

Task 4:



Welcome to Task 4. This task deals with more advanced aspects in Python such as reading and writing from files, and writing functions. After Task 4 is done, we'll be able to get started on more exciting topics such as Bioinformatics and an introduction to Artificial Intelligence.

Instructions:

Read **example.py**. Open it using **Notepad++**. This should help you understand more advanced Python. You are not required to read the entirety of **AdditionalReading.pdf**, it is purely for extra reference.

This example deals with Python and its ability to read and write files and how to define Python functions which are similar to Java methods. You should be able to recall and apply all the tools introduced in Task 1 such as lists, String handling , getting input etc.

Compulsory exercise to finish Task 4:

Now, create a python file called **forgetful.py**. Imagine your friend was very forgetful and always entered his email password incorrectly. You want to write a python program that takes all his incorrect password entries, stores them in a list and then records all his incorrect password entries in a textfile called **wrongpasswords.txt**.

Example: your friends password is 'rusty'. But he enters 'rusty123', 'Rusty', 'rustless' before finally remembering his password is 'rusty' and entering it correctly.

In this situation **wrongpasswords.txt** should read this exactly:

Incorrect password 1: rusty123

Incorrect password 2: Rusty

Incorrect password 3: rustless

Correct password entered on 4th entry.

The program should ask the user for input by saying 'Please enter your password'. You can use code from the program you wrote in Task 1. The correct password will always be 'rusty' but the user can of course enter any String.

Good luck!

BONUS Optional Challenge:

Edit your completed program so that the number of characters your friend gets wrong is also stored for each incorrect password.

In the same situation given above, **wrongpasswords.txt** should read this exactly:
Incorrect password 1: rusty123 , wrong by 3 characters.
Incorrect password 2: Rusty , wrong by 1 characters.
Incorrect password 3: rustless , wrong by 4 characters.
Correct password entered on 4th entry.

You should define a separate function in your code, called **countDifference**, that takes in a String.

Need some help?

Firstly, make sure you have installed and setup all programs correctly. You have setup **Dropbox** correctly if you are reading this, but Python may not be installed correctly.

Visit www.rmoola.com/pythonlessons.html for a complete guide on how to setup the software.

Make sure you have **Python version 2.7** installed as per the instructions and not an older nor earlier version of Python.

Please refer to the pdf file **PythonReference.pdf** if you would like more examples of Python coding and explanations.

If you having problems understanding example.py or how to complete Task 4, please contact students@hyperiondev.com. One on one help sessions are available over the internet or in person in Westville, Durban or UKZN (Westville Campus) and these can be arranged by contacting us. **We employ paid teachers who are here to help you!**

If there are any specific areas that are unclear or areas that require additional information:

Please add to 'What do you want to learn.txt' and one of our teachers will assist you once they read your request.

A peek ahead:

Task 5: An introduction to Bioinformatics, DNA, Genetics, genetic diseases and how this relates to Python. Python problems showing genetic mutations and identifying mutations, nucleotides and amino acids. Sequence alignment of DNA.

