APPENDIX 1

PASSWORD GENERATOR

END TERM REPORT

by

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OCTOBER , 2020

APPENDIX 2

Student Declaration

This is to declare that this report has been written by me. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. I aver that if any part of the report is found to be copied, I shall take full responsibility for it.

Signature:

U.Ajay

Name: UPPU AJAY

Roll Number:56

Place: LOVELY PROFESSIONAL UNIVERSITY, PHAGAWARA
Date: 31/10/2020

APPENDIX 3

TABLE OF CONTENTS

TITLE **PAGENO.**

APPENDIX 4

BONAFIDE CERTIFICATE

Certified that this project report **“Password Generator”** is the bonafide work of **“Uppu Ajay”** who carried out the project work under my supervision.

Signature of the Supervisor:-

Name:-

Academic:

Designation:-

ID of Supervisor:-

1.BACKGROUND AND OBJECTIVES OF THE PROJECT ASSIGNED

INTRODUCTION

- Password Generator is the project built by using python programming Language. It is a tool that generates passwords based on the given inputs like size of the password and generating the strong password which is unpredictable.

- The Password Generator tool creates a random strong Password which provides a greater security for the accounts.

- With growing technology, everything has relied on data and securing these data is the main concern. Passwords are meant to keep the data safe that we upload on the Internet.

- An easy password can be hacked easily and all the personal information can be misused. In order to prevent such things and keep the data safe, it is quite necessary to keep our passwords very strong.

- The simple application Password Generator which can randomly generate strong passwords using Python **Tkinter** module.

- This project can generate random password, with the combination of letters, numerics, and special characters. One can mention length of the password based on requirement and can also select the strength of the passwords.

- Password Generator is written in python using Tkinter for graphical user interface(GUI). This is a Simple GUI Based Project which is very easy to understand and use to generating Random passwords. While the user can generate a random password according to different sizes by selecting the size with scrolling option.

- In order to generate a password first, the user has to select a size range using the slider. It also Displays with a visual colour coded system which indicates the strength of the password, starting from very weak to excellent password strength.

- After Generating the Random Password , the user can copy the password to the notepad by clicking (Ctrl+v) from keyboard in notepad then the password will be copied and pasted.

- This GUI based Password Generator provides the simplest way for generating a strong password for the users. In short, this project only focuses on generating random passwords

- The Password Generator is a simple project developed using python programming Language. This project is GUI based for user which helps in creating unique passwords from the size of the users inputs.

- The random module can generate random numbers.

- Python offers multiple options for developing GUI (Graphical User Interface). Out of all the GUI methods, tkinter is the most commonly used method. It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter is the fastest and easiest way to create the GUI applications. Creating a GUI using tkinter is an easy task.

- **Button** is used to add a button in your application, this widget is used.

- **Frame** acts as a container to hold the widgets. It is used for grouping and organizing the widgets.

- **We can** generate a random string password with special characters using three-string constants, I.e., string.ascii_letters , string.digits and string.punctuation along with random.choice function

- **string** module contains a number of functions to process the standard python string.

- **Out come of project :** the out come of the project is to create graphical user interface. using Tkinter GUI password generator.

2. Description of the project

The first step is to Import Libraries

```
try:
   from tkinter import *
except ImportError:
   from Tkinter import *
import
from pwgenfunc import RandPass
```

The above code is used to create the tkinter module used for Graphical user interface. Tkinter module is imported in this project. Tkinter is a standard GUI library and is one of the easiest ways to build a GUI application.

```
def pwGenerator(size = 8):
   data = RandPass(size)
   new_password = data[0]
   pw_strength = data[1]
   pw_color = data[2]
   PASSWORD.set(new_password);
   lbl_strength.configure(foreground="white", background=pw_color, text=pw_strength, font=('sans serif', 10, 'bold'), bd=10, height=1, width=10)
   gui.clipboard_clear()
   gui.clipboard_append(new_password)
   gui.update()
   time.sleep(.02)
   gui.update()
   gui.mainloop()
```

The above code is for clipboard graphical user interface. In this code I have used to define the password generator function and used for clipboard GUI. when the password is generated the password is automatically will be in clipboard. The user can copy the generated password in notepad by clicking (ctrl+v) paste shortcut from keyboard.

```
gui = Tk()
gui.title("Password Generator")
```

```
width = 600
height = 262
screen_width = gui.winfo_screenwidth()
screen_height = gui.winfo_screenheight()
x = (screen_width/2) - (width/2)
y = (screen_height/2) - (height/2)
gui.geometry("%dx%d+%d+%d" % (width, height, x, y))
```

This code is used for the graphical user interface(GUI) to set the screen width and screen height of the window. **Tk() initialized tkinter which means window created.**When you clicked on the (main.py) script the password generator GUI is opened.

```
PASSWORD = StringVar()
PW_SIZE = IntVar()
e1 = Entry(gui, text=PW_SIZE)
PW_SIZE.set(8)
```

The above code is used to declare the variables for GUI and used to set the default password length i.e eight size as a default. Here the string variable is used for generating the password.

```
Top = Frame(gui, width=width)
Top.pack(side=TOP)
Form = Frame(gui, width=width)
Form.pack(side=TOP)
Bot = Frame(gui, width=width)
Bot.pack(side=BOTTOM)
```

The above code is used for Frame work of the Graphical user interface (GUI). Here this code is for the to set framework of the window like width, top of the window.

```
lbl_title = Label(Top, width=width, font=('sans serif', 12, 'bold'), text="Select: Size >> Click:
Generate Now", bd=1, relief=SOLID)
lbl_title.pack(fill=X)
lbl_password = Label(Form, font=('sans serif', 18), text="Password", bd=10)
lbl_password.grid(row=0, pady=10)
lbl_strength = Label(Form, font=('sans serif', 10, 'bold'), foreground="white",
background="#6d0001", text="Weak", bd=10, height=1, width=10)
lbl_strength.grid(row=0, column=3, pady=10, padx=10)
lbl_pw_size = Label(Form, font=('sans serif', 18), text="Size", bd=10)
lbl_pw_size.grid(row=1, pady=10)
lbl_instructions = Label(Bot, width=width, font=('sans serif', 12, 'bold'), text="Press (ctrl+v) from
the keyboard in notepaed password will be copied and pasted.", bd=1, relief=SOLID)
lbl_instructions.pack(fill=X)
```

The above Code is used for Label() widget. Here the Label widget is used to create the label grid for the password and is used for background colour and foreground colour of the GUI window. Here we use the font size and colour for the required text and to declare the title for each thing.

Label() widget use to display one or more than one line of text that users can’t able to modify.

- **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**

```
password = Entry(Form, textvariable=PASSWORD, font=(18), width=24)
password.grid(row=0, column=1, columnspan=2)
pw_size = Scale(Form, from_=8, to=24, length=230,width=24,sliderlength=14,
orient=HORIZONTAL, variable=PW_SIZE, font=(18))
pw_size.grid(row=1, column=1, columnspan=2)
```

The Above code is used for Slider length to set the password length and here in this code I have used the password size grid and declared the variables. It is used to provide a graphical slider that allows to select any value from that scale.

```
btn_generate = Button(Form, text="Generate Now", width=20, command=lambda:
pwGenerator(PW_SIZE))
btn_generate.grid(row=2, column=1, columnspan=2)

gui.mainloop()
```

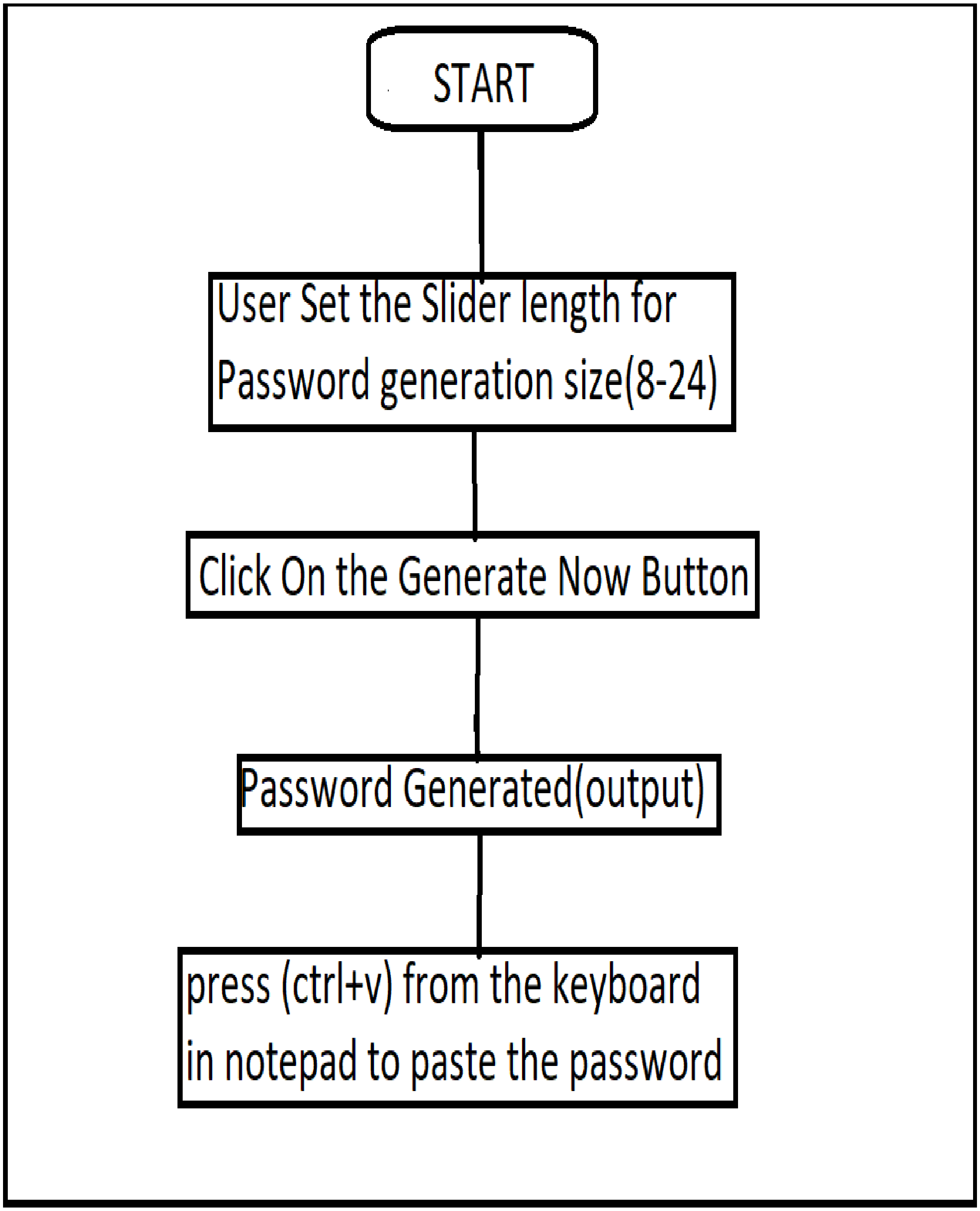
The above code is used for the Button widgets in the Graphical user interface. The Button is used for the Generating the password. In the Graphical user interface the Generate now will be there for that the button widget is used. here is a method known by the name mainloop() is used when your application is ready to run. mainloop() is an infinite loop used to run the application, wait for an event to occur and process the event as long as the window is not closed.

- **Button()** widget used to display button on our window
- **Command** is called when the button is click
- **textvariable** used to retrieve the current text to the entry widget

```
try:
    from string import ascii_letters, digits, punctuation, join
except ImportError:
    from string import ascii_letters, digits, punctuation
from random import choice, sample, randint

def isEven(integer):
    """Return Boolean: True if input is even, False if not."""
    return integer % 2 == 0

def RandPass(size = 8):

    s0 = ascii_letters # upper AND lower cases
    s1 = digits
    s3 = "!$%^&*- _~" # this set of special characters contains a space
   s
    s = s0 + s1
    s_full = s + s3
    passlen = size.get()
    new_password = ""


    if isEven(passlen) == True:
        frnt = passlen // 3
    else:
        frnt = passlen // 2
    mid = 2
    bck = passlen - (frnt + mid) - 1

    p0 = "".join(choice(s0))
    p1 = "".join(sample(s_full,frnt ))
    p2 = "".join(sample(s3,mid))
    # forces a minimum number of punctuations in the middle
    p3 = "".join(sample(s,bck ))
    if passlen != len(p0 + p1 + p2 + p3):
        p2 = "".join(sample(s3,passlen - (frnt+bck+1) ))

    if p3[:-1] == ' ': # to avoid having an empty space at the end of password
        temp = list(p3)
        temp[:-1] = choice(s)
        p3 = ''.join(str(e) for e in temp)
    new_password = p0 + p1 + p2 + p3

    if passlen <= 8:
        msg = 'VERY WEAK'
        colorVal = "#6d0001"
    elif passlen <=10:
        msg = 'WEAK'
        colorVal = "#cc0000"
    elif passlen <=12:
        msg = 'DECENT'
        colorVal = "#fc8600"
    elif passlen <=14:
        msg = 'GOOD'
        colorVal = "#eae200"
    elif passlen <=16:
        msg = 'STRONG'
        colorVal = "#9ff400"
    elif passlen <=18:
        msg = 'VERY STRONG'
        colorVal = "#007715"
    elif passlen >18:
        msg = 'EXCELLENT'
        colorVal = "#001fef"
    else:
        pass

    return new_password, msg, colorVal
```

Here the above code is for the Password generator function. In the above code is for importing the string module and random module. In this string module the digits , upper and lower case ascii letters , punctations are imported. The random module is used for the password generator of random numbers in the given range. Python generates these pseudo-random numbers using the random module. In this code I have used nested if else if condition to decide whether the password is weak or strong or excellent and based on the message the colour value will be decide for the weak to excellent passwords. I have used color code values in this program.

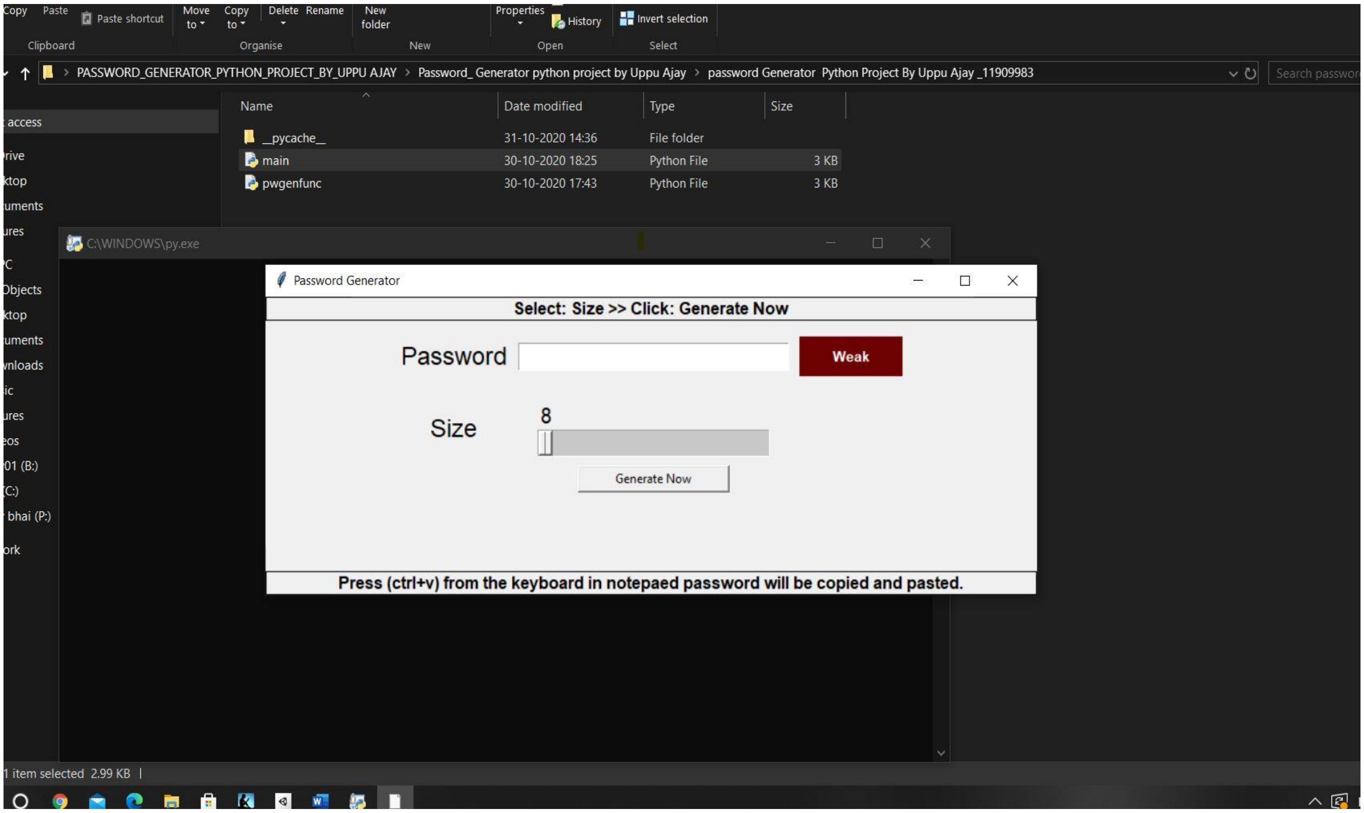
3. Pictorial flow of the project


START
User Set the Slider length for Password generation size(8-24)
Click On the Generate Now Button
Password Generated(output)
press (ctrl+v) from the keyboard in notepad to paste the password

4.DESCRIPTION OF THE WORK DIVISION

I have done the whole project by me. Because I am solely doing this project. I have done everything like collecting resources , coding for this project and the Project Report.

5. Implementation of the Scheduled Project work



PASSWORD_GENERATOR_PYTHON_PROJECT_BY_UPPU AJAY > Password_ Generator python project by Uppu Ajay > password Generator Python Project By Uppu Ajay _11909983

Name	Date modified	Type	Size
__pycache__	31-10-2020 14:36	File folder	
main	30-10-2020 18:25	Python File	3 KB
pwgenfunc	30-10-2020 17:43	Python File	3 KB

C:\WINDOWS\py.exe

Password Generator

Select: Size >> Click: Generate Now

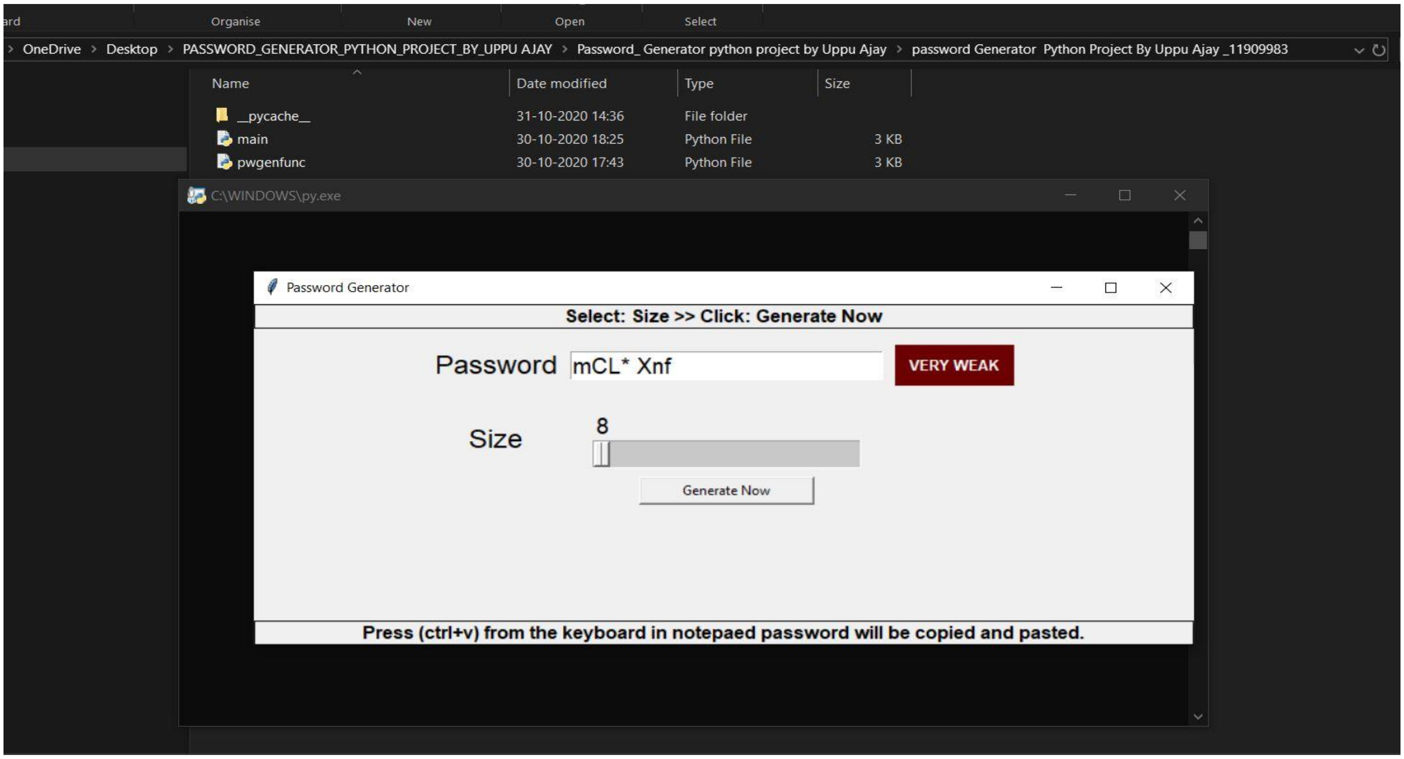
Password

Size 8

Press (ctrl+v) from the keyboard in notepaed password will be copied and pasted.

1 item selected 2.99 KB

When I clicked on the Main python file the password Generator Graphical user interface is opened. In the above Screen shot you can see that there Tinkter Password generator window. Here by default the length of the password is set eight. You can click on the Generate Now Button to generate the password. Every time you click on the Generate now button the New Password will be Generated.



› OneDrive › Desktop › PASSWORD_GENERATOR_PYTHON_PROJECT_BY_UPPU AJAY › Password_ Generator python project by Uppu Ajay › password Generator Python Project By Uppu Ajay _11909983

Name	Date modified	Type	Size
__pycache__	31-10-2020 14:36	File folder	
main	30-10-2020 18:25	Python File	3 KB
pwgenfunc	30-10-2020 17:43	Python File	3 KB

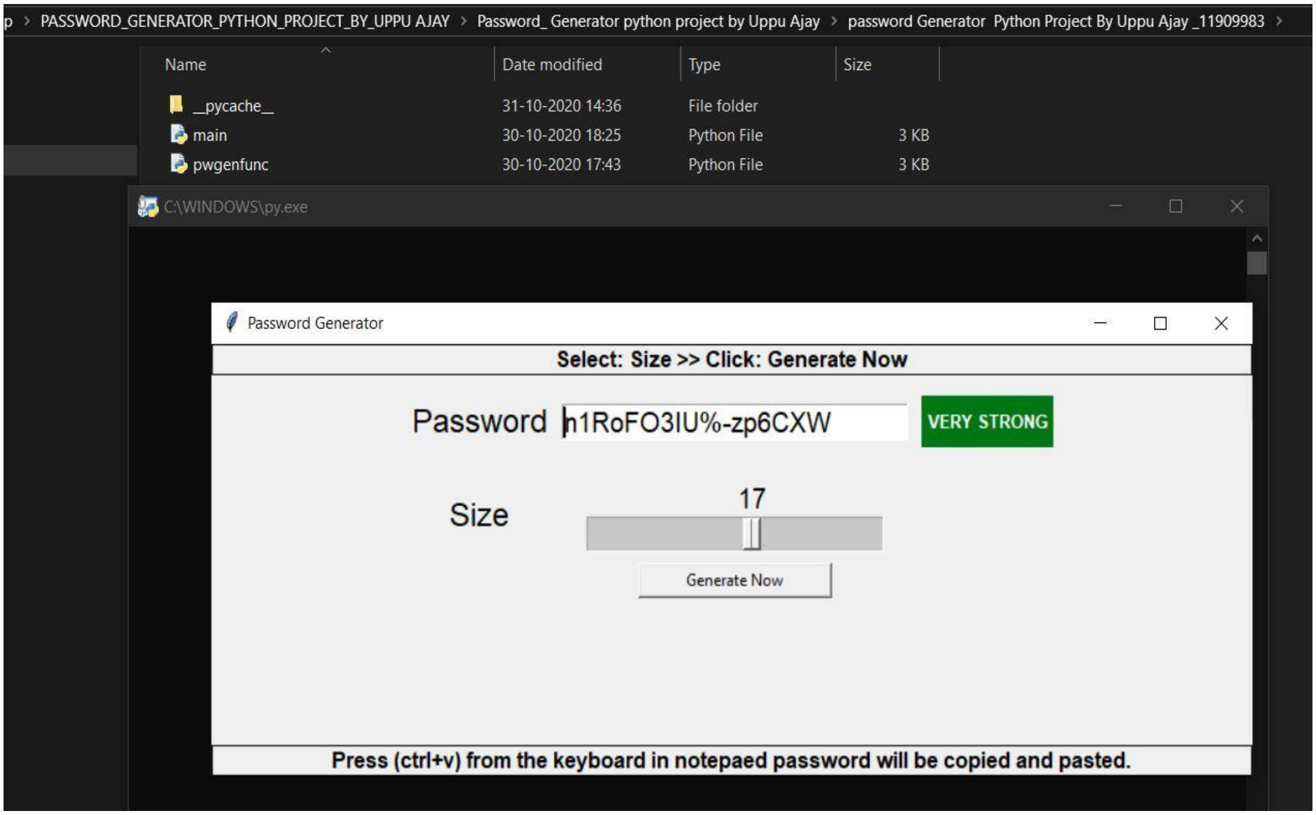
Select: Size >> Click: Generate Now

Password mCL* Xnf VERY WEAK

Size 8

Press (ctrl+v) from the keyboard in notepaed password will be copied and pasted.

In the above screenshot you can see that password is generated with the size of Length eight characters. When you click on the “Generate Now” Button then the password is generated and It is saying that this password is very weak. So, lets change the size of the password and strength of the password in the next screenshot.



p › PASSWORD_GENERATOR_PYTHON_PROJECT_BY_UPPU AJAY › Password_ Generator python project by Uppu Ajay › password Generator Python Project By Uppu Ajay _11909983 ›

Name	Date modified	Type	Size
__pycache__	31-10-2020 14:36	File folder	
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pwgenfunc	30-10-2020 17:43	Python File	3 KB

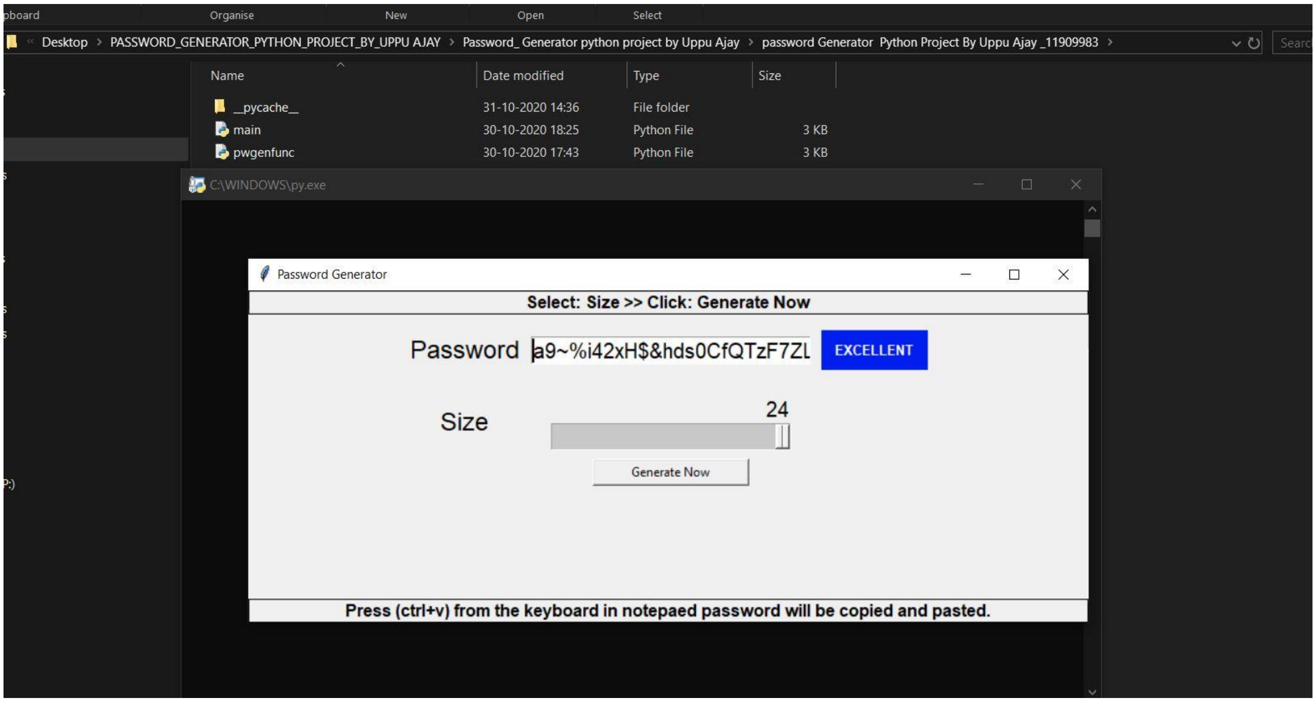
Select: Size >> Click: Generate Now

Password h1RoFO3IU%-zp6CXW VERY STRONG

Size 17

Press (ctrl+v) from the keyboard in notepaed password will be copied and pasted.

In the above screenshot you can see that when I set the password size seventeen and click on the Generate now button the password is generated and the strength of the password is increased. It is showing that the generated password is very strong. When the password is generated the password is automatically copied in the clipboard and then you can paste the password in the notepad or where ever you want by just pressing (ctrl+v) from the keyboard.


pboard
Organise
New
Open
Select
Desktop > PASSWORD_GENERATOR_PYTHON_PROJECT_BY_UPPU AJAY > Password_ Generator python project by Uppu Ajay > password Generator Python Project By Uppu Ajay _11909983 >
Searc
C:\WINDOWS\py.exe
Password Generator
Generate Now

Name	Date modified	Type	Size
__pycache__	31-10-2020 14:36	File folder	
main	30-10-2020 18:25	Python File	3 KB
pwgenfunc	30-10-2020 17:43	Python File	3 KB

Select: Size >> Click: Generate Now

Password a9~%i42xH$&hds0CfQTzF7ZL EXCELLENT

Size 24

Press (ctrl+v) from the keyboard in notepaed password will be copied and pasted.

In the above screen shot when the password is set size is twenty four. When I clicked on Button Generate now. The password is Generated. you can see in the screenshot that strength of the password is excellent.so when ever I click on the generate now button every time new password is generated.

6. TECHNOLOGY AND FRAME WORK

The Technology used for this project is python 3.7 version and the frame work used for this Graphical user interface tkinter, Random module , strings module.

7. SWOT ANAYLSIS:

STRENGTHS: It acts as user friendly Graphical user interface by which more users like students as well as professionals know about it. It creates an Strong Passwords for enthusiastic users. It will help the user to maintain their Accounts strong**.**

WEAKNESS: There is no proper security.the same algorithm can used many people to generate the passwords by which they can enter very easily through system generated passwords.

OPPORTUNITIES: By creating an password generator graphical user interface, opportunities for the users like they can create the random passwords and strong passwords to secure their social media accounts etc.

THREATS: There are always some threats. In this same algorithm can used by hackers to generate the passwords by which they can enter very easily through system generated passwords.

Project Done By

Uppu Ajay

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