Software Requirements Specification Document

Systems Requirements Specification

Table of Contents

Systems Requirements Specification

I. Introduction

A Purpose

B Scope

C Definition, Acronyms, or Abbreviations

D References

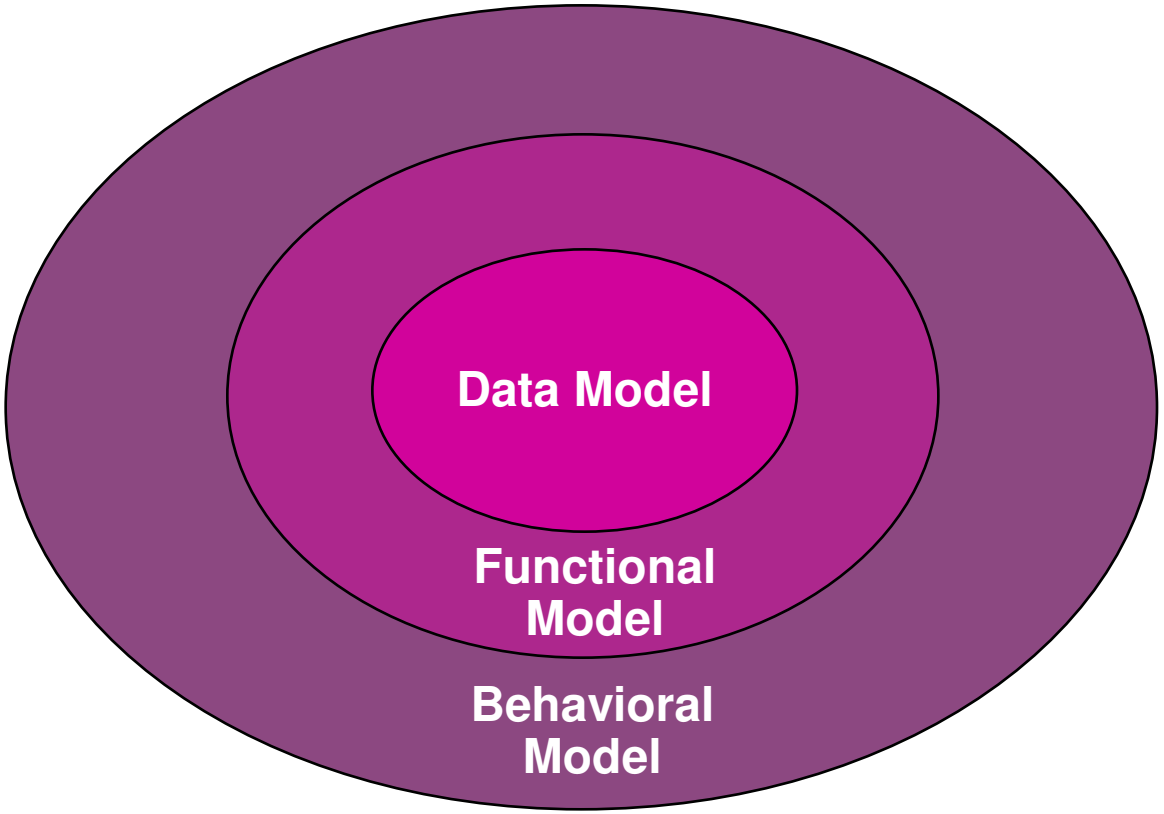
E Overview

Systems Requirements Specification

II. General Description

- **A Product Perspective**
- **B Product Functions**
- **C User Characteristics**
- **D General Constraints**
- **E Assumptions**

Systems Requirements Specification



The SRS is composed of the outer layer of the behavioral model, the functional model, then the data model.

Systems Requirements Specification

- Correct
- Precise
- Unambiguous
- Consistent
- Modifiable
- Design Independent
- Concise
- Complete
- Organized
- Verifiable
- Understandable
- Traceable
- Annotated

Systems Requirements Specification

Correct -

specifies every true requirement known at that time and no incorrect

specifications - no wrong data

Precise -

remember this must eventually turn to executable code, fuzzy words in requirements are not acceptable - fuzzy words

Unambiguous

each requirement has only one interpretation - English interpretation

Complete -

everything included behavior (methods, use cases, systems, subsystems, business rules) and data (objects, attributes

Systems Requirements Specification

Verifiable

is the software built what was specified in the SRS

Consistent

conflicting terms, characteristics

Understandable

question: are formal specifications understandable, are informal specifications understandable

Systems Requirements Specification

Modifiable

changing requirements easily modified when specifying, designing, coding, implementing

Traceable

can I locate the SRS origin of software components.

Design Independent

SRS should not specify a particular design

Systems Requirements Specification

- Section One
  - Overview document for executives describing the system from a management perspective
- Section Two
  - General Description describing the system from a user and system perspective in general terms.
- Section Three
  - Detailed document for users and developers describing the system in detailed terms.

Systems Requirements Specification

SRS - Section I - Introduction

Definition of section contents

In the next slides, the deliverable is defined using blue and black font. Then an small example of the needed deliverable is documented with a gray background

Systems Requirements Specification

I. Introduction

A Purpose

B Scope

C Definition, Acronyms, or Abbreviations

D References

E Overview

Systems Requirements Specification

I. Introduction

A Purpose

The purpose of this Software Requirements Specification document

Intended audience of this document

Systems Requirements Specification

I. Introduction

A Purpose

The purpose of the Software Requirements Specification document is to clearly define the system under development, namely the Video Rental System (VRS). The intended audience of this document includes the owner of the video store, the clerks of the video store, and the end users of the VRS. Other intended audience includes the development team such as the requirements team, requirements analyst, design team, and other members of the developing organization.

Systems Requirements Specification

I. Introduction

B. Scope

Origin of need
High-level description of the system functionality
Goals of proposed system

Systems Requirements Specification

I. Introduction

B. Scope

Origin of the need

- who and what triggered the request for this software development activity
- gives developers an understanding of the goals for the proposed system

Systems Requirements Specification

I. Introduction

B. Scope

High-level functionality

- defined for the system
- usually in list separated by commas

Systems Requirements Specification

I. Introduction

B. Scope

Goals are general purposes of a system.
They are fuzzy and non measurable.

A typical goal would be things like

- Increase customer satisfaction
- Make xyz easier for the customer
- Improve customer relationships

Systems Requirements Specification

I. Introduction

B. Scope

The owner of a local video store wanted to create a new business plan where everything about renting a video (except the picking up and returning of videos) was done online. Therefore, the new VRS will allow the following functionality online: to search for videos, to become members, to rent videos, to modify membership information, and to pay overdue fees. The store personnel may use the VRS to process the rented or returned videos, to add or remove videos to/from his store's video inventory and to update video information. The VRS is intended to increase the owner's profit margin by increasing video sales with this unique business approach and by allowing him to reduce the staffing needed in his stores.

Systems Requirements Specification

I. Introduction

C. Definitions, Acronyms..

As you begin to define a system, you will encounter words which need definition and general usage acronyms. These should be documented for new personnel and for clarity of all concerned parties.

Systems Requirements Specification

I. Introduction C Definitions, Acronyms..

FSU – Florida State University

CS - Computer Science

MSES - Masters in Software Engineering Science

DOE - Department of Education

….

Systems Requirements Specification

I. Introduction

D. References

Many references may be used to define existing systems, procedures (both new and old), documents and their requirements, or previous system endeavors. These references are listed here for others.

If any of these references are provided in the appendices, it should be noted here.

Systems Requirements Specification

I. Introduction D References

Clerk - Personnel staff who is working in a video store

Customer - Anyone who interacts with the VRS with becoming a member

Functional requirement - A service provided by the software system

Member - Anyone who registers with the VRS to acquire membership in the video store

Section I of SRS

I.A Purpose	Paragraph form
I.B Scope of the System Specified	Paragraph form
I.C Definitions, Acronyms, and Abbreviations	Table form or bulleted list
I.D References to Supporting Documents	Bulleted list
I.E Overview of rest of SRS	Paragraph form

Systems Requirements Specification

I. Introduction

E. Overview

This section defines the organization of the entire document. It will lay the framework for reading the document.

Systems Requirements Specification

I. Introduction E Overview

Section 2 of the SRS describes the product in more detail. Section 3 provides a complete list of the functional requirements of the intended system. Section 4 provides the non-functional requirements. Section 5 shows the class diagram, and Section 6 the use case diagram. The appendices appear next.

Systems Requirements Specification

II. General Description

A Product Perspective

B Product Functions

C User Characteristics

D General Constraints

E Assumptions

Systems Requirements Specification

II General Description

A Product Perspective

This defines the relationship this product has in the entire spectrum of products.

It defines who will be responsible for the product and what business purpose it serves.

It also defines what interfaces it may have to other systems.

Systems Requirements Specification

II General Description

A Product Perspective

The VRS is a web-based system. The system interfaces with two other systems, the owner's email system, the video distributor's video system, and the browsers used by VRS customers. The system provides a secure environment for all financial transactions and for the storing and retrieving of confidential member information.

Systems Requirements Specification

II. General Description B Product Functions

This section lists the major functions of the system.

It provides a summary of all the functions of the software. The functions should be organized in a way that makes the list of functions understandable to the customer or to anyone else reading the document for the first time.

This section should be consistent with the functional requirements defined in Section III.

Systems Requirements Specification

II. General Description – B Product Functions

The VRS allows customers to search the video inventory provided by this video store. To rent videos through the VRS, one must register as a member using the VRS. Upon becoming a member and logging into the VRS, the VRS provides the functionality for renting videos, modifying membership information, and paying overdue fines.

The clerks of the video store use VRS to process the return of rented videos. The owner of the video store uses VRS to add new videos into the system, remove videos from the system, and modify video information.

The VRS sends emails to members concerning video rentals. One day before a rented video is due to be returned, VRS emails the member a reminder of the due date for the video(s). For any overdue videos, VRS emails the member every 3rd day with overdue notices. At the 60-day limit for outstanding videos, VRS debits the member's credit card with the appropriate charge and notifies the member of this charge.

Systems Requirements Specification

II. General Description – C User Characteristics

List the users involved with the proposed system including the general characteristics of eventual users (for example, educational background, amount of product training).

List the responsibility of each type of user involved, if needed.

Systems Requirements Specification

II. General Description – C User Characteristics

The three main groups of VRS users are customers, members, and store personnel. A customer is anyone who is not a member. The customer can only search through the video inventory. The amount of product training needed for a customer is none since the level of technical expertise and educational background is unknown. The only skill needed by a customer is the ability to browse a website.

Member is someone who has registered with VRS. A member can rent videos and pay fees online. As with a customer, these activities require no product training since the level of technical expertise and educational background of a member is unknown. The only skill needed by a member is the ability to browse a website.

The store personnel are divided into two groups: the clerk-level personnel and owner-level personnel. Their educational level is unknown and both group needs little to no training.

Systems Requirements Specification

II. General Description – D General Constraints

D General Constraints

In this section, the constraints of the system are listed. They include hardware, network, system software, and software constraints. It also includes user constraints, processing constraints, timing constraints, and control limits.

Systems Requirements Specification

II. General Description – D General Constraints

This system provides web access for all customer and member functions. The user interface will be intuitive enough so that no training is required by customers, members, or store personnel. All online financial transactions and the storage of confidential member information will be done in a secure environment. Persistent storage for membership, rental, and video inventory information will be maintained.

Systems Requirements Specification

II General Description – D Assumptions and Dependencies

This includes assumptions made at the beginning of the development effort as well as those made during the development.

List and describe each of the factors that affect the requirements stated in the SRS. These factors are not design constraints on the software but any changes to them can affect the requirements in the SRS. For example, an assumption might be that a specific operating system will be available on the hardware designated for the software product. If, in fact, the operating system is not available, the SRS would then have to change.

Section II of SRS

II.A Product Perspective	Paragraph form
II.B Product Functions	Paragraph form
II.C User Characteristics	Paragraph form
II.D General Constraints	Paragraph form
II.E Assumptions and Dependencies	Paragraph form

Systems Requirements Specification

III Functional Requirements

Functional requirements are those business functions which are included in this software under development. It describes the features of the product and the needed behavior.

The functional requirements are going to be written in narrative form identified with numbers. Each requirement is something that the system SHALL do. Thus, it has a common name of a *shall* list. You may provide a brief design rationale for any requirement which you feel requires explanation for how and/or why the requirement was derived.

Systems Requirements Specification

IV Non Functional Requirements

Non functional requirements are properties that the system must have such as performance, reusability, usability, user friendliness, etc.

The same format as the functional requirements is to be used for the non-functional requirements. You may provide a brief design rationale for any requirement which you feel requires explanation for how and/or why the requirement was derived.

Systems Requirements Specification

V System Architecture

This section presents a high-level overview of the anticipated system architecture using a class diagram. It shows the fundamental objects/classes that must be modeled with the system to satisfy its requirements. Each class on the diagram must include the attributes related to the class. All the relationships between classes and their multiplicity must be shown on the class diagram. The classes specified in this document only are those directly derived from the application domain.

Systems Requirements Specification

VI System Models

This section presents the use case diagram for the system under development. The use case diagram should be a complete version containing all the use cases needed to describe the functionality to be developed.

Systems Requirements Specification

VII Appendixes

Appendix A. Data dictionary

Appendix B. Raw use case point analysis

Appendix C. Screens and reports with navigation matrix.

Appendix D. Scenario analysis tables

Appendix E. Screens/reports list

Appendix F and following. Other items needed