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CPS 3320

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Project #2

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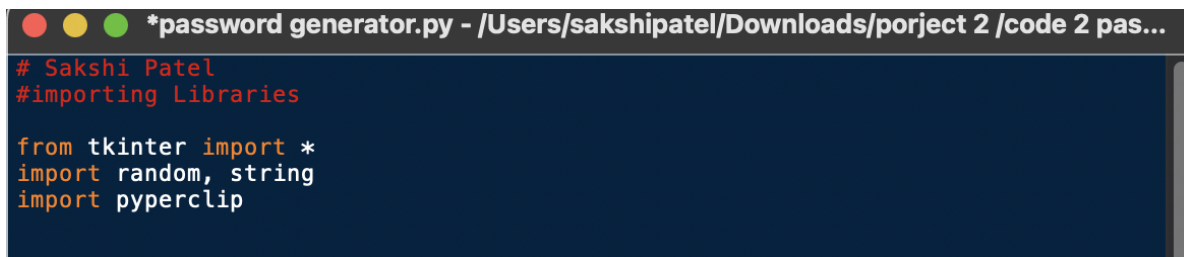
Write-up

Password Generator

Password Generator is a tool that generates passwords based on the given guidelines that you set to create an unpredictable strong password for your accounts. The Password generator tool creates a random and customized password for users that helps them to create a strong password which provides greater security.

The objective of this project was to create a password generator using python. The password generator project will be built using python modules like Tkinter, random, string, pyperclip. In this project, the user has to select the password length and then click on the “Generate Password” button. It will show the generated password below. If the user clicks on the “Copy To Clipboard” button, then it will copy the password automatically. Moreover, to build this project I used the basic concept of python and libraries – Tkinter, pyperclip, random, string.

The first step was to import the libraries

A screenshot of a code editor window with a dark blue background. The title bar at the top shows three colored circles (red, yellow, green) followed by the text '*password generator.py - /Users/sakshipatel/Downloads/project 2 /code 2 pas...'. The code is written in a monospaced font with syntax highlighting: comments are in red, keywords are in orange, and identifiers are in white. The code shown is:

```
# Sakshi Patel
#importing Libraries

from tkinter import *
import random, string
import pyperclip
```

Second step is to Initialize the window

```
###initialize window

root =Tk()
root.geometry("400x400")
root.resizable(0,0)
root.title("PASSWORD GENERATOR")
```

- Tk() initialized tkinter which means window created
- geometry() set the width and height of the window
- resizable(0,0) set the fixed size of the window
- title() set the title of the window

Then I used Label() widget to display one or more than one line of text that users aren't able to modify.

```
#heading
heading = Label(root, text = 'PASSWORD GENERATOR' , font = 'arial 15 bold').pack()
Label(root, text = 'By Sakshi Patel', font = 'arial 15 bold').pack(side = BOTTOM)
```

- 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

The third step was to select the password length:

```
#select password length
pass_label = Label(root, text = 'PASSWORD LENGTH', font = 'arial 10 bold').pack()
pass_len = IntVar()
length = Spinbox(root, from_ = 8, to_ = 32 , textvariable = pass_len , width = 15).pack()
```

For that I used:

- pass_len is an integer type variable that stores the length of a password.

- To select the password length we use Spinbox() widget.
- Spinbox() widget is used to select from a fixed number of values. Here the value from 8 to 32

Fourth step was to write a function that can generate the password

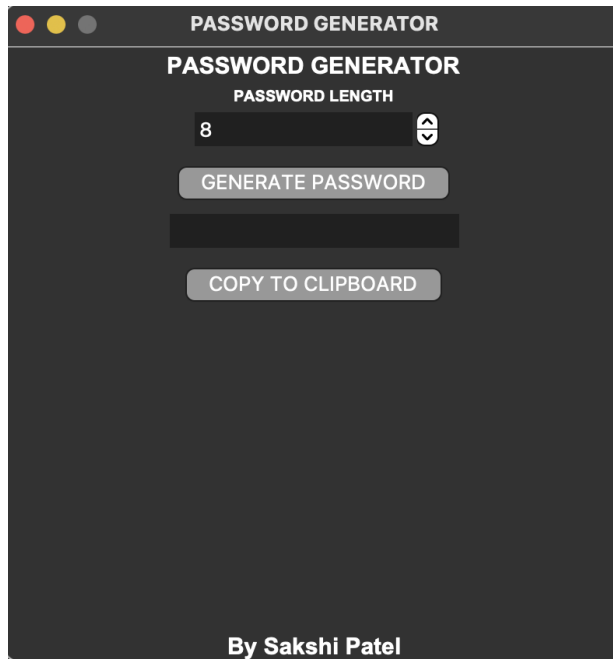
```
#define function
pass_str = StringVar()

def Generator():
    password = ''
    for x in range (0,4):
        password = random.choice(string.ascii_uppercase)+random.choice(string.ascii_lowercase)+random.choice(string.digits)+random.choice(string.punctuation)
    for y in range(pass_len.get()- 4):
        password = password+random.choice(string.ascii_uppercase + string.ascii_lowercase + string.digits + string.punctuation)
    pass_str.set(password)
```

- pass_str is a string type variable that stores the generated password
- password = "" is the empty string
- First loop will generate a string of length 4 which is a combination of an uppercase letter, a lowercase letter, digits, and a special symbol and that string will be stored in a password variable.
- The second loop will generate a random string of length entered by the user – 4 and add to the password variable. Here we minus 4 to the length of the user because we already generate the string of length 4.

And then lastly I just had to add a function to Copy Password. So for that I used pyperclip.copy() to copy the text to clipboard.

Here is my Output:



The image shows a screenshot of a macOS-style application window titled "PASSWORD GENERATOR". The window has a dark gray background and a title bar with three colored window control buttons (red, yellow, gray) on the top left. Inside the window, the title "PASSWORD GENERATOR" is repeated in a bold, white font. Below the title, the text "PASSWORD LENGTH" is displayed in a smaller white font. A text input field contains the number "8", and to its right is a small white up/down arrow icon. Below the input field is a light gray button with the text "GENERATE PASSWORD". Underneath this button is a dark gray rectangular box, presumably for the generated password. Below the box is another light gray button with the text "COPY TO CLIPBOARD". At the bottom of the window, the text "By Sakshi Patel" is displayed in a white font.