**Technical Design Document**

**Name:** Noah Muncie

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**Program Description:** This program is designed to validate user input for phone numbers, Social Security Numbers (SSNs), and ZIP codes using regular expressions. It prompts the user to enter these values and then determines whether each entry is valid based on predefined formats.

**Functions used in the Program:**

**Function Name:** validate\_phone\_number(phone)

**Description:** This function validates a phone number to ensure it follows the format (123) 456-7890.

**Parameters:**

* phone (string): The phone number entered by the user.

**Variables:**

* pattern (string): A regular expression pattern used to match valid phone numbers.

**Logical Steps:**

1. Define the regular expression pattern to match a phone number format of (XXX) XXX-XXXX.
2. Use the re.match() function to check if the input matches the pattern.
3. Return True if the input matches the pattern, otherwise return False.

**Returns:**

* Boolean: True if the phone number is valid, False otherwise.

**Function Name:** validate\_ssn(ssn)

**Description:** This function validates a Social Security Number (SSN) to ensure it follows the format 123-45-6789.

**Parameters:**

* ssn (string): The Social Security Number entered by the user.

**Variables:**

* pattern (string): A regular expression pattern used to match valid SSNs.

**Logical Steps:**

1. Define the regular expression pattern to match an SSN format of XXX-XX-XXXX.
2. Use the re.match() function to check if the input matches the pattern.
3. Return True if the input matches the pattern, otherwise return False.

**Returns:**

* Boolean: True if the SSN is valid, False otherwise.

**Function Name:** validate\_zip\_code(zip\_code)

**Description:** This function validates a ZIP code to ensure it follows the formats 12345 or 12345-6789.

**Parameters:**

* zip\_code (string): The ZIP code entered by the user.

**Variables:**

* pattern (string): A regular expression pattern used to match valid ZIP codes.

**Logical Steps:**

1. Define the regular expression pattern to match a ZIP code format of either XXXXX or XXXXX-XXXX.
2. Use the re.match() function to check if the input matches the pattern.
3. Return True if the input matches the pattern, otherwise return False.

**Returns:**

* Boolean: True if the ZIP code is valid, False otherwise.

**Function Name:** main()

**Description:** This function serves as the entry point of the program. It prompts the user for a phone number, SSN, and ZIP code, then validates each input and displays the results.

**Parameters:**

* None

**Variables:**

* phone (string): Stores the user's phone number input.
* ssn (string): Stores the user's SSN input.
* zip\_code (string): Stores the user's ZIP code input.

**Logical Steps:**

1. Prompt the user to enter a phone number, SSN, and ZIP code.
2. Call validate\_phone\_number() and print the result.
3. Call validate\_ssn() and print the result.
4. Call validate\_zip\_code() and print the result.
5. Display validation results for each input.

**Link to your repository:** <https://github.com/NMHero1/COP2373>

A computer screen with numbers and letters

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