Password Generator Project

Assignment: Design an algorithm that can generate a custom, reproducible password that is uniquely different for each website.

Working in pairs, your task is to design and construct a standardized strategy for generating unique passwords for different sites that can later be regenerated by reapplying the same algorithm. Your solution should address the following concepts:
- The algorithm should generate different passwords for different sites.
- The password for any site should be reproducible simply by following the algorithm.
- The algorithm should be easy to remember and apply.
- The password should be complex and difficult to guess.
- The general algorithm should not be easily deduced from the password.

Once you've designed your solution, write out each step of your password-generating algorithm in some form of pseudocode. No specific format is required for your algorithm, but your pseudocode should be clear enough and detailed enough that anyone who is not familiar with how your algorithm is supposed to work can still follow along and apply its steps in generating a valid password.

Your submission will be in the form of a written algorithm (i.e., pseudocode) that explicitly states each of the discrete steps and decisions that must be made in generating a valid password. Also, you must provide at least five examples of passwords that your algorithm would generate for five different sites. One of those examples must be thoroughly annotated, showing how each step of the algorithm contributes to the final password.

Your solution and examples should demonstrate the following properties:
- Clear and readable
- Cleanly formatted
- Appropriate use of sequencing, selection, and/or iteration
- Well-documented examples

Example:
1) Abbreviate the site into a 2-letter phrase.
2) Capitalize the site abbreviation.
3) Type the site abbreviation.
4) Type the number of letters in the site name.
5) Identify the verb that describes how you use the site.
6) Remove all vowels from the verb.
7) Type the vowel-less verb in lowercase letters.
8) Identify the subject or type of content for the site.
9) Capitalize the subject or type of content.
10) Type the capitalized subject or type of content.

"Facebook is where I post to my friends." ... FB8pstBFFS
"Gmail is where I read my mail." ... GM5rdMAIL
"Twitter is where I follow my friends." ... TW7fllwBFFS
"YouTube is where I watch videos." ... YT7wtchVIDEOS

Dennyse Baja, Courtney Makua
Period 2
Mr. Myers
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Unit 1 Project

Password Generator Algorithm

Step 1: Use the first four letters of the website/application. If alphabetical letters are not allowed to be used for generating the password, then type in the number of letters in the site/application's name.

Step 2: Capitalize every other letter of the shortened site/application's letters.

Step 3: After completing steps 1 & 2, type in the first four letters or number (if only numbers are allowed)

Step 4: Type in your birthday in mm/dd format.

Step 5: Identify which numbers correlate with the alphabet (A is 1, B is 2, C is 3, etc.).

Step 6: Using the information in Step 5, type in the number corresponding with the letters in your initials (first & last name), (Ex. DB ; D is 4 and B is 2 ; the outcome would be 42).

Step 7: Identify the primary color of the website/logo's application. If the website has no logo, then identify the primary color of the website/application's "title" text.

Step 8: Abbreviate the color into two letters. If the website/application requires only numbers for the password, use another website to find the hex color code of the color, (Ex. The color black's hex color code would be #000000… However, if the color code has letters (Ex. #4fc190) replace the letters with the number that correlates with the letter (such as in Step 6) (Ex. Outcome of #4fc190 would be #463190).

Step 9: Once the color abbreviation/color hex code has been identified, type it in.

Step 10 (Optional): If the website/application requires a symbol, use an exclamation mark (!) at the end of the password.

Annotated Example:

www.instagram.com

Step 1: inst
Alt: 9

Step 2: InSt
Alt: 9

Step 3: InSt
Alt: 9

Step 4: InSt0416
Alt: 90416

Step 5: InSt0416
Alt: 90416

Step 6: InSt041642
Alt: 9041642

Step 7: InSt041642
Alt: 9041642

Step 8: InSt041642
Alt: 9041642

Step 9: InSt041642pp
Alt: 9041642800080

Step 10: InSt041642pp
Alt 1: 9041642800080
Alt 2: InSt041642pp!
Alt 3: 9041642800080!

	Instagram	Snapchat	YouTube	Facebook	Twitter
Step 1	inst Alt: 9	snap Alt: 8	yout Alt: 7	face Alt: 8	twit Alt: 7
Step 2	InSt Alt: 9	SnAp Alt: 8	YoUt Alt: 7	FaCe Alt: 8	TwIt Alt: 7
Step 3	InSt Alt: 9	SnAp Alt: 8	YoUt Alt: 7	FaCe Alt: 8	TwIt Alt: 7
Step 4	InSt0416 Alt: 90416	SnAp0416 Alt: 90416	YoUt0416 Alt: 70416	FaCe0416 Alt: 80416	TwIt0416 Alt: 70416

Step 5	InSt0416 Alt: 90416	SnAp0416 Alt: 90416	YoUt0416 Alt: 70416	FaCe0416 Alt: 80416	TwIt0416 Alt: 70416
Step 6	InSt041642 Alt: 9041642	SnAp041642 Alt: 9041642	YoUt041642 Alt: 7041642	FaCe041642 Alt: 8041642	TwIt041642 Alt: 7041642
Step 7	InSt041642 Alt: 9041642	SnAp041642 Alt: 9041642	YoUt041642 Alt: 7041642	FaCe041642 Alt: 8041642	TwIt041642 Alt: 7041642
Step 8	InSt041642 Alt: 9041642	SnAp041642 Alt: 9041642	YoUt041642 Alt: 7041642	FaCe041642 Alt: 8041642	TwIt041642 Alt: 7041642
Step 9	InSt041642pp Alt: 9041642800080	SnAp041642yl Alt: 9041642666600	YoUt041642rd Alt: 7041642660000	FaCe041642nb Alt: 8041642000080	TwIt041642sb Alt: 7041642873552
Step 10	InSt041642pp Alt 1: 9041642800080 Alt 2: InSt041642pp! Alt 3: 9041642800080!	SnAp041642yl Alt 1: 9041642666600 Alt 2: SnAp041642yl! Alt 3: 9041642666600!	YoUt041642rd Alt 1: 7041642660000 Alt 2: YoUt041642rd! Alt 3: 7041642660000!	FaCe041642bl Alt 1: 8041642000080 Alt 2: FaCe041642nb! Alt 3: 8041642000080!	TwIt041642sb Alt 1: 7041642873552 Alt 2: TwIt041642sb! Alt: 7041642873552!

Rubric

Content Area	Performance Quality			
Readability 4	Algorithm is typed, organized, and nicely formatted for easy use.	Algorithm is organized and nicely formatted for easy use, but is not typed. —OR— Algorithm is typed, but the formatting and organization makes it somewhat difficult to use.	Algorithm has formatting and organization that makes it somewhat difficult to use AND is not typed. —OR— Algorithm may be typed, but the formatting and organization makes it extremely difficult to use.	Not enough criteria are met in order to award any credit.
Flow 4	The algorithm incorporates the appropriate use of all three types of programming structure: sequencing, selection, and iteration.	The algorithm incorporates the appropriate use of only two types of programming structure: sequencing, selection, and iteration.	The algorithm incorporates the appropriate use of only one type of programming structure: sequencing, selection, and iteration.	Not enough criteria are met in order to award any credit.
Correctness 3.5	The algorithm generates a unique and reproducible password for all sites.	The algorithm generates a reproducible password for all sites, however, some may not be unique. —OR— The algorithm generates a unique and reproducible password for most sites. —OR— The algorithm generates a unique password for all sites, however, it is not reproducible.	The algorithm generates a password for all sites, however, some may not be unique or reproducible. —OR— The algorithm generates a unique and reproducible password for only a few sites.	Not enough criteria are met in order to award any credit.
Effectiveness 4	The algorithm cannot be easily deduced from just the password and the name of the site.	A few parts of the algorithm can be easily deduced from just the password and the name of the site.	Most parts of the algorithm can be easily deduced from just the password and the name of the site.	Not enough criteria are met in order to award any credit.

Examples 4	There are five sample passwords generated correctly based on the algorithm.	There are four sample passwords generated correctly based on the algorithm.	There are three or fewer sample passwords generated correctly based on the algorithm.	Not enough criteria are met in order to award any credit.
Documented Case 4	There is one annotated example documented at all steps of the process. —AND— It is well formatted and organized and easy to follow.	There is one annotated example documented at most steps of the process AND It is well formatted and organized and easy to follow. —OR— There is one annotated example documented at all steps of the process, but the organization and formatting makes it difficult to follow.	There is one annotated example documented at some steps of the process AND It is well formatted and organized and easy to follow. —OR— There is one annotated example documented at all steps of the process, but the organization and formatting makes it extremely difficult to follow. —OR— There is one annotated example documented at most steps of the process, but the organization and formatting make it difficult to follow.	Not enough criteria are met in order to award any credit.