

Lab 2 - Basic Python Scripting

Course & Instructor Info

Course Name: SWE 4504 - Software Security Lab

Instructor: Imtiaj Ahmed Chowdhury, Lecturer, CSE, IUT

NOTE: Some of the contents of this lab has been produced based on material from **National Cybersecurity Training and Education Center** (NCyTE), USA.

Objective

After successful completion of the lab, students will demonstrate proficiency in using Python as a scripting language to perform simple operations using Python's fast, easy-to-understand programming constructs. Knowledge obtained from this lab will aid students to write exploit scripts for common vulnerabilities in later labs.

Lab Tasks (complete within the lab)

For the tasks in the lab, you need to be able to explain to the instructor how you solved these.

Task 1

Marks: 6

Download `top-100k-password-list.txt` from Google Classroom. Your task is to write a program in Python to find all the passwords which start with `'pass'` and save it in a file named `passwords_for_dummies.txt`. If no password is found, store `No password starts with 'pass'`.

Your code must handle possible errors such as *invalid file name* or such. Marks will be deducted if obvious errors are not handled.

Task 2

Marks: 9

In this task, you'll take a *string* of maximum length **5** as input from user and search `top-100k-password-list.txt` for all the passwords that contain the input *string* as a substring. Print the output in the console. If none found, print `No password contains <input_string>`. You have to use Python's `try/except` construct to code your solution.

Your code must handle possible errors such as *empty input string* or such. Marks will be deducted if obvious errors are not handled. Print appropriate error messages for corresponding error cases.

Lab Assignment (complete before next lab and submit in Google Classroom)

Task 1

Marks: 20

Write a program in Python that will take **two arguments**. First argument will specify a *string* of maximum **5** characters in length and you need to find all passwords from `top-100k-password-list.txt` that *end* with that string. Second argument will be a *filename* where you will store the found passwords. *filename* can't be more than **20** characters. Note that, a linux *filename* can contain any character other than `/`. Print proper usage of arguments and their length if user doesn't conform to the provided requirements.

For error checking, your code should be able to handle:

- Empty second argument. Ex: `./solve.py string`
- Invalid string as first argument. Ex: `./solve.py 😊 😊`
- Invalid filename as second argument. Ex: `./solve.py hello /`

Print appropriate error message for each of the above error cases. Each error message must begin with the string: `<python_file_name.py>:` .

Submission

Submit the `.py` file in Google Classroom assignment. Rename your file in the format `Lab2_ID.py`.