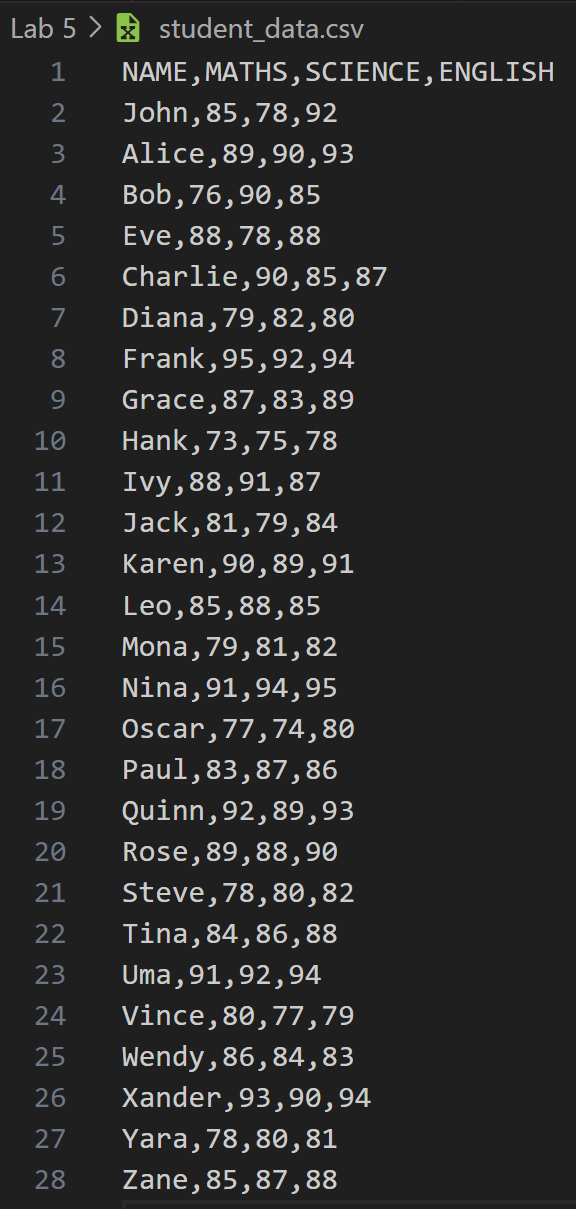
**Lab Assignment 5: Data Analysis**

Your task is to write a Python program that reads this CSV file, calculates the average score for each student, and then creates a new CSV file named "student\_average\_grades.csv”

* Steps to Solve
  1. Read the data from "student\_grades.csv" using CSV file handling in Python.
  2. For each student, calculate their average score across all subjects (Maths, Science, and English).
  3. Create average functions to calculate the average for each student.
  4. Store the student's name and their corresponding average score in a new dictionary.
  5. Write the data from the dictionary into a new CSV file named

"student\_average\_grades.csv" with two columns: "Name" and "Average”.

Data Set –



Code –

import csv

def read\_student\_data(input\_file):

    """Reads student data from a CSV file and calculates average scores."""

    student\_grade = {}

    with open(input\_file, "r") as f:

        reader = csv.DictReader(f)

        for row in reader:

            name = row['NAME']

            math\_score = int(row['MATHS'])

            science\_score = int(row['SCIENCE'])

            english\_score = int(row['ENGLISH'])

            avg\_score = calculate\_average(math\_score, science\_score, english\_score)

            student\_grade[name] = avg\_score

    return student\_grade

def calculate\_average(math\_score, science\_score, english\_score):

    """Calculates the average score of three subjects."""

    return round(((math\_score + science\_score + english\_score) / 3), 2)

def write\_student\_averages(output\_file, student\_grade):

    """Writes the student names and their average scores to an output file."""

    with open(output\_file, "w") as of:

        fieldnames = ['NAME', 'AVERAGE SCORE']

        writer = csv.DictWriter(of, fieldnames=fieldnames)

        writer.writeheader()

        for name, avg\_score in student\_grade.items():

            writer.writerow({"NAME": name, "AVERAGE SCORE": avg\_score})

    print("Average score calculated for all students and stored in file.")

def main():

    input\_file = "D:/5th Lab/Python/Lab 5/student\_data.csv"

    output\_file = "student\_data\_average.txt"

    # Read student data and calculate average scores

    student\_grade = read\_student\_data(input\_file)

    # Write the calculated averages to an output file

    write\_student\_averages(output\_file, student\_grade)

if \_\_name\_\_ == "\_\_main\_\_":

    main()

Output –

