Problem 7

import pandas as pd

def article\_views(views: pd.DataFrame) -> pd.DataFrame:

    df = views[views['author\_id'] == views['viewer\_id']]

    df.drop\_duplicates(inplace=True)

    df.rename(columns={'author\_id':'id'},inplace=True)

    print(df)

    return df[['id']].sort\_values(by='id')

Problem 8

import pandas as pd

def invalid\_tweets(tweets: pd.DataFrame) -> pd.DataFrame:

    print(tweets)

    df = tweets[tweets.content.str.len() > 15]

    return df[['tweet\_id']]

Problem 9

import pandas as pd

def calculate\_special\_bonus(employees: pd.DataFrame) -> pd.DataFrame:

    employees['bonus'] = employees.apply(lambda row: row['salary'] if row['employee\_id'] % 2 != 0 and not row['name'].startswith('M') else 0, axis=1)

    result = employees[['employee\_id', 'bonus']].sort\_values('employee\_id')

    return result