

# PYTHON CAPSTONE PROJECT

## OTP VERIFICATION SYSTEM

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### Project Overview:

The OTP Verification System is a Python-based application that generates a 6-digit One-Time Password (OTP) and sends it to the user's email for verification. The user is required to enter the received OTP to gain access. The system ensures secure and reliable verification through error handling and user-friendly interaction.

### Project Requirements:

- **OTP Generation:** Creates a random 6-digit OTP.
- **Email Sending:** Sends the OTP to the user's email address using SMTP.
- **User Input:** Prompts the user to enter the OTP received in their email.
- **OTP Verification:** Verifies the entered OTP against the generated one.
- **Retry Mechanism:** Allows up to three attempts for the user to enter the correct OTP.

### Project Evaluation:

- Your project will be evaluated based on the following criteria:
- Correctness and functionality of the OTP generation, sending, and verification process.
- Code quality, including adherence to Python best practices, readability, and documentation.
- Error handling and user interaction aspects of the system.
- Robustness and reliability of the system under different scenarios.

### Functionality of each function:

1. **Generate\_otp()**
  - **Description:** Generates a random 6-digit OTP.
  - **Returns:** A string representing the OTP.

## 2. `send_otp(email, otp)`

- **Description:** Sends the generated OTP to the provided email address.

### Parameters:

- **email:** The recipient's email address.
- **OTP:** The OTP to send.

## 3. `get_user_otp()`

- **Description:** Prompts the user to enter the OTP.
- **Returns:** The user-entered OTP as a string.

## 4. `verify_otp(generated_otp, entered_otp)`

- **Description:** Compares the generated OTP with the user-entered OTP.

### Parameters:

- **generated\_otp:** The OTP generated by the system.
- **entered\_otp:** The OTP entered by the user.

## Running the Program:

- Enter your email address when prompted.
- Check your email for the OTP and enter it into the console.

## Error Handling:

- The program includes basic error handling, such as catching exceptions during the email sending process and guiding the user if something goes wrong.
- If an incorrect OTP is entered, the user is informed and allowed to retry up to three times

## Conclusion

This OTP Verification System provides a secure and user-friendly method for verifying user identity via email.

## **References file**



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