Password Generator

Project 2
Documentation

By:

John Sapp

for:

Introduction to Java - COP 2800c - 22196

Submitted to:

Professor Ian O'Toole

3/17/24

This program is designed to create strong passwords for use online or wherever a password may be needed. A strong password consists of seemingly random combinations of letters, special characters, and numbers. The longer your password is the better.

User Experience:

When the program has started the user is greeted with a welcome message and is then prompted to name what the password is used for i.e. (FaceBook, YouTube, ext). The program then asks the user to specify a length for the password. Then it will ask the user if they want special characters. Finally, the program will ask if the user wants the password to have numerical characters.

The program will then display the generated password and ask the user if they want to generate another. If yes, the program will run through the same steps as before if no, the program will print the name of the password and the password to the console.

Lastly, the program will ask the user if they want to save the generated passwords to a ".txt" file. If yes, the program will ask the user to name the file and create a file in the password generator project folder, if no, the program will exit. If a file is created with the same name as an existing file that file will be overridden.

Program method IPO:

Generator.java (main class):

Public static void welcomeMessage()		
Input	Process	Output
No input	Prints welcome message	Prints to console

Public static Stringbuilder createPassword()		
Input	Process	Output
Gets user's selections for the name of the password Gets user's selection for the length of the password Gets user's selection for special characters and number characters	Creates a password object by passing the user's selection info Adds the password object to an Arraylist	Returns the password as a Stringbuilder

Public static ArrayList<Passord> getListArray()		
Input	Process	Output
No input	No process	Returns “listofPasswords” ArrayList

public static void main(String[]args)		
Input	Process	Output
Gets user’s selection to make another password or quit Gets user’s selection to make a file or not Gets user’s input to name the “.txt” file	Calls the createPassword() method *When the program ends* If the user saves to a file a file object is created and named. Calls file.createFile()	Prints the generated password to the console *When the program ends* Prints all generated passwords to the console

Password.java:

Password(String, int, boolean, boolean) //constrctor		
Input	Process	Output
passwordName passwordLength specialChar numberChar	Sets the values passed in to their corresponding fields Calls pwGenerator() method	Password object is created

Password() //Defult constrctor		
Input	Process	Output
No Input	passwordName set to a default name passwordLength set to 8 specialChar set to true numberChar set to true	Default Password object is created

public StringBuilder pwGenerator()		
Input	Process	Output
No Input	For loop will run till the password length is reached Random number generator picks a switch case Case 1 will append a random character from the “characters” array to the password Stringbuilder Case 2 will append a random special character to the password Stringbuilder if the specialCharactor boolean is true. If not true “i” is decremented. Case 3 will append a random number character to the password Stringbuilder if the numberCharactor boolean is true. If not true “i” is decremented.	Returns password Stringbuilder

Override Public String toString()		
Input	Process	Output
No input	Creates a string with the password name and the generated password	Returns the string

public String getPasswordName()		
Input	Process	Output
No input	No process	Returns the passwordName field

public void setPasswordName(String)		
Input	Process	Output
String	Assigns String to the object field “passwordName”	void

public int getPasswordLength()		
Input	Process	Output
No input	No process	Returns the passwordLenget field

public void setPasswordLength(int)		
Input	Process	Output
Integer	Assigns the integer to the object field “passwordLength”	void

public StringBuilder getPassword()		
Input	Process	Output
No input	No process	Returns the “passWord” field

public void setPassWord(StringBuilder)		
Input	Process	Output
Stringbuilder	Assigns the Stringbuilder to the object field “passWord”	void

public boolean getSpecialCharacter()		
Input	Process	Output
No input	No process	Returns the “specialCharacter” field

public void setSpecialCharacter(boolean)		
Input	Process	Output
boolean	Assigns the boolean to the object field “specialCharacter”	void

public boolean getNumberCharacter()		
Input	Process	Output
No input	No process	Returns the “numberCharacter” field

public void setNumberCharacter(boolean)		
Input	Process	Output
boolean	Assigns the boolean to the object field “numberCharacter”	void

FileOutput.java:

FileOutput(String,String) //constructor		
Input	Process	Output
fileType fileName	Sets the values passed in to their corresponding fields	Creates a file object

FileOutput() //defualt constructor		
Input	Process	Output
No input	Sets fileType to “.txt”	Creates a file object

public void createFile()		
Input	Process	Output
No input	Creates a new file object with the field values For loop itterates throught the “listOfPasswords” ArrayList and writes it to the file	Creates a “.txt” file stored in the project file

public String getFileType()		
Input	Process	Output
No input	No process	Returns the “fileType” field

public void setFileType(String)		
Input	Process	Output
String	Assigns the String to the object field “fileType”	void

public String getFileName()		
Input	Process	Output
No input	No process	Returns the “fileName” field

public void setFileName(String)		
Input	Process	Output
String	Assigns the String to the object field “fileName”	void