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| RAZDA Co. | | |
| **Filename: [performance\_alerts.py]** | | |
| **Summary***:*  This file continuously monitors the performance of the Razda Market platform by checking CPU, memory, and disk usage, database response time, and critical API response times. It alerts the admin through alert\_manager if any performance metrics exceed predefined thresholds, logs alerts for future reference, and allows the generation of performance reports for specified date ranges. | | |
| ***Processes*** | | |
| * **Database Response Monitoring** | **Measures the response time of the database and triggers alerts if it exceeds the threshold.** | |
| * **Server Resource Monitoring** | **Checks CPU, memory, and disk usage to ensure they remain within acceptable limits, triggering alerts for excessive usage.** | |
| * **API Response Time Monitoring** | **Evaluates the response times of critical APIs, such as SquareSpace Order API, and alerts if they fail or exceed response limits.** | |
| * **Periodic Performance Monitoring** | **Schedules recurring performance checks on the server, database, and APIs at specified intervals using a background thread.** | |
| * **Display Recent Alerts** | **Displays the most recent performance alerts from the log file, helping administrators quickly assess recent performance issues.** | |
| * **Generate Performance Report** | **Creates a report for a specific date range based on logged alerts, aiding in performance analysis over time.** | |
| **Files it Gets Information From:** | | **Files it Sends too:** |
| * **Environment Variables** (dotenv): For configuration of database and threshold settings. | * **Log File** (performance\_alerts.log): Logs details of performance alerts and monitoring activities. | |
| * **Alert Manager** (alert\_manager): For triggering alerts based on performance data. | * **Alert System**: Sends critical alerts to the alert\_manager for further processing and notification to admins. | |
| * **Database** (razda\_market\_db): Connects to database for response time checking. | * **Database** (razda\_market\_db): Records performance logs and thresholds as needed for analysis. | |
| * **Critical APIs** (e.g., SquareSpace): Monitors external API response times. | * **Admin Dashboard**: Displays the performance report for administrator review. | |
| **Expected input into file:** | | **Expected output from file:** |
| **Threshold Settings**: Configurable limits for CPU, memory, disk, API, and database response times.  ‘’’python  CPU\_THRESHOLD, MEMORY\_THRESHOLD, DISK\_THRESHOLD  ‘’’  **Monitoring Interval**: Controls how often the system checks for performance issues. | | **Alerts**: Sends alerts to alert\_manager if any threshold is breached.  ‘’’python  alert\_manager.trigger\_alert(alert\_type='Server Performance', severity='High', message=message)  ‘’’  **Performance Log**: Logs all performance checks and alerts for tracking. |
| **Things that need to be taking place:** | | |
| |  | | --- | | **● Scheduled Monitoring: Automatically triggers performance checks at specified intervals, ensuring ongoing monitoring.** |  |  | | --- | | **● Alert Handling: Sends alerts through alert\_manager when any monitored metric exceeds its defined threshold, improving response times for critical issues.** |  |  | | --- | | **● Logging of Performance Data: Records all performance checks and alerts in performance\_alerts.log to provide historical context and aid in trend analysis.** |  |  | | --- | | **● Threshold Configuration: Loads and adheres to predefined thresholds for all monitored metrics, allowing customizable performance targets for different environments.** |  |  | | --- | | **● Database and API Response Measurement: Continuously measures database response time and critical API response times to ensure timely detection of performance degradation.** |  |  | | --- | | **● Performance Reporting: Enables admins to generate performance reports based on historical data, allowing for data-driven decision-making and resource allocation.** |  |  | | --- | |  | | | |
| Edit log (update each time you make changes to doc or file). | | |
| Contribution to the Entire Project:  The **performance\_alerts.py** file is critical to ensuring Razda Market’s infrastructure remains operational and performant. By proactively monitoring and logging server, database, and API performance, it reduces the risk of downtime and performance bottlenecks. This file’s robust alerting and reporting features equip administrators with the tools to quickly respond to and analyze performance issues, making it an essential part of the platform’s operational resilience. | | |
| * Oliver Smith (Razda Admin) Nov 8, 2024: Configured for monitoring server, database, and API performance; implemented alert triggering for thresholds; added performance logging and report generation. | | |