**LAB-1(**turnitin**)**

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|  | **NAME :** PABOLU SANDEEP |
|  | **ID :** 16230088 |
|  | **CLASS ID:** 35 |

* **Objective:**

The main goal of this lab assignment is to get familiar with python coding. It has various tasks relating to the basic concepts of python dealing with the lists, defining the functions, setting up validation criteria, searching and comparing elements, calculating the mathematical relations.

* **Features**

This assignment is basically included of 4 different tasks.

Task 1: In this the basic requirement was to setup the validation criteria for the passwords. There were four different conditions to be satisfied like:

* Size 6-16
* One numerical at least
* One of [$@!\*]
* Lowercase and uppercase

Task 2: In this the user was to enter a statement based on the statement there are various loops running to display different parts of the sentence like:

* Middle word
* Longest word
* Printing the statement in reverse order.

Task 3: In this the triplets summing to 0 are to be extracted. For this a function is created and the elements in the list are compared with the first and the last and thereby decreasing and increasing to another element.

Task 4: In this the user is to enter the names of the students of 2 different classes thereby finding out the students common to both the classes and then calculating the students non-common in both the classes.

* **Configuration**

The python version used for this lab assignment is 3.5.2

The coding has been done in python in the pyCharm environment.

* **Input/output (screenshots)**

Task 1:

Code with output:

![A screenshot of a social media post

Description generated with very high confidence]()

Missing number:

![A screenshot of a social media post

Description generated with very high confidence]()

Missing special character:

![A screenshot of a social media post

Description generated with very high confidence]()

Missing upper case:

![A screenshot of a cell phone

Description generated with very high confidence]()

Task 2:

Code with output:

![A screenshot of a social media post

Description generated with very high confidence]()

![A screenshot of a social media post

Description generated with very high confidence]()Task 3: Code with Output

Code:![A screenshot of a cell phone

Description generated with very high confidence]()

Task 4:

Code with output:

![A screenshot of a social media post

Description generated with very high confidence]()

* **Explain the implementation including code snippet**

Each and every code is explained with the comments beside every line in the images below :

The codes with their explanation are:

Task 1: In this the input is taken from the user and then the various conditions are verified to check if the entered password is acceptable or not.

![A screenshot of a cell phone

Description generated with very high confidence]()

Task 2:

![A screenshot of a social media post

Description generated with very high confidence]()In this the user is asked to enter a random statement of which the middle word the longest word and the statement in the reverse order is printed back to the user.

![A screenshot of a social media post

Description generated with very high confidence]()Task 3: In I have given a set of numbers and the searching and comparing all the other numbers in the array and checking for their sum to be zero printed those triplets in the output.

Task 4:

In this we have used the “in” and “not in” functions to figure out the common and non-common students in the 2 different classes.

![A screenshot of a social media post

Description generated with very high confidence]()

* **Explain about the deployment**

The basic deployment is the code is written in python. It is deployed in pyCharm environment. The version of python installed is 3.5.2 . The pyCharm used is of community edition.

* **Limitation**

Task 1:

* This works for only specific special characters if another symbol is used it gives an error.
* This format of code makes it complicated for the coder for more specific passwords with more specifications.

Task 2:

* If there are multiple words of same length it will not be able to print all of them.

Task 3:

* If the range is high then the time for execution is too high.
* The input can’t be given by the user as the negative integers are no accepted.

Task 4:

* The process is fine for small inputs but is very time consuming for larger inputs.
* **References**
* https://www.geeksforgeeks.org
* [https://stackoverflow.com](https://stackoverflow.com/)
* <https://www.youtube.com/watch?v=4NpYAe-JXr0>
* https://docs.python.org/3/library/index.html