Problem Statement -

A program is required that asks the user to enter a potential password to check for the strength of the password. The program checks for length, is there are letters, if there are numbers, and if there are special characters.

Nouns: password, strength, length, letters, numbers, characters

Verbs: required, enter, check

Defining Program -

Inputs: userPassword,

Processing:

Function checkPasswordStrength(password)

Set password strengthlevel to weak

If password length >= 8

Increment strengthLevel

If password contains uppercase letters

Increment strengthLevel

If password contains lowercase letters

Increment strengthLevel

If password contains numbers

Increment strengthLevel

If password contains special characters

Increment strengthLevel

Return strengthlevel as outputmessage

End function

Outputs:

Outputmessage

Solution Algorithm -

Prompt for password

Function CheckPasswordStrength(password)

Initialize strengthLevel to 0

// Check password length

If password length >= 8

Increment strengthLevel

// Check for character types For each character in password

If character is uppercase letter

Increment uppercase count

Else If character is lowercase letter

Increment lowercase count

Else If character is number

Increment number count

Else Increment special character count

// Determine strength level based on score

If strengthLevel is zero

Set outputmessage “Password does not meet criteria, it is too weak.”

Else if strength level is one or two

Set ouputmessage “Password does not meet criteria, it needs to be stronger.”

Else

Set outputmessage “Password meets all criteria and is strong.”

END

Test Plan -

VARIABLES:

TEST CASE 1:

INPUT VALUES: password

EXPECTED RESULT: Password does not meet criteria, it is too weak.

ACTUAL RESULT: Password does not meet criteria, it needs to be stronger.

TEST CASE 2:

INPUT VALUES: password123

EXPECTED RESULT: Password does not meet criteria, it needs to be stronger.

ACTUAL RESULT: Password does not meet criteria, it needs to be stronger.

TEST CASE 3:

INPUT VALUES: Lds$:Pu}v`AXC9q>z+\*-tY

EXPECTED RESULT: Password meets all criteria and is strong.

ACTUAL RESULT: Password meets all criteria and is strong.

TEST CASE 4:

INPUT VALUES: j/6YM\_u$mdt:8'=@;zeG#%

EXPECTED RESULT: Password meets all criteria and is strong.

ACTUAL RESULT: Password meets all criteria and is strong.