Advanced Software Engineering Lab-Autumn 2022-23

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Software Requirements Specification 2022

SOFTWARE COMPONENT CATALOGUING SOFTWARE

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1 Introduction

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations and references. The software component cataloguing software consists software consists of a software parts catalog and various functions defined in this parts catalog. A catalog of software components should contain information about potentially reusable components. Catalog authors can enter components into the catalog, remove components from the catalog, and assign reuse information to catalog components in the form of a set of keywords.

Catalog users can query the availability of components by describing the component using specific keywords. To help manage the component catalog (that is, periodically remove unused components), the catalog software maintains information such as: For example, the number of times the component was used and the number of times the component appeared in a query but was not used. Components are organized hierarchically into categories. Users can browse components in each category. SOFTWARE COMPONENT CATALOGING SOFTWARE detailed requirements are included in this document.

1.1 Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this catalogue will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

The purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality.

1.2 Scope

There are two basic users – Customer and Administrator
All users have their own profiles in Software Component cataloguing software. Administration can delete unusable components, insert new components and update existing components. Customer can give feedback regarding to components. In Fig. 1 we can see the use case diagram of Software Component cataloguing software.

1.3 Definitions

ADMIN
Administrator. He has the authority to add/delete users.

MEAN STACK
The MEAN stack is one of the most popular technology stacks. Used for developing full-stack web applications. Despite being stacks of different technologies, they are all based on the JavaScript language.

MEAN Stands for:

- M – MongoDB
- E – Express
- A – Angular
- N – Node.js

This stack speeds up the development and deployment of web applications. Angular is the front-end development framework, while Node.js, Express, and MongoDB are used for back-end development.

DB2
$Database_2$.A database management system that provides a flexible and efficient database platform to maintain records of patients, doctors, admin.

JSP
Java Server Pages. It is used to create dynamic web content

J2EE
Java 2 Enterprise Edition. A programming platform which is a part of java platform for developing and running distributed java

UML
Unified Modeling Language is a standard language for writing software blueprints. The UML may be used to visualize, specify, construct and document.

XML
Extensible Markup Language is a text based format that let developers describe, deliver and exchange structured data between a range of applications to client for display and manipulation.

HTTP
Hypertext Transfer Protocol. It's a service protocol

1.4 References

- Software Engineering, 4TH Edition, RAJIB MALL [1].
- A catalogue of component connectors to support development with reuse. [2]
- Modelling and implementation of catalogue cards using FreeMarker. [3]

1.5 Overview of Developer's Responsibilities

The remaining sections of this document provide a general description, including the characteristics of the users of this project, the product's hardware, and the functional and data requirements of the product. A general description of the project is discussed in section 2 of

this document. Section 3 gives the functional requirements, data inputs, data processing and outputs. It also gives the user viewpoint of the product.

2 General Description

2.1 Product Perspective

User can browse the browser i.e internet explorer, Firefox, Google Chrome, etc. -HTTP server plug-in Web container contains JSP Servlet through this enter into the java bean EJBs and then through by JDBC we can store information and manage the information. Users are also able to request new components as well as can write reviews and give rating.

2.2 Product Function overview

The system functions can be described as follows:

Registration: Customer should register his bio-data like name, date of birth aadhaar number, phone number, email address, etc.

Report Generation: A user of the catalogue may query about the availability of a component using certain key words to describe the component.

2.3 User Characteristics

The system will be used in the organization. The administrators, customer will be the main users. The system is also designed to be user-friendly. It uses a Graphical User Interface (GUI).

2.4 General Characteristics

- The software should be developed within 4 months.
- The system must be user-friendly.
- Cost of this software should be the range of 500000 rupee or 6259 dollars

3 Functional Requirement

3.1 Introduction

The software component cataloguing software consists of a software components catalogue and various functions defined on this components catalogue. The software components catalogue should hold details of the components which are potentially reusable. The reusable components can be either design or code.

3.2 User Registration

Customer can use it to register. This use case begins when the user begins to register. Users are allowed to input the basic information such as username, user id, password, confirm password address, telephone number, e-mail address, postcode, real name and so on. If the information is correct, then user can finish registration.

3.3 User Login

Customers can log in to the system. This use case begins when the user begins to log in. User inputs his username and password, and then submits. If the username and password are correct, he will successfully log in otherwise they need to reset their credential.

3.4 User Profile

A user of the catalogue may update his/her profile. A user can also change the password.

3.5 Show the most popular products being visited

Customers can get the latest information on the hot products being visited

3.6 Show the most popular products being sold

The page will show the 5 products, which has the highest sales. On the other side, after the user chooses the type of the component, the system will show the products with the highest sales relevant to this kind of product.

3.7 Product Query

User can find product by inputting part of the name of the product .This use case begins when the user inputs part of the name of the product he/she likes. The product will be found and then the user can select the product.

3.8 Delete Component

Cataloger can delete unused components those are not been visited longer time.

3.9 Rating

User can rate the product up to 5 stars. Appearing as 1 to 5-star ratings that also display the total number of reviews for the product. These ratings and reviews help with product research and purchase decisions, driving more qualified customers to the product pages.

3.10 User Feedback

User gives feedback about the product or can write a review. As we know user feedback is qualitative and quantitative data from customers on their likes, dislikes, impressions, and requests about a product. Collecting and making sense of user feedback is critical for businesses and decision making that wish to make improvements based on what their users need.

4 Specific Requirements

4.1 User

1. User loads the application and enters identification information
   - 1.1 User enters their first and last name and registers in the system.
   - 1.2 User authenticates and login into the system.
   - 1.3 User searches the software component and uses it for its project if it is available in the list.
   - 1.4 User exit the application if a component is not available in the system.

4.2 Cataloger

1. Cataloger loads the application and enters identification information
   - 1.1 Cataloger enters their first and last name and registers in the system.
   - 1.2 cataloger authenticates and login into the system.
   - 1.3 cataloger searches the software component in the inventory and updates the list either by adding a component or deleting it
   - 1.4 Cataloger exit the system.

5 Modelling Requirements

5.1 Use Case Diagram

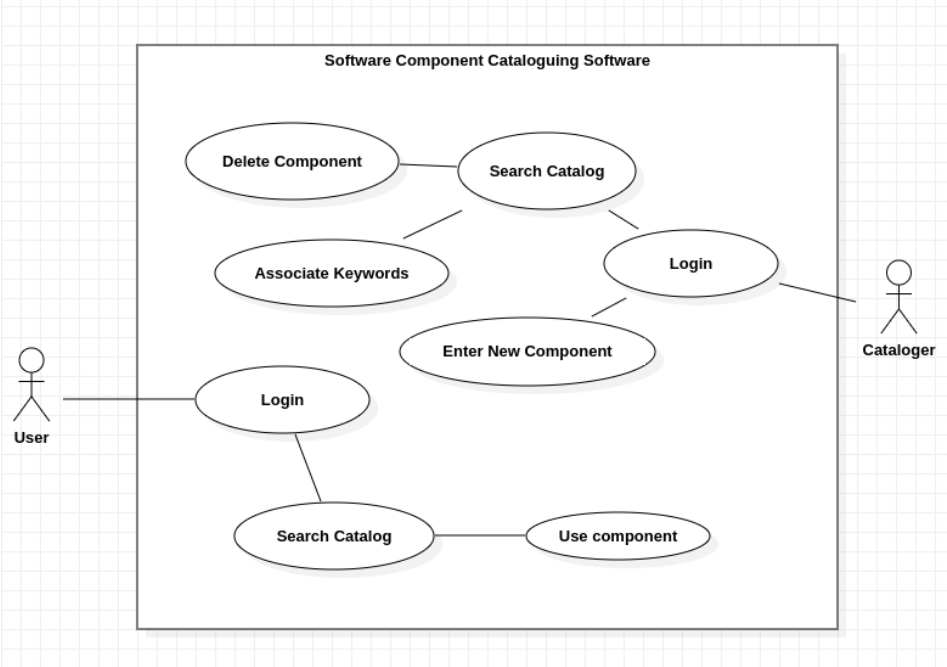

Figure 1: Use Case Diagram of software component cataloguing software

5.2 State Diagram

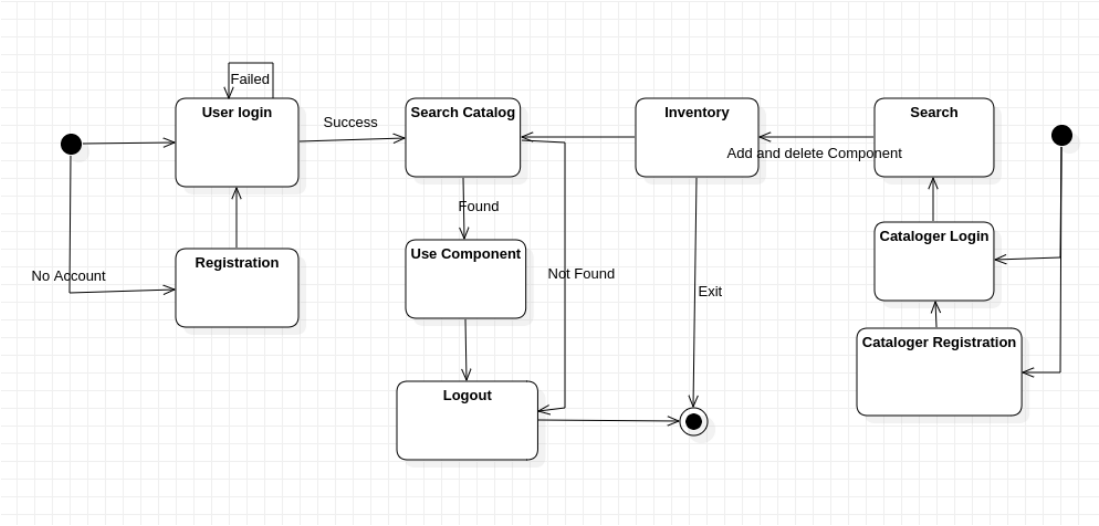

Figure 2: State Diagram of software component cataloguing software

6 External Interface Requirements

6.1 User Interface

This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.

6.2 Hardware Interface

Minimum requirements:

- Client side:
  Processor-Intel Pentium IV
  RAM-256MB
  Disk Space-1GB
- Server Side:
  Processor-Intel Pentium IV
  RAM-1GB
  Disk Space-10GB

6.3 Software Interface

- Front End Client: web browser, operating system (any)
- Web Server: WASCE, Operating System (any)
- Data Base Server: DB2, Operating System (any)
- Back End: RAD (J2EE, Java, Java Bean, Servlets, HTML, XML, AJAX),DB2 or MongoDB, OS (Windows),Web Sphere(Web Server)

7 Other Non-Functional Requirements

7.1 Performance Requirements

Maintainability
Back Up The system shall provide the capability to back-up the Data Errors The system shall keep a log of all the errors.
Availability
The system shall be available all the time.

7.2 Security

As stated, security is not a concern of this project. As such, it is beyond the scope of this system to encrypt personal user data and information, prevent unauthorized login attempts, or any other concern of this nature. Additionally, the system is not responsible for incorrect information about the machine provided by the user.

References

[1] R. Mall, *Fundamentals of software engineering*. PHI Learning Pvt. Ltd., 2018.

[2] P. V. Elizondo and K.-K. Lau, "A catalogue of component connectors to support development with reuse," *Journal of Systems and Software*, vol. 83, no. 7, pp. 1165–1178, 2010.

[3] J. Radjenovic, B. Milosavljevic, and D. Surla, "Modelling and implementation of catalogue cards using freemarker," *Program*, vol. 43, no. 1, pp. 62–76, 2009.