Working With External Data Sources — Output

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Introduction

WELCOME TO THE OUTPUT TASK!

Until now, the Python code you've been writing comes from one source and only goes to one place - you type it in at the keyboard and its results are displayed in the console. But what if you want to read information from a file on your computer, and/or write that information to another file?

This process is called file I/O (the "I/O" stands for "input/output"), and Python has a number of built-in functions that handle this for you. In this task, we will look at file output.

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The best way to get help is to login to **www.hyperiondev.com/portal** to start a chat with your mentor. You can also schedule a call or get support via email.

Your mentor is happy to offer you support that is tailored to your individual career or education needs. Do not hesitate to ask a question or for additional support!

Based on the success of our previous article on 10 types of software development, we've decided to build on that to share 5 more types of what you could be doing as a software engineer in the field!

1. Front-end web development

2. Product Management

3. Site Reliability Engineer

4. Machine Learning developer

5. Natural Language Processing developer

Here is a link to a more in-depth explanation of these 5 types of software engineer.

WRITING DATA TO A TEXT FILE

Until now, your programs have been using the print statement to display output to your screen. We now want to write to the most simple type of file, text files, using Python.

Just like when reading from a file, when we want to write to a file we need to open it first. Also, like when reading from a file, the file needs to be closed so that resources that are tied with the file are freed.

Let's see how to create a new text file and write data to it:

```
ofile = open('output.txt', 'w')
```

We create a new file called **output.txt** (it doesn't exist yet) in write mode. Python will automatically create this file in the directory/folder that our program is in.

We ask the user for their name. When they enter it, it is stored as a String in the variable, name:

```
name = input("Enter your name: ")
```

We use the write function to write the contents of the variable name to the text file, which is represented by the object, `ofile`.

```
ofile.write(name+"\n")
```

You must run this Python file for the file **output.txt** to be created with the output from this program in it.

We write to the file again, but the current contents of the file will not be overwritten. Instead, it will be written on the second line of the text file:

```
ofile.write("My name is on the line above in this text file.")
```

Don't forget to close the file!

```
ofile.close()
```

A note from our coding mentor
Masood

Have you heard about Fred Cohen? He was the first person to create a computer virus.

In 1983 he designed a hidden program that could infect a computer, copy itself and then infect other computers through the use of a floppy disk. But his contributions here were not limited to inconveniencing millions of users in the future - he was actually the pioneer of computer virus defence techniques.
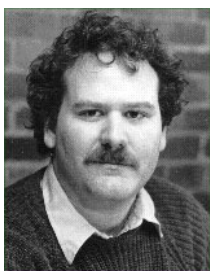
Instructions

First, read **example.py**. Open it using IDLE.

- Run **example.py** to see the output. Feel free to write and run your own example code before doing the Task to become more comfortable with Python.

Compulsory Task 1

Follow these steps:

- Write a program that allows students to register for an exam venue.
  - First, ask the user how many students are registering.
  - Create a for loop that runs for that amount of students
  - Each loop asks for the student to enter their ID number.
  - Write each of the ID numbers to a Text File called **RegForm.txt**
- This will be used as an attendance register that they will sign when they arrive at the exam venue.

Compulsory Task 2

Follow these steps:

- Create a new Python file in this folder called **Optional_task.py**
- Create a text file called **numbers1.txt** that contains Integers which are sorted from smallest to largest.
- Create another text file called **numbers2.txt** which also contains Integers that are sorted from smallest to largest.
- Write the numbers from both files to a third file called **allNumbers.txt**
- All the numbers in **allNumbers.txt** should be sorted from smallest to largest.

Completed the task(s)?

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Review work

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