

# Product Performance Analysis and Reporting System

## 1. Introduction

This document outlines the requirements for a system designed to automatically retrieve store data from the Pet Store API (<https://petstore.swagger.io/#/>), analyze product performance metrics, and generate a summary report. The report will be emailed weekly to the sales team, specifically to [victoria.sagdieva@cyoda.com](mailto:victoria.sagdieva@cyoda.com), with automated data extraction scheduled for every Monday.

## 2. Purpose

The primary purpose of this application is to streamline the collection and analysis of product performance data, providing actionable insights through automated reporting. This will help the sales team understand sales trends and inventory status, enabling informed business decisions.

## 3. Application Features

### 3.1 Data Extraction

Automated Data Collection:

Fetch product sales data and stock levels from the Pet Store API.  
Data extraction should run automatically every Monday at a defined time.  
Data Formats:

Support retrieval of various data from the API, including JSON and XML formats.

### 3.2 Product Performance Analysis

Performance Metrics:

Analyze key performance indicators (KPIs) such as sales volume, revenue per product, and inventory turnover rates.

Data Processing:

Process the retrieved data to identify trends and highlight underperforming products. Implement aggregation methods to summarize data by category, time periods, or other relevant dimensions.

### 3.3 Report Generation

Summary Report:

Generate a weekly summary report that includes:  
Overview of sales trends (e.g., highest-selling products, slow-moving inventory).  
Inventory status, including items that require restocking.  
Insights on product performance over time.  
Custom Report Templates:

Allow customization of report layout and content as per the sales team's preferences.

### 3.4 Email Notification

#### Automated Email Dispatch:

Email the generated report to the sales team at victoria.sagdieva@cyoda.com upon completion of the analysis.

#### Email Content:

Include a brief overview of the report in the body of the email.

Attach the detailed report either as a PDF or in a suitable format.

#### 4. Key Areas of Focus

##### User-Friendly Interface:

Provide a simple interface for stakeholders to configure data extraction settings and frequency.

##### Error Handling:

Implement mechanisms to address errors in data extraction or analysis and notify relevant personnel.

##### Security Measures:

Ensure secure handling of product data, adhering to privacy regulations.

#### 5. Technical Requirements

##### Infrastructure:

Utilize cloud services or local servers for data processing and storage.

##### Integration:

Integrate with the Pet Store API (<https://petstore.swagger.io/#/>) to fetch product performance data reliably.

##### Analytics Tools:

Use libraries or services (e.g., Pandas for data manipulation, Matplotlib for data visualization) for performance analysis.

#### 6. Additional Considerations

##### Scalability:

Ensure the system can handle an increasing volume of data over time without performance degradation.

##### Maintenance:

Plan for regular updates and maintenance to enhance features and improve analysis accuracy.

#### 7. Conclusion

This PRD outlines the development of a product performance analysis and reporting system that automates data extraction, performance evaluation, and reporting. The goal is to provide the sales team with timely insights to enhance decision-making and optimize product management. The reports will be sent directly to victoria.sagdieva@cyoda.com for easy access.