

OTP Verification System

Overview

The OTP Verification Program is a Python script that allows users to generate a 6-digit OTP, sends it to a user's email, prompt the user to enter the OTP received, and verify if the entered OTP matches the generated OTP. The program includes error handling and user-friendly prompts for ease of use.

Dependencies

- Python 3.x
- 'validate_email' package

Functionalities

1. generate_otp()

- **Input parameters:** N/A
- **Output parameters:** 6-digit OTP
- **Functionality:** Generates a random 6-digit OTP.
- **Usage:** Used to create a random OTP that will be sent to the user.

2. is_valid_email(email)

- **Input parameters:** email
- **Output parameters:** True/False
- **Functionality:** Checks if the entered email address is valid.
- **Usage:** Uses the `validate_email` package to verify the syntax and existence of the email address.

3. send_otp_email(generated_otp, user_email)

- **Input parameters:** generated_otp, email address
- **Output parameters:** N/A
- **Functionality:** Sends the OTP to the user's email address.
- **Usage:** In a real application, this function would send an email to the provided email address containing the OTP. In this simulation, it prints the OTP to the console.

4. prompt_for_otp()

- **Input parameters:** N/A
- **Output parameters:** N/A
- **Functionality:** Prompts the user to enter the OTP received in their email.
- **Usage:** Asks the user to input the OTP they received.

5. verify_otp(generated_otp, entered_otp)

- **Input parameters:** generated OTP, user entered OTP
- **Output parameters:** True/False
- **Functionality:** Verifies if the entered OTP matches the generated OTP.
- **Usage:** Compares the OTP entered by the user with the OTP generated to check if they match.

6. main()

- **Functionality:** Orchestrates the OTP generation, email simulation, OTP verification, and user interaction.
- **Usage:** Controls the flow of the program, handling user input and output.

7. Error Handling

- **Functionality:** Handles errors such as incorrect OTP entries and invalid email addresses.
- **Usage:** Provides feedback to the user and allows for retrying OTP entry thrice.

How to Use

1. **Install Python:** Ensure Python 3.x is installed on your system.

2. **Install Required Packages:** pip install validate_email

3. **Run the Program:** python otp_verification_system.py

4. Follow the Prompts:

- Enter your email address when prompted.
- Check your email for the OTP.
- Enter the OTP when prompted.
- If the OTP matches, verification is successful. Otherwise, retry.

Example

Here's an example of how to use the OTP Verification System:

Enter your email address: bhawana*****@gmail.com

OTP sent successfully to bhawana*****@gmail.com

Please enter the OTP you received in your email: 791124

OTP verified successfully!

Test Scenarios

- Scenario 1: Successful OTP Verification
 - **Description:** Verify OTP successfully with correct input.
 - **Steps:**
 1. Enter a valid email address.
 2. Check for the OTP.
 3. Enter the OTP correctly when prompted.
 - **Expected Outcome:** OTP verification successful message should be displayed.
- Scenario 2: Incorrect OTP Entry
 - **Description:** Verify OTP fails with incorrect OTP entry.
 - **Steps:**
 1. Enter a valid email address.
 2. Check for the OTP.
 3. Enter an incorrect OTP when prompted.
 4. Repeat the incorrect entry two more times.
 - **Expected Outcome:** After three incorrect attempts, the message "Failed to verify OTP. Please try again later." should be displayed.
- Scenario 3: Invalid Email Address
 - **Description:** Verify program handles invalid email address input.
 - **Steps:**
 1. Enter an invalid email address format (e.g., missing @ or domain).
 - **Expected Outcome:** Prompt user for a valid email address and retry.

- Scenario 4: Empty OTP Entry
 - **Description:** Verify program handles empty OTP entry.
 - **Steps:**
 1. Enter a valid email address.
 2. Check for the OTP.
 3. Press Enter without entering any OTP.
 - **Expected Outcome:** Prompt user to enter a valid OTP.

- Scenario 5: Retry OTP Entry
 - **Description:** Verify program allows user to retry OTP entry after failure.
 - **Steps:**
 1. Enter a valid email address.
 2. Check for the OTP.
 3. Enter an incorrect OTP.
 4. Enter an incorrect OTP again.
 5. Enter the correct OTP on the third attempt.
 - **Expected Outcome:** OTP verification successful message should be displayed after the correct OTP entry.

Note*** The verification system doesn't work as expected when domain name is incorrect.