Practical Project Part 1

Full Name: Meet Maheta

Course Name: CST8333

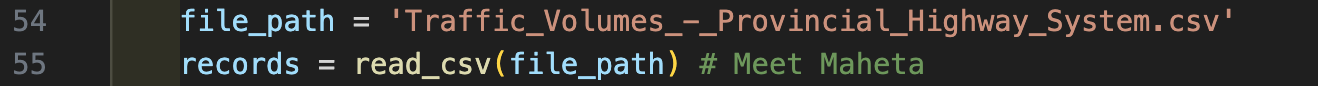
Assignment Title: Programming Language Research Project - Practical Project Part 1

Submission Date: May 26, 2024

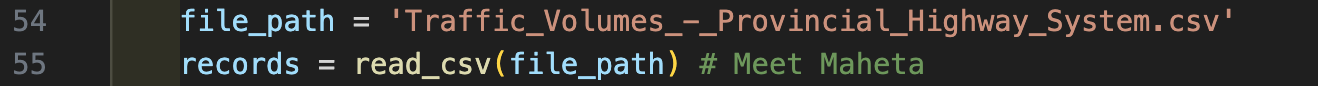
Evidence of Learning

**1. Variables:**

* file\_path (line 54): This variable holds the path to the CSV file



* records (line 54): This variable is a list that will store TrafficRecord objects created from the CSV data.



**2. Methods:**

* init (lines 4-12): The constructor method for the TrafficRecord class, which initializes the record with data from a dictionary.

A screen shot of a computer

Description automatically generated

* str (lines 14-20): This method returns a string representation of the TrafficRecord object

A black screen with text on it

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* read\_csv (lines 22-43): This function reads the CSV file and returns a list of TrafficRecord objects.

A screen shot of a computer program

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* display\_records (lines 45-53): This function loops over the list of TrafficRecord objects and prints each one.

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**3. Loop Structure:**

* for record in records (line 51-53): This loop iterates over each TrafficRecord object in the records list and prints it.

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**4. File-IO Reading from the Dataset:**

* with open(file\_path, newline='') as csvfile (line 34): This line opens the CSV file for reading.



**5. Exception Handling:**

* try-except block (lines 33-43): This block handles exceptions that may occur while reading the CSV file.

**A screen shot of a computer program

Description automatically generated**

**6. Use of an API Library:**

* csv (line 1): The csv module is used for reading the CSV file.

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**7. Array (or similar data structure):**

* records (line 58): This list stores instances of TrafficRecord objects.



Program Demonstration via Screen Shots

**Introduction:**

This section includes screenshots of the running program. The screenshots display records from the dataset and ensure that my full name, Meet Maheta, is visible on the screen.

**Description:**

* This screenshot shows the program reading the CSV file and displaying the first five records.
* Each record is displayed with its details, including fields like SECTION ID, HIGHWAY, SECTION LENGTH, and more.
* My full name, Meet Maheta, is visible at the bottom of the output to ensure it always remains on the screen.

A screenshot of a computer program

Description automatically generated

Source Code Commenting Example

# Meet Maheta

import csv

class TrafficRecord:

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

"""Initializes a TrafficRecord with a dictionary of data.

Args:

data (dict): A dictionary containing the data for the traffic record.

"""

self.data = {key: (value if value != '' else 'N/A') for key, value in data.items()}

def \_\_str\_\_(self):

"""Returns a string representation of the TrafficRecord.

Returns:

str: A formatted string representation of the traffic record.

"""

return '\n'.join(f"{key}: {value}" for key, value in self.data.items())

def read\_csv(file\_path):

"""Reads the CSV file and returns a list of TrafficRecord objects.

Args:

file\_path (str): The path to the CSV file.

Returns:

list: A list of TrafficRecord objects.

"""

records = []

try:

with open(file\_path, newline='') as csvfile:

reader = csv.DictReader(csvfile)

for row in reader:

record = TrafficRecord(row)

records.append(record)

except FileNotFoundError:

print("The file is not found.")

except Exception as e:

print(f"An error occurred: {e}")

return records

def display\_records(records):

"""Displays the data of each TrafficRecord.

Args:

records (list): A list of TrafficRecord objects.

"""

for record in records:

print(record)

print()

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

file\_path = 'Traffic\_Volumes\_-\_Provincial\_Highway\_System.csv'

records = read\_csv(file\_path)

if records:

display\_records(records[:5]) # Display first 5 records

print("\nFull Name: Meet Maheta") # Meet Maheta