

Configuration Manual

MSc Research Project Data Analytics

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Configuration Manual

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1 Creation of GMail Account

In Order to access google colab environment in which the code can be written and executed its necessary to have a Gmail account created. Account can be created using the url ¹ Figure 1 represents the account creation window. In which the desired details needs to be updated.

Google Create your	Google Account	
First name	Last name	
Username	@gmail.c	som
You can use letters, nu Use my current ema Password		029
	ers with a mix of letters, numbers &	One account. All of Google working for you.
Show passwor	d	ct

Figure 1: Represents GMail account creation Homepage

2 Accessing G-Drive to download Google colab

Once the account is created,

- Click on G-drive tab, Select NEW option
- Double-click on MORE option
- In the search window, search for google colab software and install

Pictorial steps of accessing and downloading in represented in the Figure 2 Figure 3 respectively

¹https://support.google.com/mail/answer/56256?hl=en

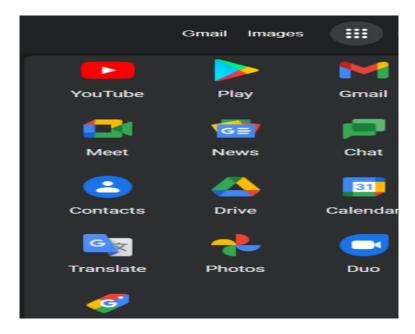


Figure 2: Representation of Accessing Google Drive

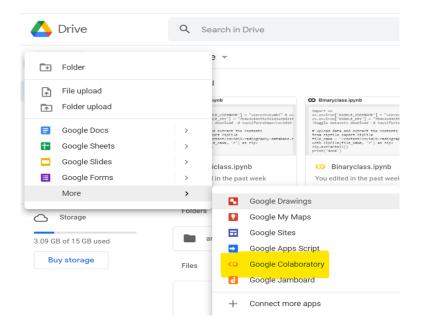


Figure 3: Representation of Downloading google colab software

3 Creation of Kaggle Account

Kaggle is used to search and post data sets, study and construct models in a web-based data-science environment, collaborate with other data scientists and machine learning experts, and compete to solve data science challenges. Our dataset is considered from kaggle repository. In order to access dataset it is important to create an account. Url of kaggle portal ² Figure 4 Represents the Kaggle Homepage

- Click on sign IN and mention the required information and register
- Once the account is created, Dataset needs to be accessed 3

Q Search			Sign In	F
0				
Dataset				
	diography Database			
COVID-19 Chest X-r	ay Database			
Tawsifur Rahman a	and 2 collaborators • updated 9 months ago (Version 4)	D - 19		
Data Code (169) Dis	cussion (22) Activity Metadata	Download (776 MB) New Notebook		
월 Usability 9.4		Tags earth and nature, health, image data, universities and colleges, classification and 5 more		
Description				
UPC	DATEDUPDATEDUPDATED			

Figure 4: Representation Kaggle Homepage

4 Copying API Command and Creation of API Key

- Click on the Icon next to New notebook and select the first option " Copy API Command". This needs to be saved in order to read the dataset from kaggle to access in google colab
- Click on the profile tab followed by account tab once scrolled down "we have to click on create new API token " a JSON File will be downloaded.

The representation is defined in Figure 6

²https://www.kaggle.com/

 $^{^{3}} https://www.kaggle.com/tawsifurrahman/covid19-radiography-database$

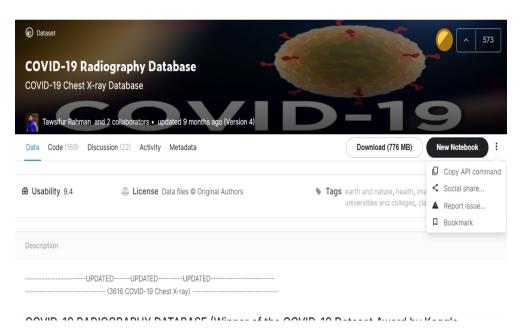


Figure 5: Representation of Covid-19 Radiography Database Homepage

Q s	earch								
Home	Competitions	Datasets	Code	Discussion	Followers	Notifications	Account	Edi	t Public Profile
comma	Kaggle's beta A and line. <mark>Read</mark> t te New API Token	he docs	nteract wi API Token		ons and Data:	sets to download	d data, make s	submissions, and mor	re via the
Quota Private GPU)7.37 GB 40 hrs							0
TPU	00:00 /	20 hrs							0

Figure 6: Creation of New API Key

5 Accessing and Downloading the dataset from Kaggle using API token and API Command

- From the Json file downloaded file Kaggle username and Kaggle key needs to be mentioned in the code file
- API copied from kaggle needs to be mentioned as referred in the Figure 7

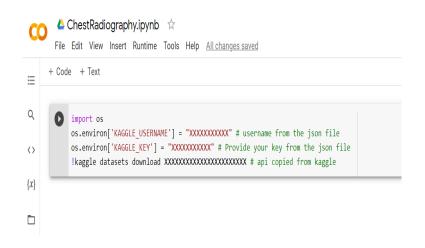


Figure 7: API key, API command and USERNAME details

6 Importing and installing Python library

Importing and installing the libraries for code to execute Figure 8

7 Execution

Once all the execution data is imposed. Click on Run Option. Figure 9

0	<pre>import tensorflow as tf from tensorflow import keras</pre>
[]	# Data preprocessing
	import numpy as np
	import pandas as pd
	import seaborn as sns
	import matplotlib.pyplot as plt
	import matplotlib.image as mpimg
	from matplotlib.offsetbox import OffsetImage, AnnotationBbox
	from glob import glob
	from PIL import Image
	import os
	import random
	import cv2
	#Model
	import keras
	from keras.models import Sequential, Model,load_model
	from keras.layers import Activation, Dense, Dropout, Flatten, Conv2D, MaxPooling2D, MaxPool2D, AveragePooling2D, GlobalMaxPooling2D
	from keras import backend as K
	from keras.wrappers.scikit_learn import KerasClassifier
	from tensorflow.keras.layers import BatchNormalization from keras.utils.np utils import to categorical # convert to one-hot-encoding
	from keras import regularizers
	from tensorflow.keras.optimizers import Adam
	from keras.preprocessing.image import ImageDataGenerator,array_to_img from keras.callbacks import ReduceLROnPlateau, EarlyStopping,ModelCheckpoint
	from keras.callacks import PrecisionAtRecall.Recall

Figure 8: Importing and installing the libraries for code to execute

🛆 Multiclass.ipynb	$\stackrel{\wedge}{\sim}$	
File Edit View Insert	Runtime Tools Help	All changes saved
- Code + Text	Run all	Ctrl+F9
uone	Run before	Ctrl+F8
[] import tensorflow	Run the focused cell	Ctrl+Enter
from tensorflow :	Run selection	Ctrl+Shift+Enter
	Run after	Ctrl+F10
<pre>[] # Data preproces: import numpy as i</pre>		
import pandas as		
<pre>import seaborn a: import matplotlil</pre>		
import matplotli		
from matplotlib. from glob import from PIL import :	Change runtime type	ationBbox
import os	Manage sessions	
<pre>import random import cv2</pre>		
#Model import keras		

Figure 9: Importing and installing the libraries for code to execute