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| RAZDA Co. | | |
| **Filename: [email\_verification.py]** | | |
| **Summary***:*  The email\_verification.py script manages email verification for new user accounts in Razda Market. It sends verification emails with unique tokens to confirm the validity of user email addresses. The script securely stores verification tokens, tracks token usage, and updates user verification status upon confirmation. This process prevents unauthorized account creation and enhances user security by requiring verified emails before granting full access to the platform. | | |
| ***Processes*** | | |
| * **Enviroment and Logging setup:** | * **Loads environment variables securely for database and SMTP server configurations. Configures logging to email\_verification.log, recording key actions (e.g., token creation, email sending) and errors to provide an audit trail for email verification processes.** | |
| * **Database Connection:** | * **Defines connect\_db() to handle secure database connections, enabling token storage and retrieval. Logs errors if connection fails, ensuring issues are tracked and troubleshooting is facilitated.** | |
| * **Email Verification Token Generation:** | * **Generates unique verification tokens using uuid.uuid4(), which are stored in the database and associated with the user. Tokens are embedded in verification emails, linking back to the app for confirmation. Tracks token usage to prevent repeated access with the same token.** | |
| * **Email Sending:** | * **Constructs and sends verification emails using SMTP, embedding unique tokens in clickable links for user convenience. Configures email content and uses secure email transport with starttls(), logging successful email dispatches for tracking.** | |
| **Files it Gets Information From:** | | **Files it Sends too:** |
| * **.env file**: Contains database and SMTP credentials, including DB\_HOST, DB\_USER, DB\_PASSWORD, SMTP\_SERVER, SMTP\_PORT, SMTP\_USER, and SMTP\_PASSWORD. Environment variables keep sensitive information secure and configurable. | | * **Log file (email\_verification.log)**: Logs actions such as token generation, email sending, and verification attempts. Logs also capture errors, including connection issues and token validation failures, supporting system auditability and debugging. |
| **Expected input into file:** | | **Expected output from file:** |
| * **User ID, Email, Username**: Required inputs for sending a verification email, including the user’s unique ID and email address. **Token**: Generated uniquely for each verification link. Upon email confirmation, the token is verified in the database. | | * **Database Record for Token**: Each token is stored in the user\_verifications table, associated with user\_id and marked as unused. **Verification Email**: Sends an email to the user with a link containing the unique token for account verification. Logs and database updates confirm when a token is used. |
| **Things that need to be taking place:** | | |
| |  | | --- | | **1. Environment Variable Security: Ensure all necessary environment variables are configured in .env, including SMTP and database credentials. Secure the .env file to prevent unauthorized access to sensitive information.** |  |  | | --- | | **2. Logging Verification: Confirm that email\_verification.log records all actions, including token generation, email dispatch, and verification attempts. Logs should capture timestamps, user IDs, and error messages, facilitating audits and error diagnosis.** |  |  | | --- | | **3. Token Security and Uniqueness: Validate that tokens generated with uuid.uuid4() are unique, unpredictable, and securely stored. Each token should correspond to a single user and verification instance, preventing reuse or forgery.** |  |  | | --- | | **4. SMTP Configuration and Testing: Confirm that SMTP settings are accurate, with secure credentials configured in .env. Test email dispatch to verify successful connection, secure transmission (starttls()), and correct email formatting.** |  |  | | --- | |  | | | |
| Edit log (update each time you make changes to doc or file). | | |
| * Oliver Smith (Razda Admin) Nov 8, 2024: | | |