```
import string
import random

class BasePasswordManager():
    def __init__(self, old_passwords):
        self.old_passwords = old_passwords
    def get_password(self):
        return self.old_passwords[-1]
    def is_correct(self, current_password):
        return current_password == self.get_password()

class PasswordManager(BasePasswordManager):
    def set_password(length):
        password_characters = string.ascii_letters + string.digits +
string.punctuation
        new_password = ""
        for i in range(length):
            new_password= new_password +
(random.choice(password_characters))
        print(new_password)
        return new_password
# this method takes the current password and returns the security level of
the password
    def get_level(current_password):
        x = True
        while x:
            if current_password.isalpha() or current_password.isdigit():
                print("current_password is of level 0")
                return 0
                break
            elif current_password.isalnum():
                print("current_password is of level 1")
                return 1
                break
            else:
                print("current_password is of level 2")
                return 2
                x = False
                break
#the idea here is to take the new generated password and runs it through
this loop to find its security level
    def get_level2(new_password):
        x = True
        while x:
            if (len(new_password)) < 6:
                print('new_passord not of accepted length')
                print('generate another password of length > 6')
                break
            elif new_password.isalpha() or new_password.isdigit():
                print('new_password is of level 0')
                return 0
                break
            elif new_password.isalnum():
                print('new_password is of level 1')
                return 1
                break
            else:
                print('new_password is of level 2')
                return 2
                x = False
                break
```

```
#bpm this is a list of past passwords with the current past word last on
the list
bpm = BasePasswordManager(['224466','zxywu','AbCdEquality',
'Jupyterishere','GameChanger123'])
print(bpm.get_password())
print(bpm.is_correct('GameChanger123'))
current_password_level = PasswordManager.get_level(input('Enter the
Current_password above'))
new_password = PasswordManager.set_password(int(input('Enter the new
password length')))
new_password_level = PasswordManager.get_level2(input('Enter the newpass
generated above'))

# this loop takes in the two security levels from get_level and get_level2
and compares which is of higher security
current_password = bpm.get_password()

while current_password_level >= new_password_level:
    print('new_password not accepted')
    new_password = (PasswordManager.set_password(int(input('Enter the new
password length'))))
    new_password_level = PasswordManager.get_level2(input('Enter the
newpass generated above'))
    if current_password_level == 2:
        if len(new_password) > len(current_password):
            print('Password is accepted')
            print('new password is of greater strength')
            print('You have successfully set a new password')
            break

else:
    print('new password is of greater strength')
    print('You have successfully set a new password')
```