

RANDOM PASSWORD GENERATOR

ASSIGNMENT-2

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INTRODUCTION

A password generator is a software tool that creates random or customized passwords for users. It helps users create stronger passwords that provide greater security for a given type of access.

Some password generators are simply random password generators. In this project we are going to make one that produces complex/strong passwords with combinations of numbers, uppercase and lowercase letters, and special characters such as braces, asterisks, slashes, etc.

Password generators help those who have to constantly come up with new passwords to ensure authorized access for programs and to manage a large number of passwords for identity and access management. Other kinds of tools include a password vault, where users manage large numbers of passwords in a secure location.

This application can generate random password, with the combination of letters, numeric, and special characters. One can mention length of the password based on requirement and can also select the strength of the password i.e. poor, medium and strong.

METHODOLOGY

The objective of this project is to create a password generator using python. The password generator project will be build using python modules like Tkinter, random, string.

In this project, the user has to select the password length, strength and then click on the “**Generate Password**” button. It will show the generated password below.

Steps:

1. Import Libraries

To build this project we will use the basic concept of python and libraries – Tkinter, random, string

* **Tkinter** is a standard GUI library and is one of the easiest ways to build a GUI application.
* **Random** module can generate random numbers
* **String** module contains a number of functions to process the standard python string.

1. Initialize Window

* **Tk()** initialized tkinter which means window created
* **geometry()** set the width and height of the window
* **title()** set the title of the window
* **Label()** widget use to display one or more than one line of text that users can’t able to modify.
* **Entry()** to get or display values
* **Radio()** buttons for choice selection
* **root** is the name which we refer to our window
* **text** which we display on the label
* **font** in which the text is written
* **pack** organized widget in block

1. Function to Generate Password

* **Select Password Length**

len\_label = Label(root, text = ‘Length’ )

click = IntVar() [length=click.get()]

**Length of password** is an integer type variable that stores the length of a password.

Here we used **OptionMenu** widget for making the dropdown menu for the selection of length.

* **Select Strength of Password**
  + Firstly strengths are mentioned that is **poor** (containing lowercase and uppercase alphabets), **medium** (containing lowercase, uppercase alphabets and digits), **strong** (containing lowercase, uppercase alphabets, digits and special characters).
  + Password = “” is the empty string.
  + There are 3 Loops for 3 different strengths that will generate a string of length filled by the user which is a combination of an uppercase letter, a lowercase letter, digits, and a special symbol and that string will store in password variable.

1. Button to Generate Password

* **Button()** widget used to display button on our window
* **command** is called when the button is clicked
* **Entry()** widget used to create an input text field
* **Grid()** widget used to mention the row and column.

DATA FLOW DIAGRAM (DFD)

LEVEL 0 – DFD

DATA

RESULT

**USER**

LEVEL 1 – DFD

**USER**

FLOW CHART

**START**

**END**

**GENERATE PASSWORD**

**MEDIUM**

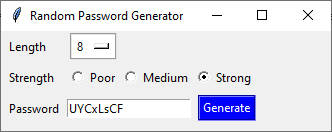
**STRENGTH**

**LENGTH OF PASSWORD**

**POOR**

**STRONG**

RESULT



This is the end result of random password generator. Here the user has to firstly select the required length between 5 to 20 (default is 8), then choose the strength for the password accordingly. Then press the Generate button which will show the password. The user can keep on pressing the button until he is satisfied with the password.

SUMMARY

With these steps, we have successfully created a random password generator project using python. We used popular tkinter library to rendering graphics in our display window and we also learned about random library. We learned how to create buttons, input text field, labels. In this way, we successfully created our password generator python project. Hope you enjoyed it

The password generated using alpha-numerical random password mechanism that is illustrated above is practical and can be used with great results. When the password is selected manually, most of the time, the users select the password that are related to himself or herself and related to any of the event. This gives the space for the intruders to deploy various attacks in breaking the passwords. The random generated passwords avoid this particular situation. One of the drawbacks could be the difficulty in memorizing the randomly generated password. But when comparing the security achieved through the randomly generated password, it is much preferable than the manually chosen password. Since, the encryption and decryption standards are simple, it is cost effective. The above done work also creates awareness and interest to start exploring this field more.