**Technical Design Document**

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**Program Description:**

This program uses regular expressions to validate a user supplied phone number, social security number, and ZIP code.

**Functions used in the Program (list in order as they are called):**

1. **Function Name:** validatePhoneNumber

**Description:** This function takes a user-supplied string and checks to see if there’s a valid phone number inside, printing one of two different messages depending on if one is found.

**Parameters:**

userString (string) – User supplied phone number.

**Variables:**

pattern (string) – Regex pattern used to check for a valid phone number.

**Logical Steps:**

1. Initialize pattern with the following regex pattern: Three digits, hyphen, three digits, hyphen, four digits, end of string.
2. Checks userString for a match. If a match is found, print “Valid phone number!” Else, print “Invalid phone number!”

**Returns:** None

2. **Function Name:** validateSSN

**Description:** This function takes a user-supplied string and checks to see if there’s a valid social security number inside, printing one of two different messages depending on if one is found.

**Parameters:**

userString (string) – User supplied social security number.

**Variables:**

pattern (string) – Regex pattern used to check for a valid social security number.

**Logical Steps:**

1. Initialize pattern with the following regex pattern: Three digits, hyphen, two digits, hyphen, four digits, end of string.
2. Checks userString for a match. If a match is found, print “Valid social security number!” Else, print “Invalid social security number!”

**Returns:** None

3. **Function Name:** validateZipCode

**Description:** This function takes a user-supplied string and checks to see if there’s a valid ZIP code inside, printing one of two different messages depending on if one is found.

**Parameters:**

userString (string) – User supplied social security number.

**Variables:**

pattern1 (string) – First of two regex patterns used to check for a valid ZIP code. (five digits alone)

pattern2 (string) – Second of two regex patterns used to check for a valid ZIP code. (five digits followed by a hyphen and four additional digits)

**Logical Steps:**

1. Initialize pattern1 with the following regex pattern: Five digits, end of string.
2. Intialize pattern2 with the following regex pattern: Five digits, hyphen, four digits, end of string.
3. Checks userString for a match. If a match is found using either pattern, print “Valid ZIP code!” Else, print “Invalid ZIP code!”

**Returns:** None

4. **Function Name:** main

**Description:** The main function takes a user-supplied message as a string input, passes it through the countPhrases

**Parameters:** This function takes no parameters.

**Variables:** This function has no variables.

**Logical Steps:**

1. Prompt user for phone number, call validatePhoneNumber using input as parameter.
2. Prompt user for social security number, call validateSSN using input as parameter.
3. Prompt user for ZIP code, call validateZipCode using input as parameter.

**Returns:** None

**Link to your repository:** https://github.com/HenryH-SCF/COP2373

**Output Screenshot: (make sure big enough so I can see)**