PASSWORD GENERATOR

By using python

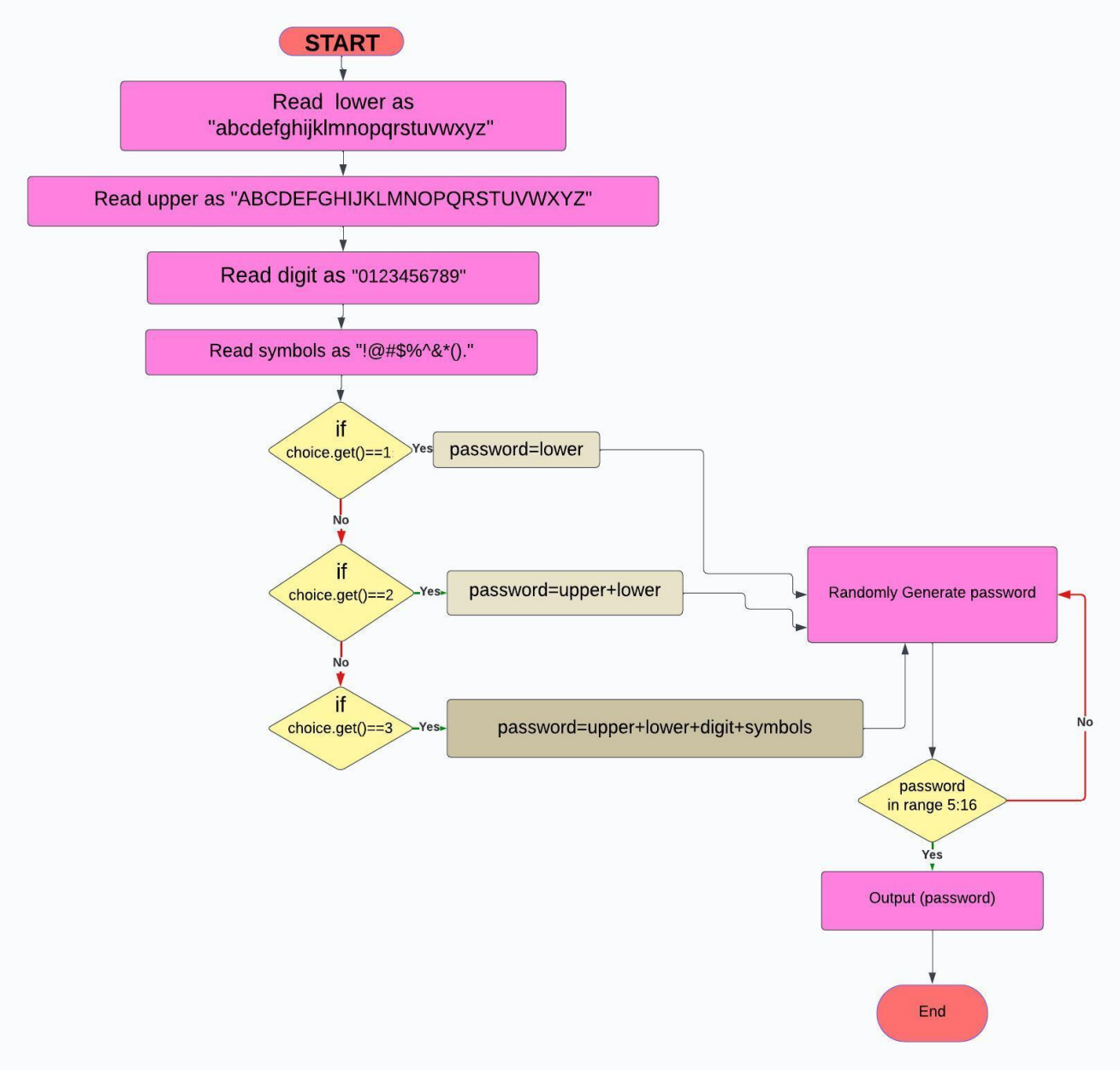
PROJECT OBJECTIVE:

The objective of this project is to design, develop, and implement a robust and secure password generator tool that generates complex and unique passwords for enhanced user authentication and data protection. The password generator will prioritize the creation of strong passwords by incorporating a variety of characters, lengths, and patterns, ensuring resilience against common password attacks. Additionally, the tool will focus on user-friendly feature. The ultimate goal is to contribute to improved cybersecurity measures by providing users with a reliable and efficient solution for generating and managing strong, diverse passwords.

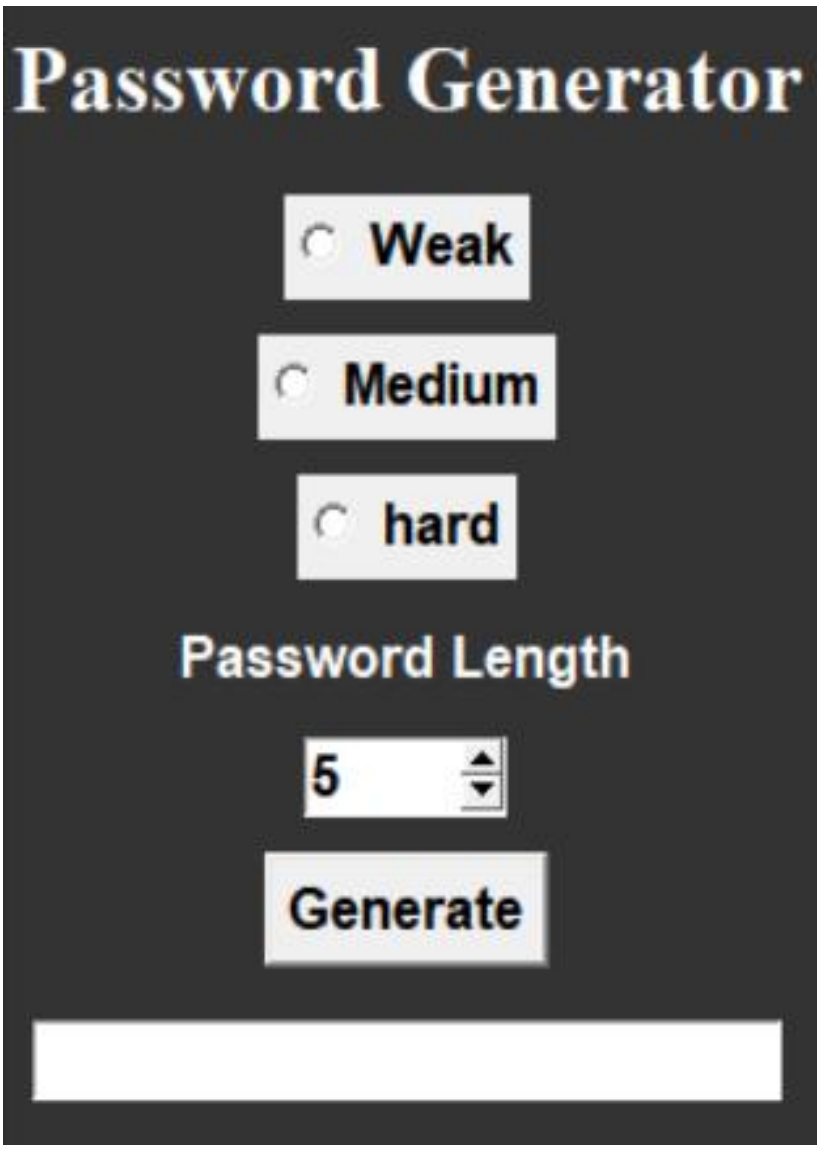
Features of the project:

- **Customizable Complexity:** Users can tailor the generated passwords based on length, character types, and special characters.
- **Randomization:** Strong algorithmic randomness ensures each password is unique and unpredictable.
- **Copy to Clipboard:** Enables easy copying of generated passwords for convenient use in various applications.
- **Exclude Ambiguous Characters:** Option to omit confusing characters like l, 1, I, 0, O for improved readability.
- **Offline Availability:** Functions without an internet connection, ensuring accessibility in all situations.
- **Cross-Platform Compatibility:** Works seamlessly across different operating systems and devices.
- **Accessibility:** User-friendly interface with clear instructions to accommodate users with varying technical proficiency.

The Flowchart Diagram:



The GUI Design:



```
from tkinter import *
import random
def generator():
  lower="abcdefghijklmnopqrstuvwxyz"
  upper="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
  numbers="0123456789"
  symbols="!@#$%^&*()."
  string = lower + upper + numbers + symbols
  password_length=int((length_box.get()))

#at 0 index
  if choice.get()==1:
     passwordField.insert(0,random.sample(lower,password_length))
  if choice.get()==2:
     passwordField.insert(0,random.sample(lower+upper,password_length))
  if choice.get()==3:
     passwordField.insert(0,random.sample(lower + upper + numbers + symbols,password_length))



#creating object of tk class
root=Tk()
#for the background colour
root.config(bg='gray20')
choice=IntVar()
Font=('arial',13,'bold')

passwordLabel=Label(root,text='Password Generator', font=('times new roman',20,'bold'),bg='gray20',fg='white')
passwordLabel.grid(pady=10)
#creating radio button
weakradiobutton=Radiobutton(root,text='Weak',value=1,variable=choice,font=Font)
weakradiobutton.grid(pady=5)
mediumradiobutton=Radiobutton(root,text='Medium',value=2,variable=choice,font=Font)
mediumradiobutton.grid(pady=5)
hardradiobutton=Radiobutton(root,text='hard',value=3,variable=choice,font=Font)
hardradiobutton.grid(pady=5)
lengthLabel=Label(root,text='Password Length', font=Font,bg='gray20',fg='white')
lengthLabel.grid(pady=5)
#creating spin box
length_box=Spinbox(root,from_=5,to_=16,width=5,font=Font)
length_box.grid(pady=5)
#creating generate button
generateButton=Button(root,text='Generate',font=Font,command=generator)
generateButton.grid(pady=5)

#creating copy button
#bd=border width
passwordField=Entry(root,width=25,bd=1,font=Font)
passwordField.grid(pady=10)
#for keeping our window in a loop
root.mainloop()
```