Software Engineering Tools lab

Assignment No 2

Name: Siddharth Mukkanawar

PRN: 2019BTECS00100

Batch: T7

1. Ruby on Rails

Original author: David Heinemeier Hansson

Initial release: August 2004

Stable release : 7.0.2.2 February 11 2022

Repository (with cloud support): https://github.com/rails/rails

Written in (Languages) : Ruby

Operating System support : Mac OS,Linux,Windows operating system

Platform ,portability: Ruby is an interpreted language , so it runs on any platform which has interpreter installed

List of languages supported : Combines ruby programing language with HTML,CSS,JavaScript

Type (Programming tool, integrated development environment etc.) : Web Application Framework

Website : https://rubyonrails.org/Features

Size (in MB, GB etc.) : 57.8 MB

Type of software (Open source/License): Open Source

Latest version : 7.0.2.2

Cloud support (Yes/No) : Yes

Applicability : Web Application development

Drawbacks (if any) : 1) Slow runtime speed

2) Lack of flexibility

3) High cost of wrong decisions in development

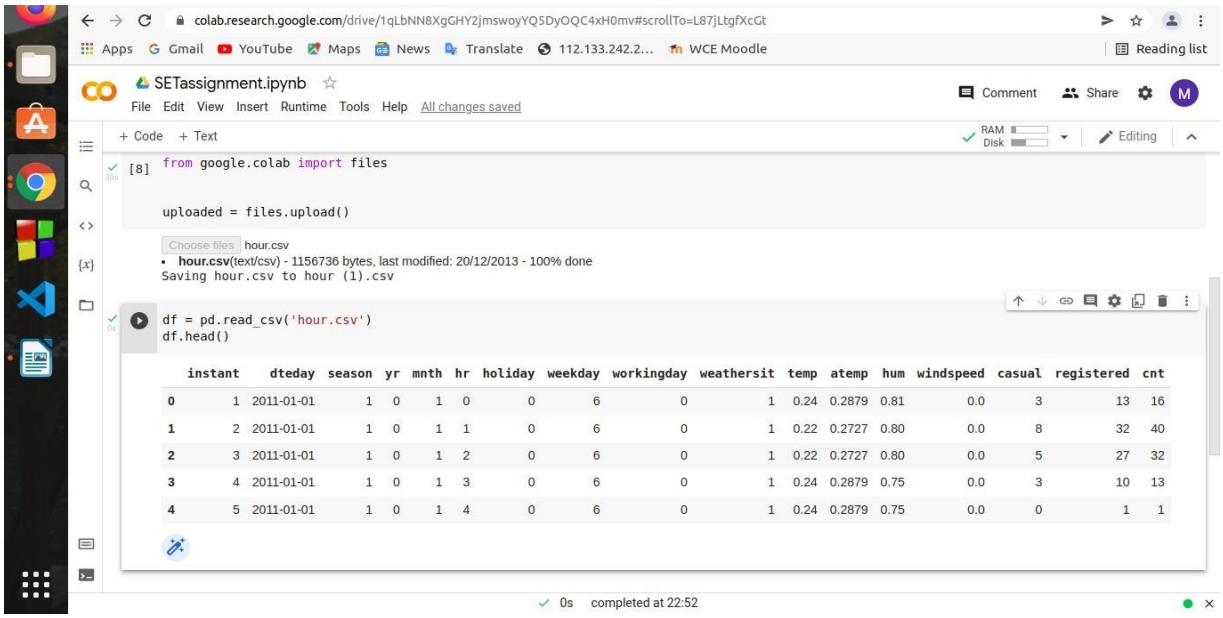
2.Implement linear regression problem using Google colab (Perform preprocessing, training and testing)

Dataset used: Bike Sharing Dataset

Link:https://archive.ics.uci.edu/ml/datasets/Bike+Sharing+Dataset

Google Colab screenshots:

Google Collab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[8] from google.colab import files
uploaded = files.upload()
Choose files hour.csv
hour.csv(text/csv) - 1156736 bytes, last modified: 20/12/2013 - 100% done
Saving hour.csv to hour (1).csv
df = pd.read_csv('hour.csv')
df.head()
instant dteday season yr mnth hr holiday weekday workingday weathersit temp atemp hum windspeed casual registered cnt
0 1 2011-01-01 1 0 1 0 0 6 0 1 0.24 0.2879 0.81 0.0 3 13 16
1 2 2011-01-01 1 0 1 1 0 6 0 1 0.22 0.2727 0.80 0.0 8 32 40
2 3 2011-01-01 1 0 1 2 0 6 0 1 0.22 0.2727 0.80 0.0 5 27 32
3 4 2011-01-01 1 0 1 3 0 6 0 1 0.24 0.2879 0.75 0.0 3 10 13
4 5 2011-01-01 1 0 1 4 0 6 0 1 0.24 0.2879 0.75 0.0 0 1 1
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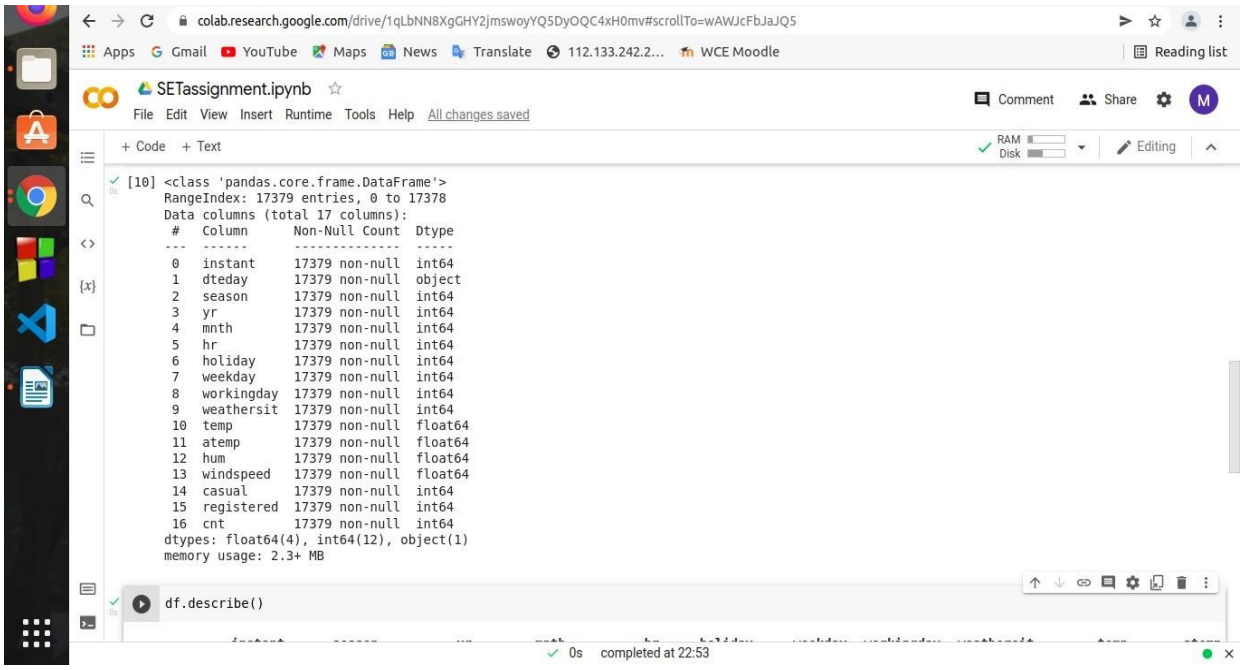
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[10] <class 'pandas.core.frame.DataFrame'>
RangeIndex: 17379 entries, 0 to 17378
Data columns (total 17 columns):
Column Non-Null Count Dtype
0 instant 17379 non-null int64
1 dteday 17379 non-null object
2 season 17379 non-null int64
3 yr 17379 non-null int64
4 mnth 17379 non-null int64
5 hr 17379 non-null int64
6 holiday 17379 non-null int64
7 weekday 17379 non-null int64
8 workingday 17379 non-null int64
9 weathersit 17379 non-null int64
10 temp 17379 non-null float64
11 atemp 17379 non-null float64
12 hum 17379 non-null float64
13 windspeed 17379 non-null float64
14 casual 17379 non-null int64
15 registered 17379 non-null int64
16 cnt 17379 non-null int64
dtypes: float64(4), int64(12), object(1)
memory usage: 2.3+ MB
df.describe()
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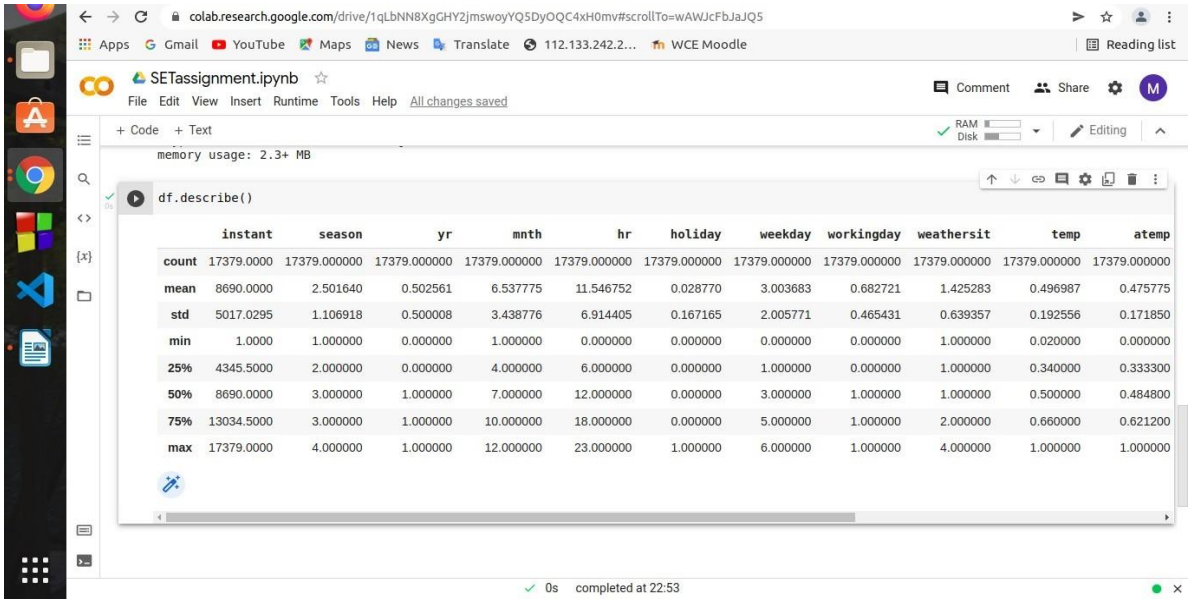
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df.describe()
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mean 8690.0000 2.501640 0.502561 6.537775 11.546752 0.028770 3.003683 0.682721 1.425283 0.496987 0.475775
std 5017.0295 1.106918 0.500008 3.438776 6.914405 0.167165 2.005771 0.465431 0.639357 0.192556 0.171850
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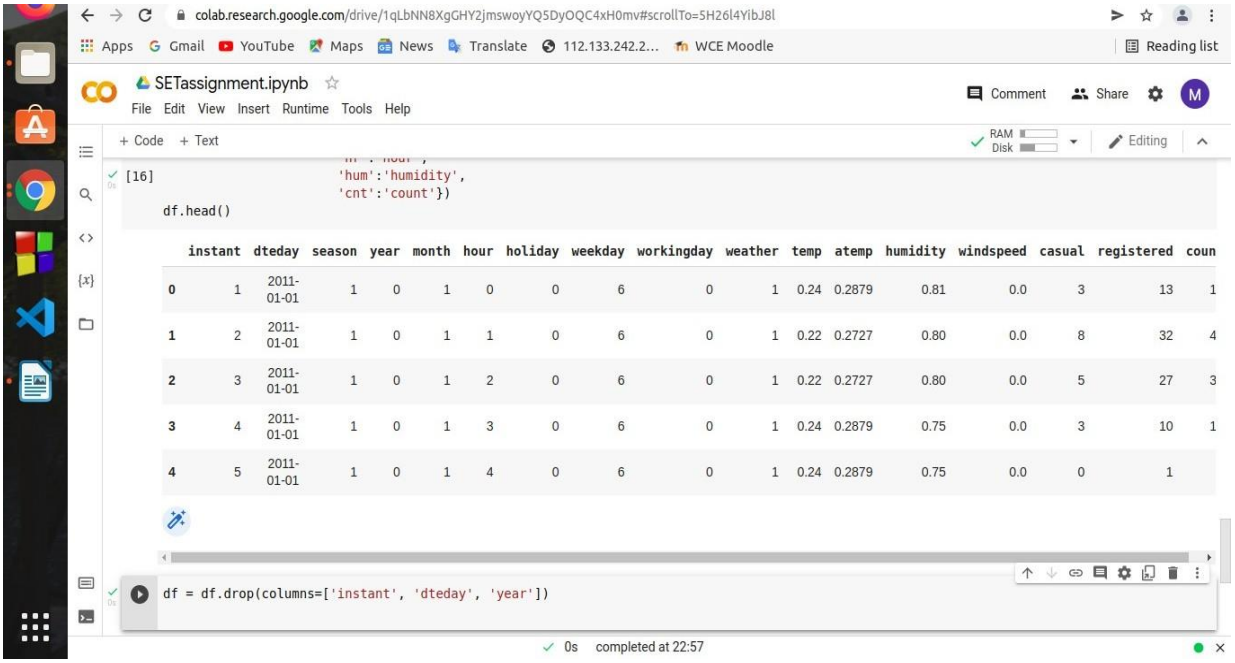
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[16] 'hum':'humidity',
'cnt':'count'})
df.head()
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0 1 2011-01-01 1 0 1 0 0 6 0 1 0.24 0.2879 0.81 0.0 3 13 1
1 2 2011-01-01 1 0 1 1 0 6 0 1 0.22 0.2727 0.80 0.0 8 32 4
2 3 2011-01-01 1 0 1 2 0 6 0 1 0.22 0.2727 0.80 0.0 5 27 3
3 4 2011-01-01 1 0 1 3 0 6 0 1 0.24 0.2879 0.75 0.0 3 10 1
4 5 2011-01-01 1 0 1 4 0 6 0 1 0.24 0.2879 0.75 0.0 0 1
df = df.drop(columns=['instant', 'dteday', 'year'])
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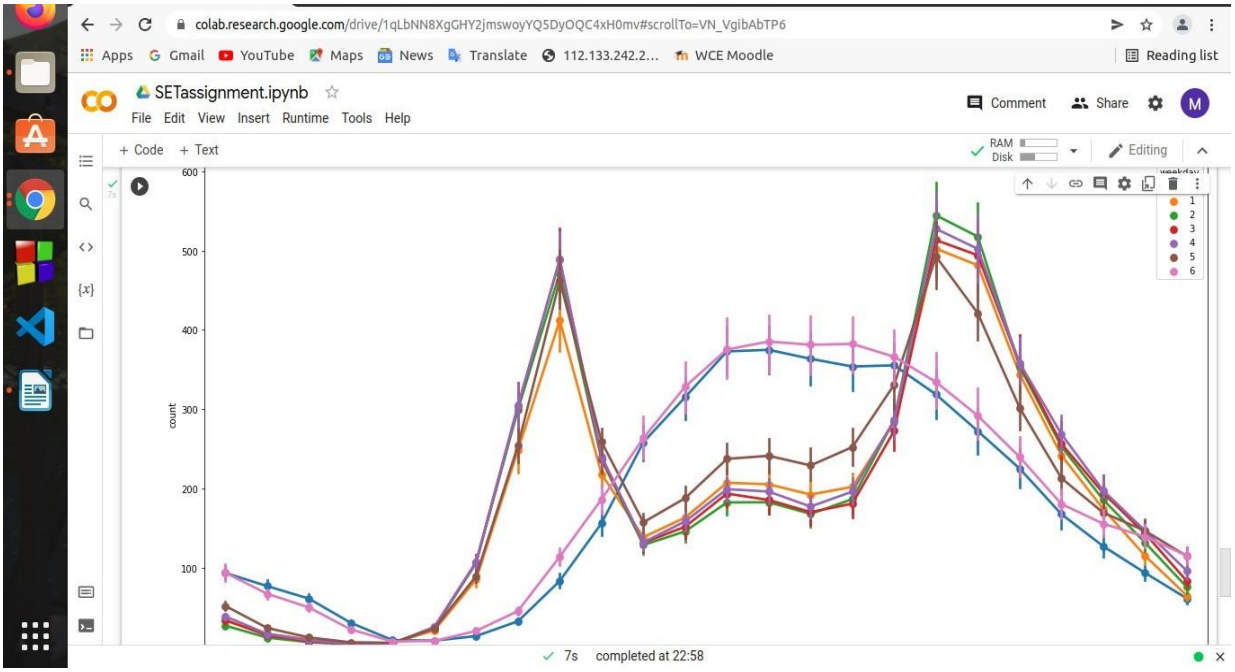
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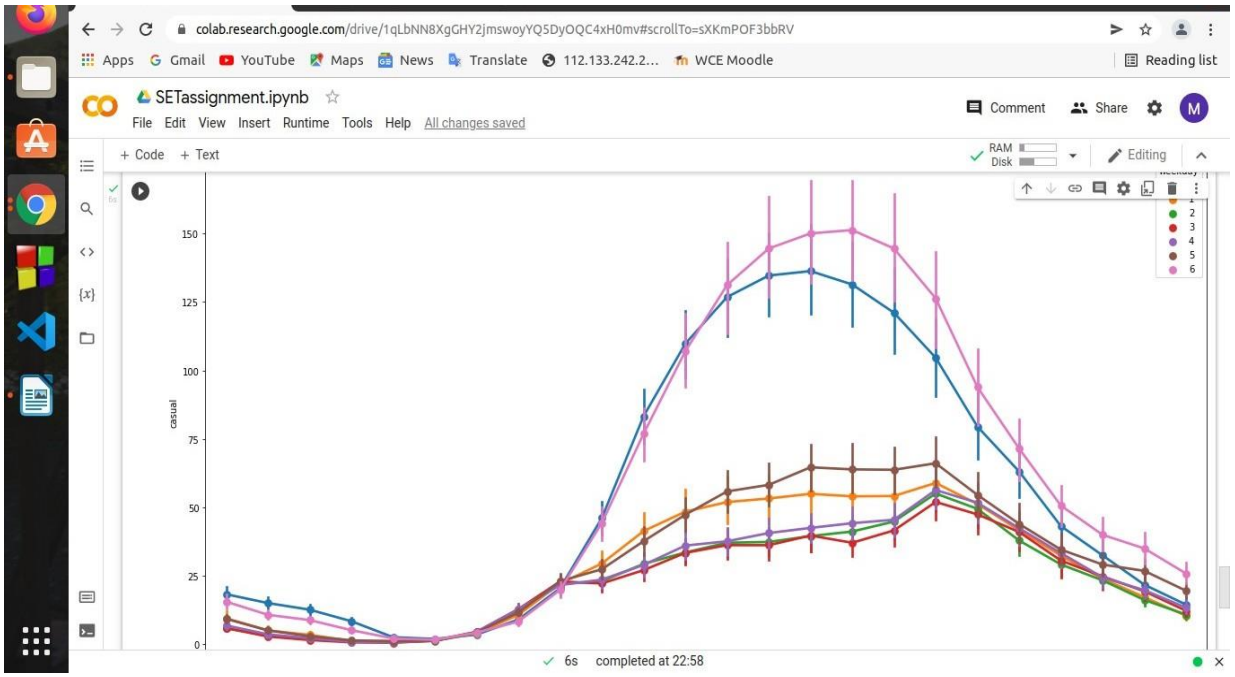
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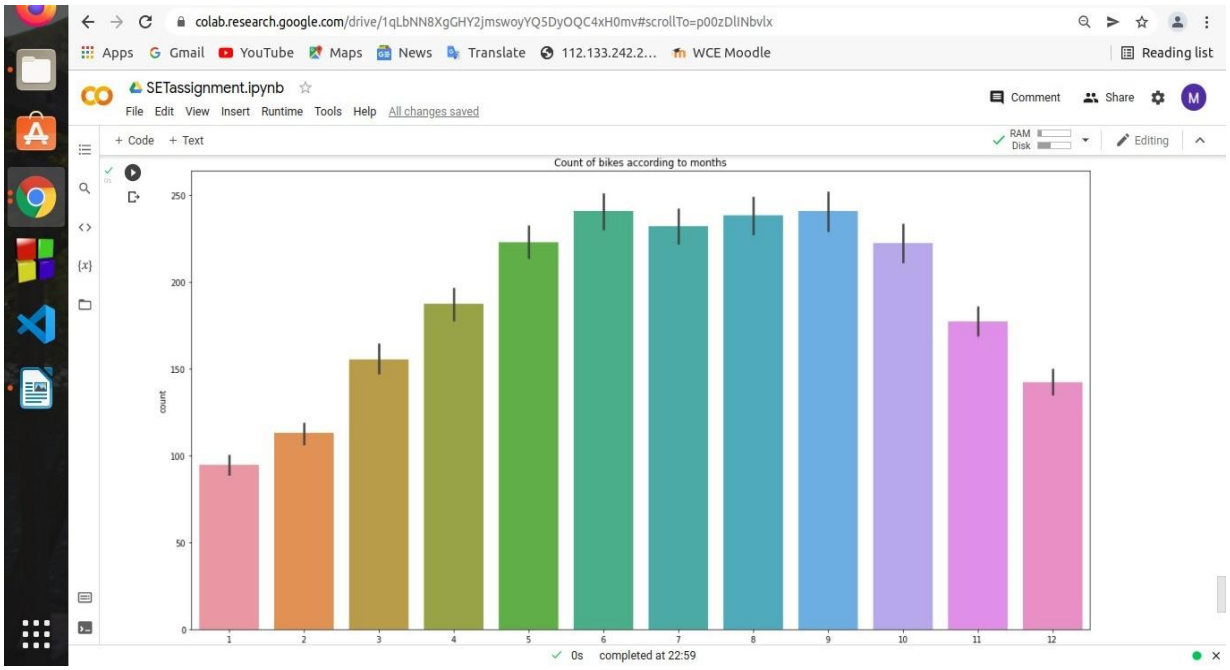
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Count of bikes according to months
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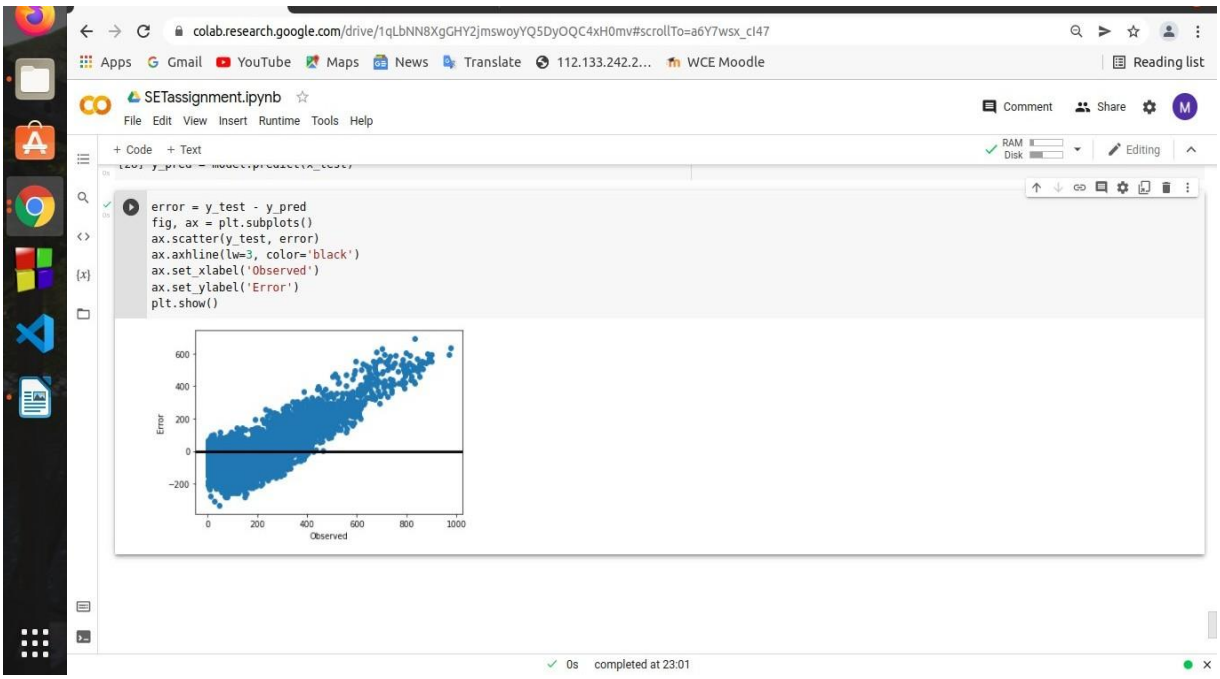
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error = y_test - y_pred
fig, ax = plt.subplots()
ax.scatter(y_test, error)
ax.axhline(lw=3, color='black')
ax.set_xlabel('Observed')
ax.set_ylabel('Error')
plt.show()
Error
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0 200 400 600 800 1000
Observed
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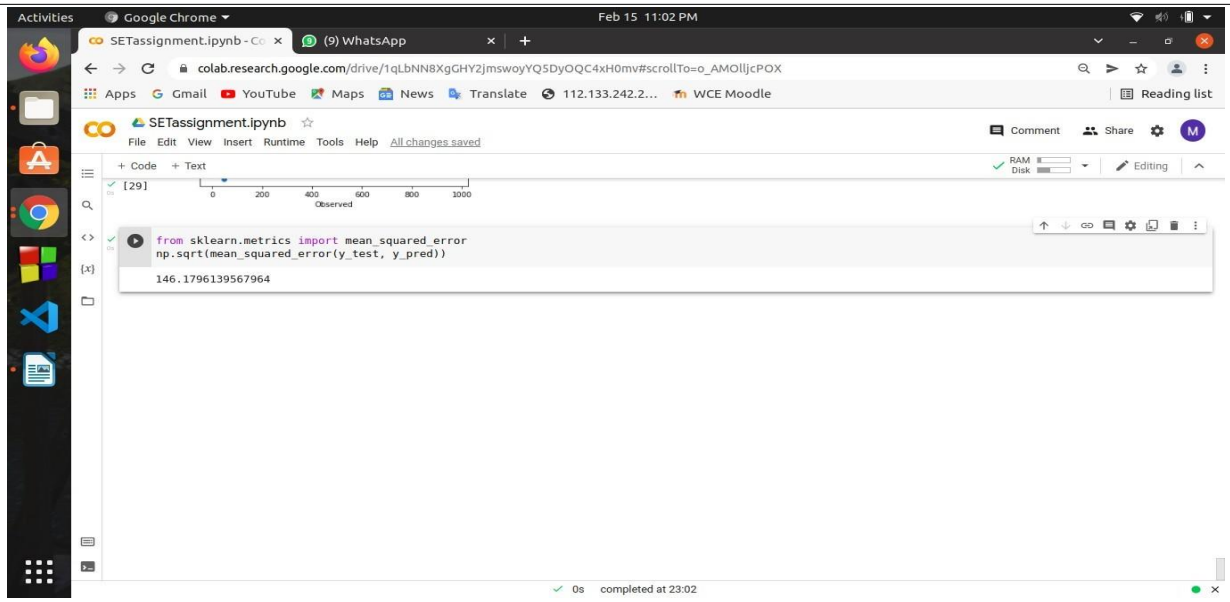
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Observed
from sklearn.metrics import mean_squared_error
np.sqrt(mean_squared_error(y_test, y_pred))
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