**Worksheet for week 5**

**Reading from files:**

1. Create a simple .txt file within your project in PyCharm. This is achieved by right-clicking on project name, choose New, File and type the file name with the extension as follows: simpleText.txt. make use of with open and:
   1. Put some text into the file – a few sentences
   2. Read the entire contents and print it
   3. Read one and print it
   4. Use readlines() to print as a string in a list, use time.sleep(2) to slow it down
2. Using the simple.txt file above write a function the reads the file and counts the occurrence of each word as well as how many vowels are in each sentence.
3. Read the sales data from the csv file given to you. Make use of the sales.csv file and write a function to calculate total amount to pay given the quantity and the price. Include a grand total of all sales.  
   **Hints:** using a for loop split each row of the csv file into parts. Once you have a [] of each row use a for loop to determine the total for each sale as well as the total sales amount for all sales.  
   **This exercise forms part of a ChatGPT formative assessment. Once you have completed this exercise ask ChatGPT to give you feedback on your solution. After reading the feedback decide what grade you would give yourself out of 10. For example, if the feedback came back as almost correct however …. then give yourself 8 or 9 out of 10. You need to then go to the link given to you in Canvas – under labs week 5 – and complete the questions.**
4. You need to write a solution for the following sales analysis for an e-commerce company problem. This company would like to analyse its monthly sales data to understand performance, customer demographics and product popularity. However, the data is stored in 3 different files, given to you.  
   Sales data -> order\_id, product\_id, cust\_id, quantity, sale\_date  
   Product info -> product\_id, product\_name, price  
   Customer info -> cust\_id, cust\_name, age, location  
   You need to create a solution for the company that displays a monthly report. The key elements for the report are:  
   total sales -> total sales for each product   
   customer demographic -> details of a customer (include name and city) purchasing a product (you only need to show the prod\_id )  
   Hint: In order to solve this you need to create a {} for sales.csv, products.csv and customer.csv so that you can manipulate data to process reports.

**Writing to files:**

1. Given the following student data write a report to a file. The student data is as follows:  
   student\_data = [  
    {“student\_id” : “12345”, “grade1”: 47, “grade2”: 20, “grade3””65},  
    {add the others as below}  
    ]  
   Make use of f-string to write() the report to the file called student\_report.csv. This is what the file should look like, it also includes the average of the students rounded off to 2 decimals.  
   A screenshot of a computer

   Description automatically generated
2. (a) Using the student\_report.csv file read the contents in and print to the screen in the following format (use the csv.reader() to do this:  
   A screen shot of a black screen

   Description automatically generated  
   (b) Using the student\_report.csv open the file again and read using csv.reader(). This time create a dictionary with each row. Challenge: the headers must not be read in. Make use of next() to skip the headers.
3. Write an application with a menu to solve the following problem:  
   Find My Pet:  
   1. Add a pet  
   2. Search a pet’s details  
   3. Print a summary of all pets  
   4. Exit  
   This application is about entering pet’s details to a system. Code each function linked to the menu above.  
   **Add a pet:**Ask the user to enter a microchip number, pet’s name, breed and gender. Write these details to a file called “pets.csv” make use of csv.writer with a delimiter of “;”, hint: use writerow([microchip, name, breed, gender])  
   **Search for a pet’s details:**Pull the file in as a dictionary. Ask the user for the pet’s microchip number or name to locate the pet’s details. Display the details. Hint: make use of get() to search for the pet if the pet is found display the details otherwise print “pet not found”  
   **Report:**Pull the details in from the file and display in a well formatted manner each pet with their details.