Software Requirements Specification

for

<Online Renting Valuable Stuff>

Version 1.2 approved

Prepared by

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Revision History

Name	Date	Reason For Changes	Version
MD. RAKIB HOSSAIN MORUL	01-12-2022	Initial version draft sent out for comments	Ver 1.0
MOHAMMAD RAIHAN KABIR MUNIM	03-12-2022	Review of product functions, perspective in Software Requirements Specification	Ver 1.1
IMTIAZ RAHMAN ALIF	05-12-2022	Update of operating environment and user-friendly UI design in Software Requirements Specification	Ver 1.2

1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the Online renting System. It will explain the purpose and features of the system, the interfaces of the system, what the system will do. This document is intended for both the owner's and renter’s viewpoint. Our system will get profit from the renter's money for the items. On the other hand, if we consider our software from the middleman's perspective, we can gain money from both the renter and the owner by collecting a commission for utilizing the system.

1.2 Document Conventions

The IEEE template for System Requirement Specification Documents was the foundation for this document's creation.
Here entire document should be justified and line spacing is 1.15.

- Main Title:
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  - ❖ Font Style: Bold.
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1.3 Intended Audience and Reading Suggestions

This project, which is used for renting different type of products, is a prototype for Online Renting Valuable Stuff. This system is useful for product owners and renters. Here, project managers, programmer, testers and document writers are the main developers of this application that we have made.

1.4 Product Scope

This software system will be online renting valuable staff system. This system will be designed to rent item that peoples need for a short time. Our program may act as both an owner and a middleman. As a result, items will be available for rent in our system, and anyone interested can make a request. Then the renter can choose how many days they need the product and how much they wish to pay. If the owner of the product is happy with the terms, he can rent it out.
More specifically, this system is designed to reduce the extra cost for people who need products for a single day or a few days to use. They might not need any product for a long time, they can rent from here. Some people may need some product like a bike or some big luggage to go on a trip. But they might not afford a bike or not willing to buy a big luggage. They can also rent from here. In our system, we focus on tiny items or anything else that may be rented. Products will be delivered by delivery services.

The system also contains a product owner details and their services like, where product is located for renters need, system also has online payment system for renters. Renters will be able to see available products by renters selected location, provide other valuable information and relational database containing a list of product owner, renters, reviewers, and articles.

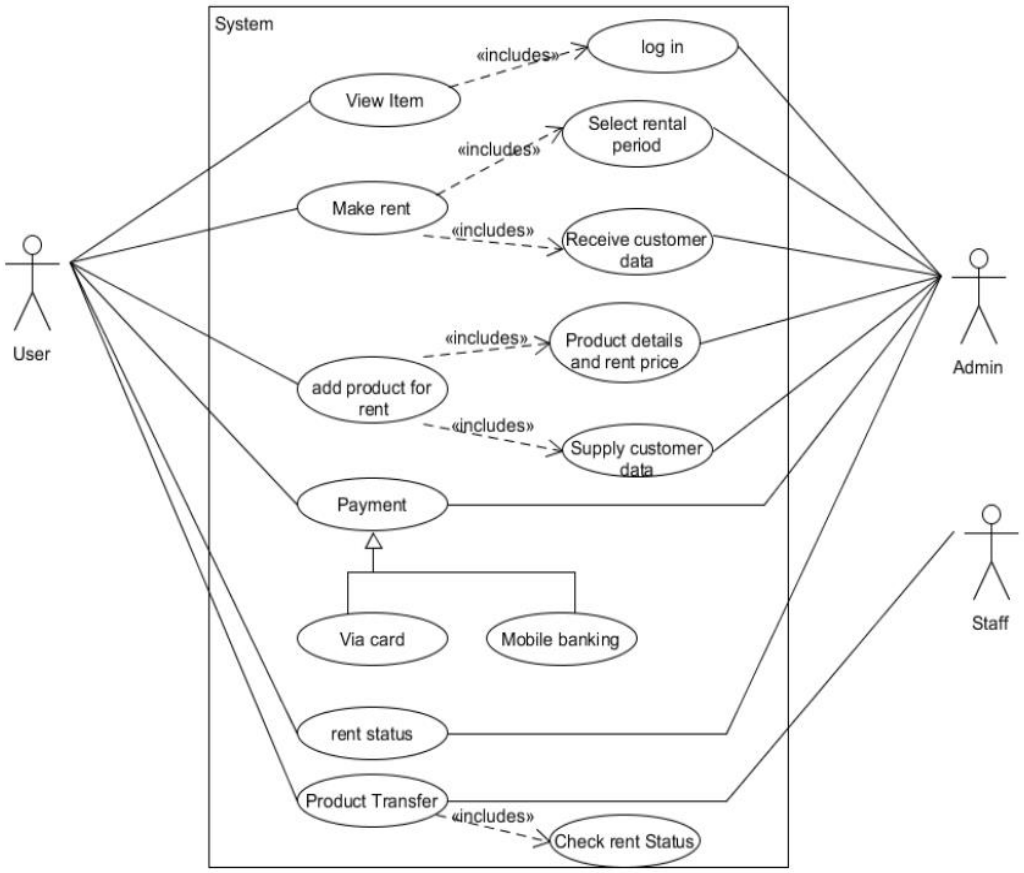
1.5 References

- "ANSI/IEEE Std 730-1981", IEEE Standard for Software Quality Assurance Plans.
- "ANSI/IEEE Std 729-1983", IEEE Standard Glossary of Software Engineering Terminology.
- C. RAMAMOORHY and H. H. SO, "Software Requirements arid Specifications: Status and Perspectives"

2. Overall Description

2.1 Product Perspective

A distributed Online Renting system the following information-

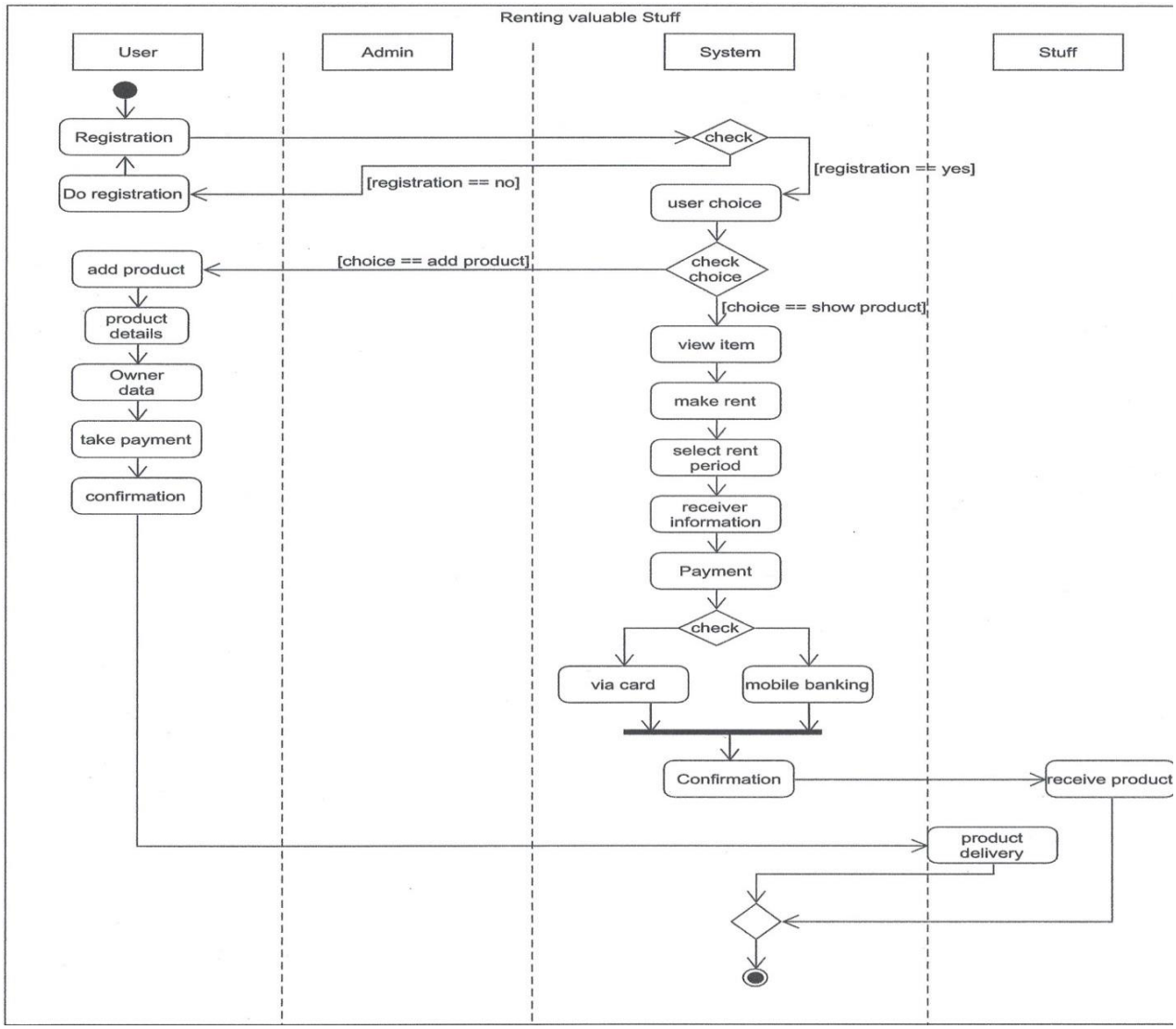


Use Case Diagram

2.2 Product Functions

A distributed Online Renting system the following information-

- **Admin Details:** Admin will select rental details, receive customer data, collect product details and rent price details and supply customer data.
- **Product Owner Details:** Product owner will have a profile in our software. Product owners will be able to upload pictures of their product in our software, with other product details like the product's specification, cost per day, how many days the product can be rented.
- **Renter Details:** Renter will have a profile in our software. Profile will be verified by their NID card. Renter will see available products on the homepage, can select products from there, will see search product option to find products easily. Renter can also pay online.
- **System:** Two types of users NID card will be verified by system. Online payment system will be done through our system. Delivery service type will be confirmed by system.



Activity Diagram

2.3 User Classes and Characteristics

A user document should be provided at the end of the development. The system has 4 roles: Product owner, Renter, Admin, Delivery Staff.

- **Product owner**: Product owner have to create profile in the system, can add products details, take a payment and confirmation details of the product.
- **Renter**: renter can see owner profile, can chose the specific products, can see the availability of products on the home page, and take rent as their chosen product.
- **Admin**: Admin will be able to collect customer data, product details and rent price and will be able to collect or supply details.
- **Delivery Stuff**: After getting product receive confirmation, the product will be delivered.

2.4 Operating Environment

Operating environment for the online renting valuable stuff system is as listed below:

The software will be primarily developed and tested on Microsoft Windows based Operating Systems. But our goal is to make it a platform independent solution.

2.5 Design and Implementation Constraints

- Maintaining information accessibility of all users and products security.
- Dashboard design limitations like making unlimited features.
- Maintaining the online payment security via encryption.
- Maintaining SQL or other centralized server and database operation.
- Server failure that can occur anytime.
- Security concerns for the software running platform.
- Maintaining the 100% uptime of internet availability to connect software database.
- Maintaining government rules and regulations while making features.
- Maintenance of the delivered software for future change or security issues.

2.6 User Documentation

After implementation, every system has to be evaluated on a regular basis. The user documentation review determines how well the system continues to satisfy performance specifications, in contrary to system testing which identifies where the system screws up. It also offers data to evaluate whether a significant change is required or not. The evaluation of a system describes how well it

is working to achieves stated goals and if real project expenses are higher than anticipated. These includes to the user documentation review. The review team compiles and examines the requests for assessment once the initial study gets underway. Some notices are also needed after the system has been approved. One of the main reasons for system review is unexpected system modifications that have an impact on user experience or system performance.

2.7 Assumptions and Dependencies

Most websites and applications around the world have space to display third-party advertisements for various purpose. So, it is assumed that only this version of the service will have limited features and we will keep some free such space in our system. For future developments in mobile and desktop apps, we may include in-app spaces for advertising. After that, the overall experience of the system might be changed a little. To use the system, users should have a stable internet connection and for advertisements, pages may take longer to load than usual which may reduce the performance of the system slightly. In the future, there will be some dependencies between app versions regarding access on various device components. The app may need permission to access the internet through the device, storage, camera, contacts, location, phone and some other modules. Depending on the user's permissions, the app's overall performance and ease of use will increase or decrease.

3. External Interface Requirements

3.1 User Interfaces

User interface includes some toolbar like ‘New User’, ‘Find Username’, ‘Upload product photo’, ‘Rent Product’ and so on. This fields also have some buttons for confirmation of the fields. For example, when a renter wants to rent any product, he can select the rent option to rent that. After that a ‘Confirmation’ and ‘Payment method’ toolbar will appear. They can select from there to rent the item finally. This is how other user interfaces are available in our software.

3.2 Hardware Interfaces

Since it works in both mobile and desktop. The hardware interfaces are-

- Windows
- Linux
- iOS
- Android

3.3 Software Interfaces

Software Used	Description
Operating System	We have chosen Windows operating system for its best support and user-friendliness.
Database	To store uploaded products information, product owner’s information, pricing information and other information by MySQL database.
Visual Studio Code	To implement the project we have chosen Java, JavaScript language in Visual Studio Code for its more interactive support.

3.4 Communications Interfaces

This project supports all types of web browsers. We are using simple chat option to make communication between Owner and renter.

4. System Features

4.1 System Feature 1

Login

4.1.1Description and Priority

The online Renting System allows the user to login in their created accounts quickly and efficiently. This feature is identified as Login feature. This helps users to use their specific user id to rent or give any product on rent. It helps to verify a user to confirm about the renting product easily.

4.1.2 Stimulus/Response Sequences

- Click on the Login box.
- Type the user login credentials.
- Optionally user can click the Login button.
- Expected result should be shown on the screen to the user account.

4.1.3 Functional Requirements

Following are the services that this system will provide. These are the facilities and functions required by the customer:

REQ-1: Login box should be clickable.

REQ-2: Login box should be writable.

REQ-3: Login session should be executed successfully on the database.

REQ-4: After login, it should show the user account page successfully.

4.2 System Feature 2

Search

4.2.1 Description and Priority

The online Renting System allows the user to find specific renting items quickly and efficiently. This feature is identified as Search feature. This helps users to find their desired products easily. It reduces the overlook and confirm the product availability to the users easily.

4.2.2 Stimulus/Response Sequences

- Click on the search box.
- Type the search keyword.
- Optionally user can click the Search button.
- Expected result should be shown on the screen while the text of the textbox is changing.
- At the event of enter or search period, related product results will be shown as well.

4.2.3 Functional Requirements

Following are the services that this system will provide. These are the facilities and functions required by the customer:

REQ-1: Search box should be clickable.

REQ-2: Search box should be writable.

REQ-3: Search query should be executed successfully on the database.

REQ-4: Search result should be shown successfully on the next page.

REQ-5: Related Products should be shown that page as well.

4.3 System Feature 3

Product Upload

4.3.1 Description and Priority

The online Renting System allows the user to upload product picture and write detailed product information. This feature is identified as Product Upload. This helps users to upload their desired products easily. It helps to get the product information.

4.3.2 Stimulus/Response Sequences

- Click on the Product Upload box.
- Select the product category.
- Additionally, user can upload the product photo and write details.
- Expected result should be uploaded product with details on the next screen.

4.3.3 Functional Requirements

Following are the services that this system will provide. These are the facilities and functions required by the customer:

REQ-1: Product Upload box should be clickable.

REQ-2: Product Upload box should be writable and photo upload option is a must.

REQ-3: Uploaded photo and product details should be saved successfully on the database.

REQ-4: Uploaded photo should be shown successfully on the next page.

REQ-5: Next product upload page should be suggested after uploading and item successfully.

4.4 System Feature 4

Payment

4.4.1 Description and Priority

The online Renting System allows the user to pay online via different online banking system like Bkash, Nagad. This feature is identified as Payment feature. This helps users to confirm their rent by paying online. It reduces the time consumption of payment which takes more time in hand-to-hand payment.

4.4.2 Stimulus/Response Sequences

- Click on the Payment box.
- Select the payment agent.
- Optionally user can click the Payment button.
- Expected result should be shown on the screen that contains confirmation code input box.
- In the next page, payment state should be shown if it is successfully done or not.

4.4.3 Functional Requirements

Following are the services that this system will provide. These are the facilities and functions required by the customer:

REQ-1: Payment box should be clickable.

REQ-2: Payment box should be writable.

REQ-3: Payment history should be stored successfully on the database.

REQ-4: Payment state should be shown successfully on the next page.

REQ-5: Payment history should be shown on the next page to give payment confirmation to the user.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

This system has no performance requirement because the server request and response depend on the end user's internet connection.

5.2 Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash. There will be a recovery method that restores a crashed database's copy. It will help to reconstruct the past state by reapplying or redoing the operations from the backup log up to the time of failure.

5.3 Security Requirements

Security system needs the encryption of database storage. We will give the database maximum security so that we are not victimized by any hacking and data leakage. It will make our system completely safe.

- System will use a secured database.
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access constraints.

5.4 Software Quality Attributes

- **Availability:** The renting product should be available on the specific date and specific time as many customers can request the same product at the same time.
- **Correctness:** The renting product should reach the correct destination of the renter from the product owner's address.

- **Maintainability:** Modify the faults to correct them, improve performance or other attributes, and adapt to a changing environment.
- **Usability:** The online valuable staff software system schedules should satisfy a maximum number of consumer needs.
- **Portability:** The software will support different platforms like Windows, MacOS, Linux, and Android.
- **Reliability:** The software will be user friendly and fast enough to load any page or make any progress needed by the customer.
- **Testability:** To be testable, a requirement must be clear, measurable, and complete, without any ambiguity.

5.5 Business Rules

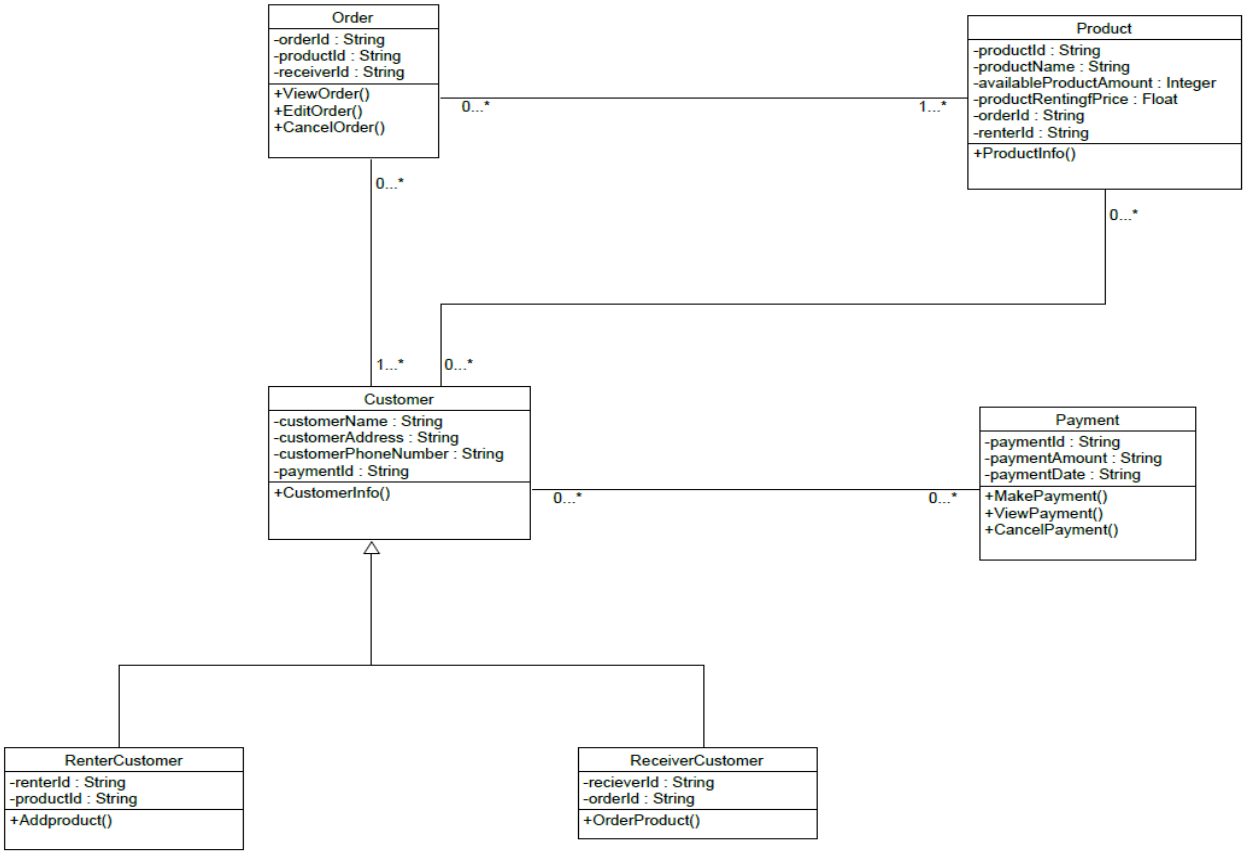
Anything that records and puts into practice corporate policies and procedures is referred to as a business rule. A rule can make a judgment, enforce company rules, or create new data from existing data. This includes the policies and guidelines that system users must follow. The price of the project and the advertising campaigns are also included. Users should refrain from using unlawful rules and procedures. Both administrators and members should follow the rules and guidelines.

6. Other Requirements

Appendix A: Glossary

- **User:** Users can view, edit, rent product or upload product pictures by creating an account.
- **SQL Server:** SQL server is used to manage the data of uploaded and rented products and user documents.
- **User Interface:** User interface helps to interact with renters and product owners easily. It also helps to make any changes.
- **Use Case:** A diagram that shows the project's basic overview.
- **Class diagram:** It is a diagram that describes the structure of the system by showing the system's cases, their attributes, and the relationships between the classes.

Appendix B: Analysis Models



Class Diagram

Appendix C: To Be Determined List

Reference

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3. Wike, L D, Shipley, R W," SRS ecology: Environmental information document", Westinghouse Savannah River Co., Aiken, SC (United States)

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