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**Software Requirements Specification**

**for**

**Furniture Rental store system (FRSS)**

**Version 1.0 approved**

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**21st March 2021**

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**1.Introduction**

**1.1 Purpose:**

This software’s primary purpose is to reduce the efforts and economic burdens involved in shifting to new cities and make it convenient for the customers to rent furniture as and when they require such that they can utilise this software to rent or return a particular item.

**1.2 Document conventions:**

There are no document conventions as such. Any person reading the document should be easily able to understand its contents.

**1.3 Intended Audience and Reading Suggestions:**

This document is intended to assist the users when they use the software and for developers and project managers to plan their project and implement the software required. This Software Requirement Specification document is divided into five subsections.

Section 1: Introduction

Section 2: Overall Description of the Software giving information about functions, user classes, operating environment, constraints and documentation.

Section 3: External Interface Requirements giving a brief introduction to user, hardware, software and communications interfaces.

Section 4: Gives functional requirements of different features.

Section 5: Provides a list of non-functional requirements.

Section 6: Other requirements

**1.4 Product Scope:**

This software accommodates two types of users- administrators and customers. A customer should be able to view the items based on his or her requirements. He or she should also be able to view the orders that were made earlier and also amount dues. The administrator should be able to view the catalogue and update the prices and information of an item. The administrator should be able to add new items and returned furniture to the catalogue as well as the inventory.

**1.5 References:**

*IEEE.IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements*

*Specification. IEEE Computer Society, 1998.*

**2. Overall Description**

**2.1 Project Perspective:**

Furniture Rental Management System is a self-contained product that enables a user to rent furniture online. This system will help the company to rent their furniture online. It also helps the user to take furniture on loan or some interest rate. It also helps an administrator to view the item count of a particular or change the rent rate by simply logging into the system.

**2.2 Product Functions:**

The following functions are provided by the software:

* Account creation
* Account login
* View item information as per requirements
* Item Renting request
* Item Return request
* View previous orders and due amount
* Update information of a particular item
* Add a new item
* View investment and profit(for admins)
* Give feedback( by customers)

**2.3 User Classes and Characteristics:**

The software has the following user classes:

* Customer: The customer can create an account by entering his or her personal information like name, age, email id, credit card no. and contact no. He can rent an item by entering the relevant information, which includes the address and mode of payment.
* Administrator: The administrator can create an account by entering his ID, name, email id, contact no. He can view and edit the status and information regarding an item and update prices—also, notifications regarding the count of any item present in the inventory that falls below some threshold.

**2.4 Operating Environment:**

Operating System: Ubuntu/Windows/ Linux/MacOS

Language: Java, Python, Javascript for web page, SQL for database

**2.5 Design and Implementation Constraints:**

* The furniture prices of a department shall remain constant unless it is modified by the administrator. The pricing of furniture after return will be changed using a dynamic pricing algorithm by the software.
* All users must login themselves in order to access the system features.
* User ID and password will be required at the time of login for the customer
* Advanced security measures have not been implemented to protect the database
* Currently, notifications regarding updated furniture cannot be sent to the user through any means of communication.

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**2.6 User Documentation:**

License and User Manual will be provided along with the software.

**2.7 Assumptions and Dependencies:**

* The user must be familiar with the internet.
* The user must be connected to the internet to use the software.
* The user must be aware of payment policies and item return rules.
* The accuracy of the personal information entered by the user shall be the responsibility of the user.

**3. External Interface requirements**

**3.1 User Interfaces:**

Furniture Rental management System incorporates an interactive graphic user interface that is easy to use. The interface mainly consists of buttons and check-boxes. The Furniture menu will show the type of furniture. The Departure date menu uses a random date to 10 days of the purchase. All errors will be displayed using dialogue boxes.

Upon running the software, the user will be presented with an interface containing three buttons

user(customer) login, administrator login.

**User(customer) login:**

• Upon choosing user login, the user will be presented with three options: login, sign up and forgot password.

• Upon choosing login, the user will be asked to enter his email id and password.

• Once the user is successfully logged in, he will be presented with an interface containing all the functions that he can perform.

**Administrator login:**

• Upon choosing an administrator login, the administrator will be presented with three options: login, sign up and forgot password.

• Upon choosing login, the administrator will be asked to enter his email id, id and password.

• Once the user is successfully logged in, he will be presented with an interface containing all the functions that he can perform like creating or deleting a user, control to the furniture data etc.,

**3.2 Hardware Interfaces:**

* This software is supported by the laptop and computer and mobile and tab.
* The system comprises users who are spread in IIT Kharagpur and connected over the intranet.
* The minimum hardware requirements for this software are a 2.2 GHz CPU and 4 gigabytes of RAM.

**3.3 Software Interfaces:**

This software requires Python to be installed on the system, more specifically Python 3.Additional software interfaces used for the development of this product include:

**BACK END:**

Furniture Rental management System will interface with a Database Management System(DBMS). There are two databases- one which stores the information regarding furniture in the shop and another which stores the personal information of the users and administrator. The DBMS should be able to respond to queries regarding furniture details. It should also show a list of furniture when the user queries about the specific department.

**FRONT END:** The Front End will be created using HTML5, CSS and JavaScript.

**MIDDLE-WARE:** The middle-tier of this system has been developed using Python.

**4. System Features**

This subsection provides details about the identified functional requirements of the software.

**4.1 Sign up, Login, and Forgot Password**

4.1.1 Description and Priority

Takes necessary information from the user to create an account and enables login using user id and password.

4.1.2 Stimulus/Response Sequences

A user has to login to access the features of the software. A new user should create an account by entering his personal details.

4.1.3 Functional Requirement

**Req-1**:Ask for user details like name, email id, phone number, city, date of birth, ID(in case of administrator and flight operator), password, and security questions.

**Req-2**:Allocate space in the server memory

**Req-3:**Ask for email id and password during login

**Req-4:** If the user forgets his password, he will be asked to answer the security questions provided by him during account creation. The successful response to the security questions will allow him to set a new password.

**4.2 Stock Availability**

4.2.1 Description and Priority

If the number of items present in the inventory falls below some threshold, then a message will be sent to the administrator for its need.

4.2.2 Stimulus/Response Sequences

Upon login, if the customer chooses some product, then that product will be sent to the cart. If the chosen product lacks availability, then there will be an error message raised as OUT OF STOCK, and a message will be sent to the administrator.

4.2.3 Functional Requirements

**Req 1:** Once the customer selects the product, ask him/her about the quantity of the product.

**Req 2:** Access the store furniture data and check the availability.

**Req 3:** Display a suitable error if there is a lack of availability.

**4.3 Payment**

4.3.1 Description and Priority

The company offers a loan on an interest basis based on whether he/she had taken any furniture in the past.

4.3.2 Stimulus/Response Sequences

After the checkout process, the software should access the customer’s records and calculate the loan amount and its interest according to his/her purchase.

4.2.3 Functional Requirements

**Req 1:** Ask the customer about the mode of payment such as CREDIT CARD/DEBIT CARD or LOAN

**Req 2:** If the customer goes for the loan will be redirected to the new page else redirected to the bank payment(credit/debit)

**Req 3:** Ask the user for the time period of the loan.

**Req 4:** According to the previous purchases, the loan with interest amount will be displayed on a monthly basis

**4.4 Cancellation and Return**

4.4.1 Description and Priority

The product will be returned to the administrator, and the webpage will be updated.

4.4.2 Stimulus/Response Sequences

The cancellation or return product will be asked, and the customer and feedback should also enter the cause will be asked by the administrator.

4.4.3 Functional Requirements

For Cancellation

**Req 1:** User should activate cancellation before shipping

**Req 2:** Check for the due amount before cancellation, and the remaining amount will be added to the bank account

**Req 3:**  The returned products will be added to the database.

For Return

**Req 1:** Users should select the products to be returned.

**Req 2:** if the product returned is damaged or destroyed, then the user should pay the full amount, and the product will not be entered into the database

**Req 3:** Check for the due amount before returning.

**Req 4:**  Decrease the product price by 10% and then add to the database.

**4.5** **Administrator’s page Login**

4.4.1 Description and Priority

The user should log in to his administrator details to log in to the administrator’s page, and he has access to create or delete any account(customer) and change any stock of the furniture. He can generate the total profit/loss in his dashboard.

4.4.2 Stimulus/Response Sequences

After the login, the page shows various options such as Create a customer, Delete a customer, Add new furniture, Change the stock of furniture, Change the furniture price.

4.4.3 Functional Requirements

**Req 1:** Details entered by theuser should be matched withthe database’s data

**Req 2:** Newly addedfurniture data, available furniture data, returned furniture data should be available for the administrator.

**Req 3:** Newly added furniture price will be set by the administrator.

**5. Other Non-Functional Requirements**

**5.1 Performance Requirements**

• The product should be based on a local server.

•The product requires access to different databases.

•The performance depends on hardware components.

•The software shall show no visible deterioration in response time as the number of users or furniture data increases.

**5.2 Safety and Security Requirements**

•Since it is a web-based application, there will definitely be chances of internet-based threats such as viruses. The software should try and minimise these threats as much as possible.

•Only the administrator has the right to manage and make changes to the database parameters such as pricing and view the return/cancellation status of the customers. The system is secure and will protect the database.

•Users need to be authenticated before having access yo any personal information.

**5.3 Software Quality Attributes**

**5.3.1 Availability:**

Furniture Rental Store System will be available 24 a day and 7 days a

week.

**5.3.2 Correctness:**

Furniture Rental Store System shall provide real-time data about furniture available in the store.l

**5.3.3 Maintainability:**

Various versions of the product should be easy to maintain. For development, it should be easy to add new code to the system, modify the existing code or incorporate new features into the software.

**5.3.4 Robustness:**

The software shall be robust enough to have a high degree of fault tolerance. For example, the system should not crash if the user enters invalid input. It should display a suitable error message.

**5.3.5 Usability:**

•Furniture Rental Store System shall provide an easy to use graphical interface which will be simple so that the user can adapt to it easily.

•The interface should be interactive and easily navigable. Users should be able to understand the menu and other features of the software.

• Any error message displayed by the software shall be polite and clear.

**5.4. Business Rules:**

•This software should be used only after a proper contract agreement with the company developing it.

•In case of any problems the user should immediately contact the Avengers team for clarifications.

**6 Other Requirements:**

• Licensing requirements: Applicable

• Legal, Copyright and Other notices: All rights reserved by our team.