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# **Profile Management System**

## **Introduction**

This document provides a detailed explanation of the Profile Management System code, which is designed to validate and update user profile information. The system ensures that the input data meets specific criteria, and if valid, updates the user's profile.

## **Problem Statement**

The problem addressed in this code is the need for a robust system to manage user profile information. The system must ensure that the input data is valid and meets specific criteria, such as name, email, and password requirements. Without such a system, user profile information may be inconsistent or vulnerable to errors.

## **Solution Approach**

The solution approach used in this code is to create a modular system with separate functions for validating name, email, and password. Each function checks the input data against specific criteria, and if valid, returns True. The update\_profile function uses these validation functions to ensure that the input data is valid before updating the user's profile.

## **Functionality of Code**

The code consists of four main functions:

### validate\_name(name)

* Checks if the input name is a string.
* Verifies that the length of the name is between NAME\_MIN\_LENGTH (3) and NAME\_MAX\_LENGTH (50) characters.
* Returns True if the name is valid, False otherwise.

### validate\_email(email)

* Checks if the input email is a string.
* Verifies that the length of the email is between EMAIL\_MIN\_LENGTH (5) and EMAIL\_MAX\_LENGTH (100) characters.
* Checks if the email matches the regular expression pattern EMAIL\_PATTERN.
* Returns True if the email is valid, False otherwise.

### validate\_password(password)

* Checks if the input password is a string.
* Verifies that the length of the password is between PASSWORD\_MIN\_LENGTH (8) and PASSWORD\_MAX\_LENGTH (128) characters.
* Checks if the password matches the regular expression pattern PASSWORD\_PATTERN, which requires at least one lowercase letter, one uppercase letter, one digit, and one special character.
* Returns True if the password is valid, False otherwise.

### update\_profile(name, email, password)

* Calls the validate\_name, validate\_email, and validate\_password functions to verify that the input data is valid.
* If all input data is valid, updates the user's profile information.
* Returns True if the update is successful, False otherwise.

## **Input and Output Format**

The input format for the update\_profile function is three string parameters: name, email, and password.

The output format is a boolean value indicating whether the update was successful (True) or not (False).

## **Conclusion**

In conclusion, the Profile Management System code provides a robust solution for validating and updating user profile information. The modular design and use of regular expressions ensure that the input data meets specific criteria, making the system reliable and efficient.

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