**Input Validator: Phone Numbers, Social Security Numbers, and ZIP Codes**

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**Program Description:** A program that validates user input for common formatted data types: phone numbers, Social Security Numbers (SSN), and ZIP codes. The program uses regular expressions to verify that each input follows its standard format. It provides feedback to the user regarding the validity of their inputs and offers the option to validate multiple sets of data.

**Functions used in the Program:**

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

**Description:** Validates if a given phone number follows the format (XXX) XXX-XXXX.

**Parameters:**

* phone (str) - The phone number string to be validated

**Variables:**

* pattern (str) - Regular expression pattern for phone number validation

**Logical Steps:**

1. Define regex pattern for phone number format (XXX) XXX-XXXX
2. Use re.match to check if the input follows the pattern
3. Return True if it matches, False otherwise

**Returns:** bool - True if phone number is valid, False if invalid

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

**Description:** Validates if a given Social Security Number follows the format XXX-XX-XXXX.

**Parameters:**

* ssn (str) - The SSN string to be validated

**Variables:**

* pattern (str) - Regular expression pattern for SSN validation

**Logical Steps:**

1. Define regex pattern for SSN format XXX-XX-XXXX
2. Use re.match to check if the input follows the pattern
3. Return True if it matches, False otherwise

**Returns:** bool - True if SSN is valid, False if invalid

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

**Description:** Validates if a given ZIP code follows either the format XXXXX or XXXXX-XXXX.

**Parameters:**

* zip\_code (str) - The ZIP code string to be validated

**Variables:**

* pattern (str) - Regular expression pattern for ZIP code validation

**Logical Steps:**

1. Define regex pattern for ZIP code formats (XXXXX or XXXXX-XXXX)
2. Use re.match to check if the input follows either pattern
3. Return True if it matches, False otherwise

**Returns:** bool - True if ZIP code is valid, False if invalid

1. **Function Name:** main()

**Description:** Main function that handles user input collection and displays validation results.

**Parameters:** None

**Variables:**

* phone (str) - Stores user-input phone number
* ssn (str) - Stores user-input SSN
* zip\_code (str) - Stores user-input ZIP code

**Logical Steps:**

1. Prompt user for phone number, SSN, and ZIP code inputs
2. Call validate\_phone\_number() and display result
3. Call validate\_ssn() and display result
4. Call validate\_zip\_code() and display result

**Returns:** None

**Overall Program Logical Flow:**

1. Program starts and enters a continuous loop
2. User is asked if they want to validate data
3. If 'y' is entered:
   * main() function is called
   * User inputs phone number, SSN, and ZIP code
   * Each input is validated using respective functions
   * Results are displayed with checkmarks or X marks
4. If 'n' is entered:
   * Program displays goodbye message and exits
5. If invalid input:
   * Error message shown and user is prompted again
6. Process repeats until user chooses to exit

**Link to your repository:** https://github.com/xXTeinsXx/COP2373