Random password generator

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Contents:

1. Problem statement & objective:

Because of the rise of technology, everything in our life became depending on the data, and protecting this data has become a top priority. Passwords are being used to protect the data we upload to the Internet. A simple password can be readily cracked, exposing all personal information. To avoid such situations and keep our data safe, we must use strong passwords. Let's use Python to make a simple program that generates secure passwords randomly using random.sample(). The objective of this code is to:

A. The program creates using string library and random library.
B. The user can generate a random password from 8 to 16 lengths.
C. The program must generate random, strong, and unique passwords that cannot be repeat.
D. The password should be made up of a combination of every type of character are upper case characters, lower case characters, digits, and special characters. E. The password character should shuffle every time.

2. Algorithm development:

- Ask the user to put their name.
- Greet The User by their name.
- make arrays that contain all the characters that will use for the password. The characters we need are upper case characters, lower case characters, digits, and special characters.
- Ask The User to Enter the Length of The Password.
- If the user enter number less than 8 or more than 16. Or enter character loop.
- Take random character from each upper-case characters, lower case characters, digits, and special characters with a length of the password length divided by 4 using floor division and add to the password variable.
- shuffle for the array.
- output password.
- Thanks, the user.

3. Pseudocode:

Display " Hello username! nice to meet you "

SET l TO lowercase values

SET u TO string.ascii_uppercase

SET d TO string.digits

SET p TO string.punctuation

SET all TO l + u + d + g while

True:

Begin:

DISPLAY 'Enter the length of your password between 8 and 16: '

INPUT Length

Set character to random sample from list with a length divided //4 using floor division

initialize c as string add character

to the variable called string if digits >= 8

and digits <= 16:

SET PASSWORD TO number of digits selected randomly from the list

Convert password list to string

DISPLAY PASSWORD

DISPLAY Hope you enjoying our services

break elif not (digits >= 8 and digits

<= 16):

DISPLAY “Sorry, please enter length between 8 to 16.”

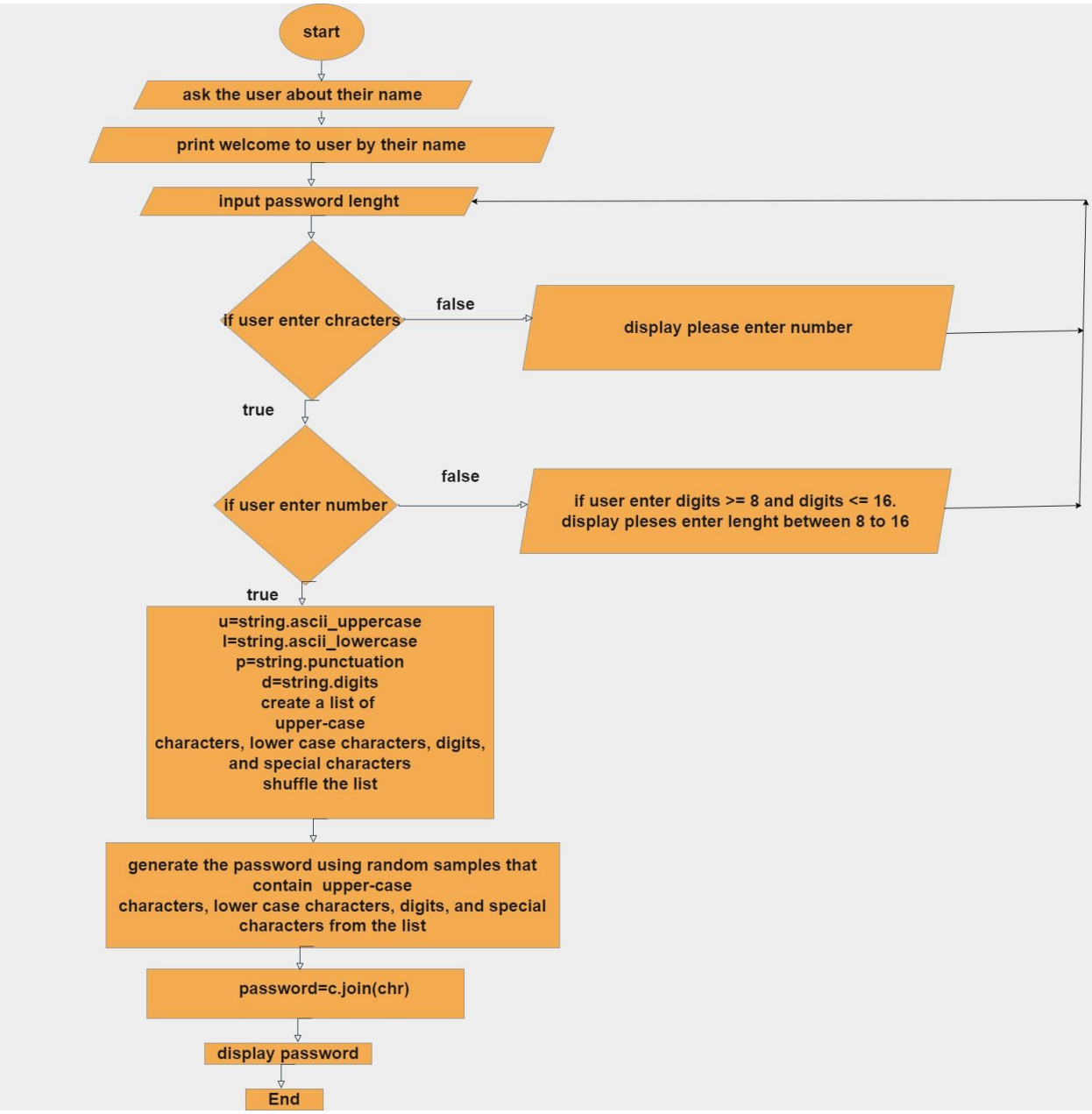
continue

EXCEPTION:

WHEN the digit input is character

DISPLY 'Please enter only numbers'

4. Flowcharts:



5. Coding:

```
    #Import package import random import string #Define
the password name = input ('Please enter your name: ')
welcoming= print ('Hello ' + name + '! nice to meet you ')
u=string.ascii_uppercase            l=string.ascii_lowercase
p=string.punctuation d=string.digits generate = u + l + p +
d while True:
   try:
      digits= int (input (('Plz enter the length of the password:')))
chr = random.sample(u, (digits)//4)+ random.sample(l,(digits)//4)
+random.sample(p,(digits)//4)
+random.sample(d,(digits)//4)+random.sample(generate,(digits)%4)
random.shuffle(chr)
      c=' '
      password=c.join(chr)        if
digits >= 8 and digits <= 16:
         print ("this you'r password " + name + " Hope you enjoying our services ")            print
("Password:", password)            break        elif not (digits >= 8 and digits <= 16):
         print ("Sorry, pleses enter lenght between 8 to 16.")
continue      except:
      print ("Sorry, there something wrong.")
print ("please enter number")        continue
```

```python
#import package
import random
import string
#define the password
name = input('Please enter your name: ')
welcoming= print('Hello ' + name + '! nice to meet you ')
u=string.ascii_uppercase
l=string.ascii_lowercase
p=string.punctuation
d=string.digits
generate = u + l + p + d
while True:
    try:
        digits= int(input(('Plz enter the length of the password:')))
        chr = random.sample(u,(digits)//4)+ random.sample(l,(digits)//4) +random.sample(p,(digits)//4) +random.sample(d,(digits)
        random.shuffle(chr)
        c=''
        password=c.join(chr)
        if digits >= 8 and digits <= 16:
            print("this you'r password " + name + " Hope you enjoying our services ")
            print("Password:", password)
            break
        elif not(digits >= 8 and digits <= 16):
            print("Sorry, pleses enter lenght between 8 to 16.")
            continue
    except:
        print("Sorry, there something wrong.")
        print("please enter number")
        continue
```

```
Please enter your name: maha
Hello maha! nice to meet you
Plz enter the length of the password:1
Sorry, pleses enter lenght between 8 to 16.
Plz enter the length of the password:0
Sorry, pleses enter lenght between 8 to 16.
Plz enter the length of the password:pet
Sorry, there something wrong.
please enter number
Plz enter the length of the password:19
Sorry, pleses enter lenght between 8 to 16.
Plz enter the length of the password:8
this you'r password maha Hope you enjoying our services
Password: 7p]O4zQ/
```

```python
#import package
import random
import string
#define the password
name = input('Please enter your name: ')
welcoming= print('Hello ' + name + '! nice to meet you ')
u=string.ascii_uppercase
l=string.ascii_lowercase
p=string.punctuation
d=string.digits
generate = u + l + p + d
while True:
    try:
        digits= int(input(('Plz enter the length of the password:')))
        chr = random.sample(u,(digits)//4)+ random.sample(l,(digits)//4) +random.sample(p,(digits)//4) +random.sample(d,(digits)
        random.shuffle(chr)
        c=''
        password=c.join(chr)
        if digits >= 8 and digits <= 16:
            print("this you'r password " + name + " Hope you enjoying our services ")
            print("Password:", password)
            break
        elif not(digits >= 8 and digits <= 16):
            print("Sorry, pleses enter lenght between 8 to 16.")
            continue
    except:
        print("Sorry, there something wrong.")
        print("please enter number")
        continue
```

```
Please enter your name: maha
Hello maha! nice to meet you
Plz enter the length of the password:8
this you'r password maha Hope you enjoying our services
Password: 64>eBvN)
```

5.1. Test cases:

```
Please enter your name: maha
Hello maha! nice to meet you
Plz enter the length of the password:9
this you'r password maha Hope you enjoying our services
Password: e=u~?60AY
```

```
Please enter your name: maha
Hello maha! nice to meet you
Plz enter the length of the password:17
Sorry, pleses enter lenght between 8 to 16.
Plz enter the length of the password:19
Sorry, pleses enter lenght between 8 to 16.
Plz enter the length of the password:16
this you'r password maha Hope you enjoying our services
Password: a=TlbJ1E*0Mg"26.
```

```
Please enter your name: maha
Hello maha! nice to meet you
Plz enter the length of the password:16
this you'r password maha Hope you enjoying our services
Password: Peg0KoCS9$>#r?13
```

```
Please enter your name: maha
Hello maha! nice to meet you
Plz enter the length of the password:16
this you'r password maha Hope you enjoying our services
Password: Peg0KoCS9$>#r?13
```

6. Conclusion (what I have learned)

This project helps me to start thinking like developer and let me see the problems from different approach. Learn how to code fully working project and to see the project from the user approach:

1) I learn about string library and its modules that use to generate password and how to call for upper case characters, lower case characters, digits, and special characters to have them in the password.
2) I know what random library and the modules of it like random.choice() is that returns a randomly selected element from the specified sequence. And random.sample() randomly picking more than one element from the list without repeating elements. It returns a list of unique items chosen randomly from the list, sequence, or set.
3) How to handle error using try and except. using try to test block of code and except to handle the error.
4) Using statical models to make sure that upper case characters, lower case characters, digits, and special characters appear in the code.

5) Learn using shuffle to make sure every time the password appears different.
6) If there something wrong making the code loop without restart or error.
7) Learning to draw flowchart and make the sequence of it right.
8) Learning to write the algorithm development of explaining the code right.
9) And, how to write the Pseudocode use it to explain the code in easy way.
10) How to create a program to make certain tasks automatically.