**Task #1 :**

1. Use data sources from COVID statistics:

Dataset 1

WHO dataset to get social economic health data by country

<https://data.world/resiport/who-dataset>

Dataset 2

COVID dataset

<https://www.kaggle.com/imdevskp/corona-virus-report?select=country_wise_latest.csv>

- Select country-wise-latest.csv

2. Please write code using python to extract the data using API and clean the data. Merge the datasets into a single one using key fields. You can limit the columns to be shown in the dataset. Create a computed column, "Recovered\_Percent" that lists the patients recovered from confirmed cases. Additionally, please create another computed column of your choice. When you respond to the project please let us know what additional column you have created.

3. Mark the python code with standard coding techniques and practises for documentation purposes. Also, use OOPS concepts using function/method/classes to accomplish the above task.

**Task #2 :**

Please document the below code using docstrings listing the functionality of the every step in the process and explain the differences between calling the class ClsDFInfo with and without using decorators.

Next,add a new method called "get\_df\_types" and return the data frame column types.

Call this method appropriately using decorator and without using decorator.

**Code#**

import pandas as pd

df\_covid19 = pd.read\_csv("https://raw.githubusercontent.com/CSSEGISandData/COVID-19/web-data/data/cases\_country.csv")

df\_covid19.head(3)

class ClsDFInfo:

def \_\_init\_\_(self, f):

self.f = f

def \_\_call\_\_(self):

print("Decorating", self.f.\_\_name\_\_, "\n")

self.f(self.get\_df\_cols,"cols in df:")

self.f(self.get\_df\_len, "len of df:")

def get\_df\_cols(self, df):

return df.columns

def get\_df\_len(self, df):

return len(df.columns)

@ClsDFInfo

def df\_info(func, desc):

z = func(df\_covid19)

print(desc, "----------\n", z, "\n\n")

def df\_info\_wod(func, desc):

z = func(df\_covid19)

print(desc, "----------\n", z, "\n\n")

df\_info()

# WITHOUT DECORATOR

print("------------------# WITHOUT DECORATOR ----------------")

func = ClsDFInfo(df\_info\_wod)

z = func.get\_df\_cols(df\_covid19)

print(z, "\n\n")

z2 = func.get\_df\_len(df\_covid19)

print(z2, "\n\n")