**Software Requirements Specification (SRS)**

## **1. Overview**

This document provides the Software Requirements Specification (SRS) for the OctoPerf PetStore Demo Application, focusing on the catalog functionalities, including user registration, login, product search, cart management, and order placement.

The document aims to detail the functional and non-functional requirements, define the environment and considerations for the software, and act as a baseline for further development, testing, and maintenance.

### **1.1 Scope**

The OctoPerf PetStore application simulates a real-world online pet store.  
 Users should be able to:

* Register a new account
* Log into their account
* Search for products
* Add products to their shopping cart
* Place orders

This SRS is specifically prepared for validating and expanding the catalog functionalities accessible at:  
 <https://petstore.octoperf.com/actions/Catalog.action>.

## **2. References**

* OctoPerf PetStore Demo Documentation
* JMeter Testing Documentation
* IEEE Standard 830-1998 (Recommended Practice for Software Requirements Specifications)
* Selenium Documentation

## **3. Definitions**

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| **Term** | **Definition** |
| SRS | Software Requirements Specification |
| QA | Quality Assurance |
| JMeter | An open-source tool designed for load testing and measuring performance |
| Selenium | A framework for automating web browser interaction |
| Cart | Virtual container holding user-selected products prior to checkout |
| Checkout | The process by which a customer finalizes a purchase |
| User | A customer or visitor using the PetStore platform |

## **4. Considerations for producing a good SRS**

### **4.1 Nature of the SRS**

This SRS is intended to:

* Capture the full set of functional requirements for user-facing catalog operations.
* Define constraints, assumptions, and non-functional requirements.

### **4.2 Environment of the SRS**

* Web-based application accessible via standard browsers (Chrome, Firefox).
* Internet access is required to operate the application.
* Functionalities are available via the OctoPerf-hosted demo environment.

### **4.3 Characteristics of a good SRS**

* **Correctness**: All stated requirements will be verifiable by testing.
* **Unambiguity**: Requirements are stated clearly to avoid multiple interpretations.
* **Completeness**: All necessary user actions related to registration, login, search, cart, and checkout are documented.
* **Consistency**: No conflicting requirements.
* **Ranked for importance**: Critical functionalities are prioritized (registration and checkout are highest).
* **Modifiability**: Updates to the SRS can be easily managed.
* **Traceability**: Each requirement can be traced back to a feature or business rule.

### **4.4 Joint preparation of the SRS**

* Input from developers, QA engineers, project managers, and stakeholders was considered.
* Requirements were validated during preliminary walkthrough sessions.

### **4.5 SRS evolution**

* Changes in business needs, UI/UX updates, or technical advancements may lead to updates in the SRS.
* Version control mechanisms will be in place to track all changes.

### **4.6 Prototyping**

* A working prototype (OctoPerf PetStore Demo) is available for validating user flows and system behavior.

### **4.7 Embedding design in the SRS**

* Basic UI workflows are referenced but detailed design elements (wireframes, layouts) are maintained separately.
* Main user actions such as clicking 'Add to Cart' or 'Place Order' are described at a functional level.

### **4.8 Embedding project requirements in the SRS**

* Business objectives (easy-to-use online shopping) are reflected in the requirement descriptions.
* Security (authentication) and reliability (order confirmation) are embedded within functional expectations.

## **5. The parts of an SRS**

### **5.1 Introduction (Section 1 of the SRS)**

The introduction describes the purpose, intended audience, scope, and overview of the PetStore SRS for catalog-related operations.

### **5.2 Overall description (Section 2 of the SRS)**

* **Product Perspective**: The PetStore is a standalone web application.
* **Product Functions**:
  + User registration and profile creation
  + Login authentication
  + Search functionality for pet products
  + Adding and removing items from the shopping cart
  + Order placement and confirmation display
* **User Characteristics**: End-users with basic internet browsing skills.
* **Constraints**:
  + Browser compatibility with Chrome and Firefox
  + Sessions expire after inactivity
* **Assumptions and Dependencies**:
  + The user has access to the internet.
  + The database service is available for user accounts and orders.

### **5.3 Specific requirements (Section 3 of the SRS)**

* **User Registration**:
  + Mandatory fields: username, password, email.
  + Validation of duplicate usernames.
* **User Login**:
  + Authentication using valid credentials.
  + Redirection to the main catalog page upon successful login.
* **Product Search**:
  + Keyword-based search functionality.
  + Display search results with product names and prices.
* **Cart Management**:
  + Add selected products to the shopping cart.
  + Update quantities or remove items from the cart.
* **Order Placement**:
  + Proceed to checkout from the cart.
  + Confirm shipping and payment information.
  + Display order confirmation summary.
* **Error Handling**:
  + Clear error messages for invalid actions (e.g., invalid login, empty search).

### **5.4 Supporting information**

* **User Interface Requirements**:
  + Simple and intuitive UI design.
  + Search bar, add-to-cart button, and checkout option must be clearly visible.
* **Performance Requirements**:
  + Average page load time should not exceed 2 seconds under normal load.
* **Security Requirements**:
  + Passwords must be securely encrypted.
  + Sessions must be securely managed to prevent unauthorized access.
* **Software and Tools**:
  + JMeter for load testing.
  + Selenium for automation testing.