



Software Engineering Laboratory

**Online Book Store System
System-Wide Requirements Specification**

Group name : DEVAMKE

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System-Wide Requirements Specification	Date: <23/03/2020>

Prudentia

1. System-Wide Functional Requirements

- Functional
 - Auditing
 - Keeping track of who is using the system and when. It ensures that various corporate goals are followed and realized. For example, the requirement of keeping track of who used the system in this project is due to the ability to offer campaigns during the hours when the system is used the most.
 - Authentication
 - While accessing the system, the user must use the e-mail address and hashed password registered in the database. This is a requirement of login to the system.
 - Printing
 - The system does not need any printing capabilities. Everything will be done digitally.
 - Reporting
 - Which product is sold more, which product is more liked, and the ability to report on the system is necessary to find answers to questions and add those products to stock more.
 - Scheduling
 - System actions will be programmed so that the system can sell self-campaigning products on the 1st of every month.
 - Security
 - Access to some data in the system and database will be blocked and must be secure. For the protection of personal information or protection of credit card information received when an order is paid.

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2. System Qualities

2.1 Usability

- Ease of learning
 - It is a system that can easily learn and use from child to old and without any high level of knowledge.
- Task efficiency
 - Certain scenarios in the system will take place with a maximum of 3 mouse clicks.
- Ease of remembering
 - Since the system has a simple design and any task can be performed with a maximum of 3 mouse clicks, it will make the users easily remember the use of the system.
- Understandability
 - When an error or a problem happens, the system will show an error log and will give to user a description of error.
- Subjective satisfaction (Öznel memnuniyet)
 - In order to measure the subjective satisfaction of the user, it is important for users to rate products after they make payment.

2.2 Reliability

- Accuracy: There is not any requirement for the precision.
- Availability: Unless there is a severe failure or maintenance system will be available always.
- Recoverability: Mean time to recovery is 24 hours.
- Frequency and severity of failures: Expecting 5 defect per thousand lines of code. Severity of failures categorized in terms of Minor, Significant and Critical. Minor means the failure won't shutdown system, minor error might happen like the button clicked didn't start at first try. Significant failures are that can shut down a part of the system. Critical failures are like loss of data.

2.3 Performance

- Response Time: The maximum response time between the user and system shouldn't be more than 2 seconds.
- Throughput: Every users transaction should be completed in response time and database should support concurrent transactions.
- Capacity: At start system should allow 100 simultaneous users.
- System Startup: The system must be opened in 3 seconds.
- Shutdown: The system must be closed without keeping user in wait.

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2.4 Supportability

- Adaptability: System can easily adapt new environments and can be upgraded.
- Compatibility: There is not any requirements regarding system's compatibility with previous versions of the system or legacy systems.
- Configurability: The product will be configured at maintenance times after it has been deployed.
- Installation: For installation only internet connection and an email address required.
- Level of support: Customers can take support via email.
- Maintainability: General system maintenance should be done overnight. The maintenance releases will be offered to end-users once a year.
- Scalability: The system will increase its database capacity and network when the volume goes up.
- Testability: There is not any special requirements regarding the testability of the system.

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3. System Interfaces

3.1 User Interfaces

3.1.1 Look & Feel

- The system will use a ready to use template which has HTML5 and CSS properties.
- The system will have optimist colors which are (blue, white and etc.) and red.

3.1.2 Layout and Navigation Requirements

- The system will be responsive therefore any device with different screen ratios will be able to see the website in a standard and optimized view.

3.1.3 Consistency

- The website will be written with ReactJS and AntDesign with in a HTML template therefore will manage the view of site with CSS and HTML properties

3.1.4 User Personalization & Customization Requirements

- There will be only one type of view on the site users could not be able to customize the view.

3.2 Interfaces to External Systems or Devices

3.2.1 Software Interfaces

- The web services and Front-end part will be communicate each other with HTTP requests.

3.2.2 Hardware Interfaces

- There will be two server in this project, one of for Front-end part and one of for Back-end part.

3.2.3 Communications Interfaces

- There will be no communication with any local area network.

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4. Business Rules

4.1 Manipulation on Prices

4.1.1 Campaign

It will be first day of the each month

Conditions: To be member of the side , spending at least 100 ₦ and rate all purchased products . If a member purchased a week ago but still does not rate a product system warns the member to rate the product in bucket and the moment that member tries to add product to bucket. Member can't take advantage of the discount

Arrangement: Discount cant be more than %10 of the products price

4.1.2 Discount In Bucket

Condition: To be member of the side

Arrangement: Applied at least three products and discount cant be more than %5 of the average of the product prices. For 10 or more products, the discount limit increases to %7. Discount changes relatively to loyalty of the member. Increases total spent money and purchased product amount

Formulation : X -> Spent money ; Y -> Purchased product amount

0-2 : 0 , 3-9 : $\lfloor \text{floor}(X/Y\%5) \rfloor$, 10- : $\lfloor \text{floor}(X/Y\%7) \rfloor$

4.1.3 Return Welcome

Condition: User does not buy anything for more than 1 month

Arrangement: We can give special discounts to users which are not buying more than one month. This way we can attract old customers to keep using our services.

4.1.4 Refund

Condition: Defective or unwanted product must reach the seller or product must carry with negotiated cargo for refund. Purchased time must be at most 15 days ago before reporting to the seller. Refund requests must be reported and confirmed.

Arrangement: Free shipping prices cuts at price

4.2 Social

4.2.1 Comment And Rate

Condition : Members that spent 50 ₦ or more can make comment about purchased products, all members can give rate to purchased products.

Arrangement: Member takes notes relative to number of the characters in comment and ratings. Members who have negative notes can't make comments additionally. Note increases linearly by year.

Formulation : $(\# \text{ characters in comment} / \text{product price})\%5 + 10 * (\text{YEAR}\%100)$

4.2.2 Customer Validation

Condition: To be a member with validated email and phone number.

Arrangement: System sends a validation code via email. System sends a validation message to the phone. If validation codes are true, members assume a valid member.

4.2.3 Bad Member

Condition: To have negative member note

Arrangement: System holds orders for a day before sending a request to the seller. Check every order with validation code via email or phone.

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5. System Constraints

5.1 Validation System

Each validation code must be different. Email and phone message validation codes have the same format. Total 8 characters with at least one digit and character.

5.2 Password

System keeps passwords hashed (MD5) and unreachable.

5.3 Profile Visualization

Only admin can see members profile and nonmember's behaviors

5.4 User Interfaces

UI should be usable from 9 years old kids to 60 years old sir/lady. UI should test at least 2 humans with 9 and 60 years old.

5.5 Error Percentage

At most %5

5.6 Programming

MCV , JAVA , JAVASCRIPT ; there is no restriction about classes and libraries. Of course they will be determined by the relevant manager.

5.7 Performance

With single core 1GHz processor all actions should be at most 5 seconds.(listing, searched included)
Of course external modules , like payment modules are not included.

5.8 Access

Users can reach the desired part of the system at most 4 clicks.

5.9 Overload Situation

Hold under 3 pieces for a day before send. Quick send more than 10 pieces (use local carriers). Make new agreements (if necessary and pay price differences).

5.10 Shipping

Every order must be sent in 7 workdays. If time limitation exceeds cancel order and refund. Also send an apology message with a shipping discount coupon .

5.11 Purchase

If an order more than 15 pieces and exceeds 500 ₺ then system automatically divides order into 3. If order exceeds 45 pieces of the product system wants validation code.

5.12 Platform

Cross Platform backend , SQL database, Javascript HTML web browser recommended : Chrome , Firefox , Opera

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6. System Compliance

6.1 Licensing Requirements

In our project we will be using licenced programming languages, applications and open source software applications. We follow every contracts that open source applications wants us to accept. We are using student licenced Eclipse platform and Java programming language as a programming language and Javascript and HTML. We have used MySql as our database. We have used Visual Paradigma to draw our UML diagrams and for GUI use and test cases.

6.2 Legal, Copyright, and Other Notices

In our project, everything we do in background is our own work, for any copyright issues if we use any template or any part we pay for it or we do it from scratch for any problems might raise from legal or copyright problems. For our logos we are planning to do ourselves or buy it.

6.3 Applicable Standards

If our software expects to interface with standards such as HTML, TCP/IP, SMTP, POP and FTP we must understand these standards. We prefer using standards for software development because of the efficiencies it provides for code development and wider user acceptance and use of the resulting application.

7. System Documentation

Anyone with internet connection can access our website by searching our name on search engines or entering our URL. We tried to make our website user friendly as possible. You can visit our website without creating your account but if you want to buy product, if you want to access our features you must create an account for our website.

In our website, we show our books in our main page, we have a search engine for our users to find their wanted book. We also have categories if our users want explore new books. We use bucked system which users add the wanted book to their buckets they can add/remove from their buckets. If they want to purchase the products in their buckets they enter payment method and shipment way. After approving this, their products will be sent to them.

We also have campaigns and discounts for our users. Our users can change their settings in account settings. We are also keeping statistics about our products so we are designing our campaigns and discounts that benefits you most.

Also our users can contact us if they see some errors, bugs, unwanted scenarios or any issues with payment or shipment.