.11/dist-packages (from kaggle) (8.0.4)
Requirement already satisfied: urllib3 in /usr/local/lib/python3.11/dist-packages (from kaggle) (2.3.0)
Requirement already satisfied: bleach in /usr/local/lib/python3.11/dist-packages (from kaggle) (6.2.0)
Requirement already satisfied: webencodings in /usr/local/lib/python3.11/dist-packages (from bleach->kaggle) (0.5.1)
Requirement already satisfied: text-unidecode>=1.3 in /usr/local/lib/python3.11/dist-packages (from python-slugify->kaggle) (1.3)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests->kaggle) (3.4.1)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from requests->kaggle) (3.10)

```

```

from google.colab import files
files.upload()

```

Choose Files No file chosen Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.

Saving kaggle.json to kaggle.json

```
{'kaggle.json': b'{"username": "alihussainali", "key": "51efe94b83a06bb9a112d9e34178da74"}'}
```

```

[5] | mkdir -p ~/.kaggle
| mv kaggle.json ~/.kaggle/
| chmod 600 ~/.kaggle/kaggle.json

```

mv: cannot stat 'kaggle.json': No such file or directory

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```

from google.colab import files
files.upload()

```

Choose Files No file chosen Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.

Saving kaggle.json to kaggle.json

```
{'kaggle.json': b'{"username": "alihussainali", "key": "51efe94b83a06bb9a112d9e34178da74"}'}
```

```

[5] | mkdir -p ~/.kaggle
| mv kaggle.json ~/.kaggle/
| chmod 600 ~/.kaggle/kaggle.json

```

mv: cannot stat 'kaggle.json': No such file or directory

```

[6] | ls -l ~/.kaggle

```

```

total 4
-rw-r----- 1 root root 69 Mar  9 15:49 kaggle.json

```

[] Start coding or [generate](#) with AI.

```

[7] | kaggle datasets list

```

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15

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