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| **Programming 1 (PRG1)**  Diploma in IT / DS / CSF / IM / CICTP  Year 1 (2023/24) Semester 1 | Week **5** |
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| **Exercise 5: File I/O** | |

**OBJECTIVES**

At the end of this exercise, students should be able to:

* Read and write text files

**IMPORTANT**

* Create a folder, **Week05**, in your hard disk.
* Create Python programs with the given file names in the **Week05** folder created above. Do add the description, your name and student ID as comments at the beginning of each program.
* At the end of the session, compress all the files in your **Week05** folder (i.e. the Python program files and this word document) and submit the zip file in POLITEMall.

Activity 1 ( file name: ToDoList.py )

Create a text file called todolist.txt using Notepad that contains the following text:

To do:

- Prepare lecture slides

- Narrate lecture slides

- Laugh at jokes

- Upload to Brightspace

Save the file in a known directory, e.g., c:\PRG1\_data\todolist.txt

Write a Python program to read the first 3 lines of the file, read the contents line by line and print the contents of the file to screen without extra blank lines in between the lines.

[ hint: use readline() and strip() ]

**Expected output**



Activity 2 ( file name: CreatePrices.py )

A coffee shop’s prices are given in the following list:

prices = [ ["kopi", 0.4],

["teh", 0.4],

["milo", 0.5],

["soft drinks", 1.20] ]

Write a Python program to read this list and create a text file called prices.txt that contains the following text:

kopi: $0.40

teh: $0.40

milo: $0.50

soft drinks: $1.20

Activity 4

[ hint: use write() ]

Activity 3 ( file name: AppendPrices.py )

Using prices.txt created in the earlier activity. Write a Python program to append 2 items shown below to the file.

[ hint: use the append mode when opening the file ]

teh peng: $1.20

milo peng: $1.40

The file prices.txt should now contain the following:

kopi: $0.40

teh: $0.40

milo: $0.50

soft drinks: $1.20

teh peng: $1.20

milo peng: $1.40

**OPTIONAL ACTIVITIES**

Activity 4 ( file name: CountWords.py )

Write a Python program to perform read and write functions of file I/O.

1. Create a text file, data.txt, with your own choice of data.
2. Write a Python program to perform the following tasks:

* Prompt user for the input file name
* Open the text file with the given filename, count the number of words in the document and display it on the screen.
* Write a message showing the number of words in the document to the output file, ‘output.txt’ [ e.g. There are X words in the document (*remember to replace X by the actual number of words*) ]. Display also a message indicating that data successfully written to file.

Sample output (input value is underlined):

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| Please enter the filename: data.txt  Number of words in data.txt: 15  Number of words successfully written to output.txt |

data.txt:

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| Baby Shark, doo-doo, doo-doo  Mommy Shark, doo-doo, doo-doo  Daddy Shark, doo-doo, doo-doo  It's the end |

output.txt:

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| There are 15 words in the document. |

Activity 5 ( file name: Cars.py )

Write a Python program to display car price from the data file, accept order from customer and print customer’s order to output file.

1. Download the file cars.txt from POLITEMall.
2. Write a Python program to perform the following tasks:

* Read the data in the file cars.txt
  + display the price list on the screen as shown in sample output below
  + add the car model to a list, car\_list
  + add the prices to a list, price\_list
* Prompt user for the input of order number, customer name and choice of car (as shown in the sample output below).
* Write the customer’s order detail (as shown in the output file below) to a text file. The text file should have the same name as the order number.
* Display a message indicating “Car has been successfully ordered” on the screen.

Data from cars.txt:

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| Fesla Corp  \*\*\*Price List\*\*\*  Fesla Model S : $87490  Fesla Model 3 : $39990  Fesla Model X : $97490  Fesla Model Y : $46990 |

Sample output (input values are underlined):

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| 1. Fesla Model S : $87490  2. Fesla Model 3 : $39990  3. Fesla Model X : $97490  4. Fesla Model Y : $46990  Enter the order number: x123  Customer Name: Peter Tan  Enter car choice: 1  Car has been successfully ordered. |

Output file (x123.txt):

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| Peter Tan ordered the Fesla Model S at the price of $87490 |

-- End of Exercise --