

Computing Homework 15/10/13

Objective

Write a program in C that will ask for a password, then reject it if it fulfills these conditions:

- If it is longer than 12 letters long
- If it is shorter than 6 letters long
- If it contains any characters that are not:
 - Lowercase letters
 - Uppercase letters
 - Numbers

Then if the password is invalid, the program will say why.

This loops until the user inputs a valid password, at which point it prints if the password is weak, medium, or strong, based on these conditions:

- If it contains only one kind of character, e.g. 14071789, then it is WEAK.
- If it contains two kinds of character, e.g. ac1789, then it is MEDIUM.
- If it contains three kinds of character, e.g. RFac1789, then it is STRONG.

After which it will ask you to confirm the password.

If the confirmation password is the same as the valid password that the user input, it will say that the password is valid, and exit.

Otherwise, it goes back to the beginning of the confirmation loop.

How to do it

I will have 4 different functions that I will use to achieve the objective:

- checkLength()
 - This will be used to check the length of the first password, so that you can reject the password because of length.
- checkCharacter()
 - This will be used to check if a single character is invalid, according to the rejection conditions.
- checkPassword()
 - This will use checkCharacter() and checkLength() to see if the entire password is invalid, and will return an array of integers so that if it is invalid, the program will know why and be able to tell you why.
- confirmPassword()
 - This will contain a loop that will simply check if the second password input is the same as the first, and will exit the program if the conditions are met.
- numberToOne()
 - This will return 1 if the input is 1 or more.

checkPassword() will be contained inside a while true loop, and if its conditions are met, confirmPassword will be called.

How to test it

I will test this program 7 times, with these passwords:

123=WEAK & invalid(Shorter than 6 letters long)

1234567898765=WEAK&invalid(Longer than 12 letters long)

123456=WEAK&valid

123abc=MEDIUM&valid

12abCD=STRONG&valid

12abCD&12aBCD=STRONG&invalid(Second password!=First password)

!@#\$%^=WEAK&invalid(Contains characters that are not letters or numbers)

If the program outputs these results, I will conclude that I have completed the objective.

Test results

After testing my program, I got these results:

```
Gavins-iMac-5:SamuelComputingHomework samuel$ gcc password.c -o password.out
```

```
Gavins-iMac-5:SamuelComputingHomework samuel$ ./password.out
```

Please input your password.

Password:123

Your password is too short! It needs to be between 6 and 12 characters long.

Please input your password.

Password:1234567898765

Your password is too long! It needs to be between 6 and 12 characters long.

Please input your password.

Password:123456

Your password is WEAK

Please confirm your password.

Password:123456

Thank you! Your password is now 123456.

Please input your password.

Password:123abc

Your password is MEDIUM

Please confirm your password.

Password:123abc

Thank you! Your password is now 123abc.

Please input your password.

Password:12abCD

Your password is STRONG

Please confirm your password.

Password:12aBCD

Oops? you got your password wrong!

Please confirm your password.

Password:12abCD

Thank you! Your password is now 12abCD.

Please input your password.

Password: !@#\$\$%^

Only letters and numbers are allowed!

I can therefore conclude that I have completed the objective.