SOEN 6481 Systems Requirements Specification

Delivery #1

Vision Document

GitHub link

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Vision Document
ETR (electronic tool rental)

1. Introduction

The document depicts the overall goals of the project, the project's main stakeholders, the target users, demographic features, and the high-level needs of the ETR (electronic tool rental) tool. It focuses on the functionality needed by the stakeholders, and the end-users, as well as why these needs exist. The document is structured as a standard Vision document, containing within it the user description, stakeholder needs, alternatives, and the product features.

This document is composed by a Requirement Engineer, intended to converge the understanding of the software to be, between the stakeholders and the development team.

1.1. References

IBM Corporation. "Engineering Lifecycle Management 7.0.0 Vision document".   Mar 30, 2022.
NBDiff diffing and merging IPython Notebook. "NBDiff Vision Document".   Feb 13, 2014.
University of Dallas. "RUP Vision Document for the Home Appliance Control System". Oct 05, 2004.
Pearson Education. "Bringing it all together: The Vision Document".   Dec 06, 2002.

2. Positioning

2.1. Problem Statement

The problem of	Creating an E-commerce online platform for the consumers to provide home improvement tools for rent.
Affects	Plumbing technicians, Pipe fitters, Steam fitters, Gas service technician, Business owners and general consumers.
The impact of which is	Unaffordability of expensive home improvement tools by the small-scale home renovators, interior decorators, self-funded technicians / plumbers, and the individual who needs the equipment to fix a minor issue in their houses.
A successful solution would be	Developing an E-commerce online rental platform of home improvement tools.

2.2. Product Position Statement

For	Plumbing technicians, Pipe fitters, Steam fitters, Gas service technician, Business owners and general consumers.
Who	Wants to rent the expensive home improvement tools for services, repairs, and short business needs.

The ETR (electronic tool rental)	is an E-commerce online rental platform.
That	Provides rental services of various home improvement tools like carpet cleaner rentals, woodchipper rentals, lawn rollers, saws for the wide range of vendors (plumbing technicians, Pipe fitters, Steam fitters, Gas service technician, Business owners and general consumers).
Unlike	Possessing and maintaining the expensive equipment for short needs by investing huge capital.
Our product	Provides rental services of tools with wide range of rental plans by eliminating the huge capital investment and maintenance efforts. Provides rental services of home improvement tools across the country which benefits the technicians/small scale business owners by eradicating the need of transporting the tools to different locations where they do repairs/services.

3. Stakeholder Descriptions

3.1. Stakeholder Summary

Below are the key stake holders of the ETR system,

Name	Description	Responsibilities
Consumers/ Customers	End users who rent the tools from ETR (electronic tool rental)	Utilizes the ETR tool to rent the home improvement tools and return the tools as per rental duration/plan.
Business Partners	Investors, Shareholders, Creditors, and the organization itself, who involved in the economic activities and development of the E-commerce online platform.	Managing employees, implementing marketing strategies, tracking financial objectives, Executing other strategic management activities.
Employees	Representatives, who support the Rental platform system and serve directly to consumers such as, System administrators and the branch employees.	Responsible to add new branches to the system, creating branch employees in the ETR system, responsible for adding/removing tools for rental in their respective locations, to hand out the tools to the customers in store, ensuring the returns of rental equipment, update the system with the status of the tool (available, rented, out of order, not available), supervise the rental warehouse, administration of property rentals, collecting rent, and complying with rental laws.

Suppliers	Organization who provides/sell home improvement tools in bulk to the rental warehouses to support ETR.	Sell/supply quality tools to the ETR warehouses ensuring long lasting life of the equipment.
Technology Support Team	IT vendors or Development team who improve and support the ETR and bridging the technology needs to run ETR seamlessly.	Responsible to provide technology support, system upgrade and various IT enhancements in the ETL system.

3.2. User Summary

Name	Description	Responsibilities	Stakeholder
Consumers/ Customers	End users who rent the tools from ETR (electronic tool rental)	Utilizes the ETR tool to rent the home improvement tools and return the tools as per rental duration/plan.	End users/ Consumers
System administrators	Who support and maintain the Rental platform system.	Responsible to add new branches to the system, creating branch employees in the ETR system.	Employee
Branch employees	Representatives, who support the Rental platform system and serve directly to consumers.	Responsible for adding/removing tools for rental in their respective locations, to hand out the tools to the customers in store, ensuring the returns of rental equipment, update the system with the status of the tool (available, rented, out of order, not available)	Employee

3.3. User Environment

➢ *Consumers/End users* are expected to have a digital device like, Smart phone, Laptop or Tablet to access ETR application provided with the stable Internet connection.

➢ *System administrators* should possess the access to the system available in the warehouses with the valid credentials to access the ETR system.

➢ *Branch employees* should have a pre-requisite of account creation validated by System admins. with the approved credentials, branch employees can access the ETR system in the warehouse machines/workstations.

3.4. Key Stakeholder or User Needs

Target	Need	Priority	Concerns	Current Solution	Proposed Solutions
End users	Feature-Rich and intuitive	High	Non complicated and hassle-free road map in the application to rent an equipment.	None (No rental online platform available in the market yet)	Simple navigation menu options and sample demo rental booking guide for the first-time users of the ETR.
End users	Seamless Payment options	High	Non fraudulent payment options.	None (No rental online platform available in the market yet)	Embedding industry standard and government approved payment gateways to the ETR system.
System Admin	Consistency	High	Unique data maintained across the system integrated with several branches.	None	Centralised data maintenance of the system partnering with the high-quality cloud-based database solution providers.
Branch Employees	Reliability	High	Reliable inventory management and accuracy of rental activities.	None	Accurate information on the availability of equipment and rental details can be made available by implementing memory efficient and latest technology stack.
Branch Employees	Robustness	High	ETR must be available consistently and perform well irrespective of traffic in the network.	None	Deploying the ETR with the support of load balancing techniques aided by the cloud providers.

4. Product Overview

4.1. Product Perspective

The architecture diagram of the ETR is mentioned below, it depicts the users, interactions, workflows, and the details about the external systems connected to ETR to provide seamless experience for all the users of ETR system.
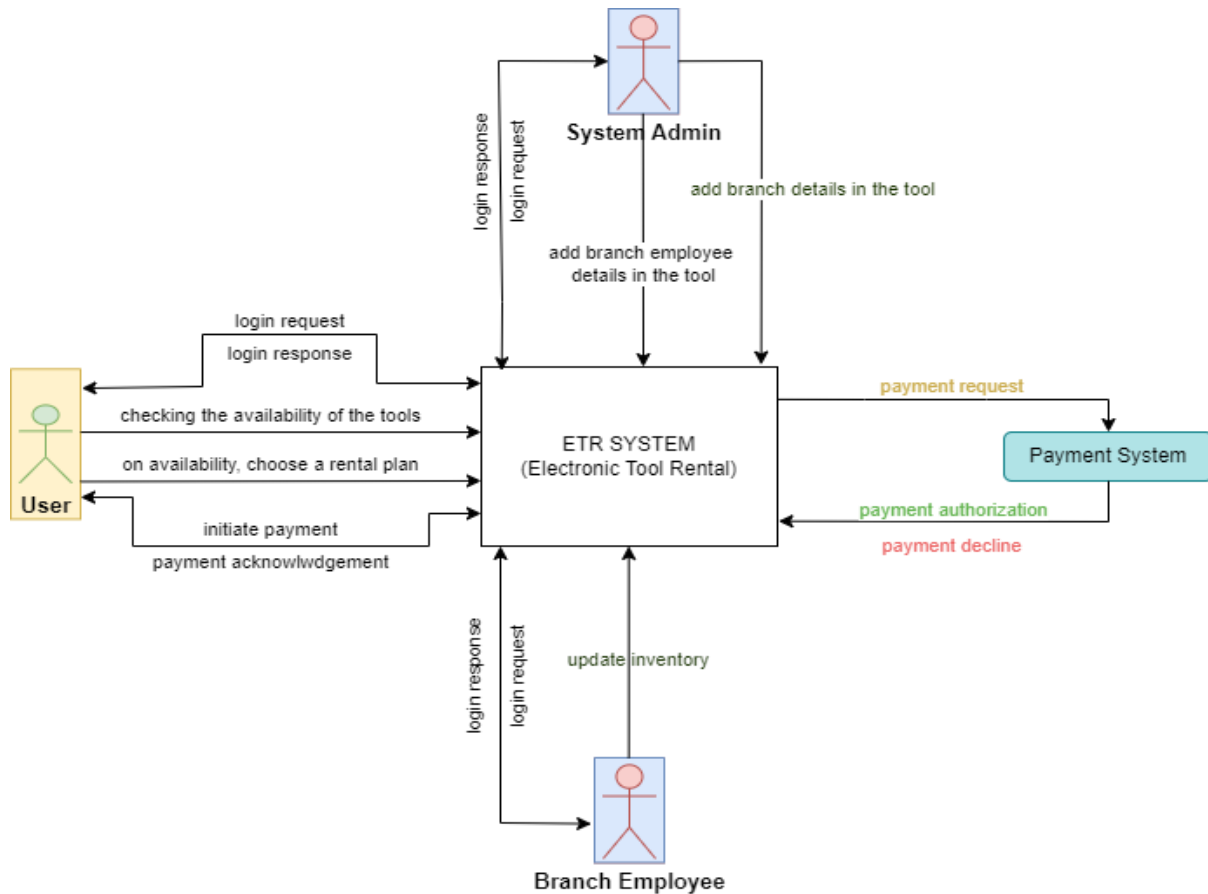
Figure 1 : ETR Architecture Diagram

4.2. Assumptions and Dependencies

Assumptions	Dependencies
Stable internet connection to access the ETR system available in the web.	Network Provider
Scalability of the ETR web application over all the supported browsers	Scalability/Compatibility of the ETR Application.
Users (Consumers, System Administrators and Branch employees) have login details to access the system	Usability
Once Branch employee updates the inventory, the updated inventory details are reflected the same to the end users of the respective location in the ETR system.	System consistency (Technology Support Team must ensure these constraints during development with the procedural smoke testing).
Once System admin creates a Branch employee account in the ETR system in a respective location, no other system admins are allowed to create the same branch employee account in the system.	System consistency (Technology Support Team must ensure these constraints during development with the procedural smoke testing).

Consumers can reserve only one equipment per reservation.	System consistency (Technology Support Team must ensure these constraints during development with the procedural smoke testing).

5. Product Features

Feature_Id	Feature	Description
ETR_01	Account Creation / Login Functionalities	End users, system admins and branch employees should create an account and maintain their login credentials to access the system.
ETR_02	Checking the availability of tools respective to location	Consumers can check the availability of home improvement tools based on their demands.
ETR_03	Renting the tools	Consumers are provided with minimum rental period of 4 hours, and can be rented for longer-term such as daily, weekly, monthly based on the availability and can request a reservation for as early as the next day and up to 30 days in advance.
ETR_04	Multiple Payment gateway support	Consumers are facilitated with the support of multiple payment systems like credit card, debit card, apple pay, and Samsung pay.
ETR_05	Adding branches to the system based on location	System admins can add / create branches of ETR stores in the locations which has considerable demand of home improvement tools for rent.
ETR_06	Adding branch employees to the system	System admins can add branch employees by creating accounts and adding their details in the system, where they will be tagged to a particular store/location.
ETR_07	Updating the inventory in the ETR tool	Branch employees can add/ update the inventory details of a particular location based on the availability of the tools.
ETR_08	Updating the rental information in the tool	Brach employees can add the rental details which comprises information like consumer's name, address, rental period and rented equipment.
ETR_09	Notifying the rental time notice to the customer	System is capable of notifying the consumers when they reach closer to return date of the rented equipment. Therefore, that can return the equipment on time to avoid late return charges.
ETR_10	Payment dispute support	System can handle payment exceptions and manage refunds to the respective account in case of payment disputes.

6. Other Product Requirements

Feature	Description
Performance	The system must be capable of handling multiple users irrespective of location without any latency of data retrieval.
Usability	The system should be easy to use with the non-complicated hassle-free road map in the application to rent an equipment.
Security	The system maintains integrity of the various identity of the users and the payment information
Fault Tolerance	The system must function properly and should continue to run despite failures or malfunctions of hardware/software.
Robustness	The system must be available consistently and perform well irrespective of traffic in the network.

7. Logging / Gantt report

Date	Activity	Hours Spent
May 14, 2022	Introduction	30 mins
May 15, 2022	Positioning	1 hour
May 16, 2022	Stakeholder Descriptions	2 hours
May 17, 2022	Product Overview	1 hour
May 18, 2022	Product Features	2 hour 30 mins
May 18, 2022	Other Product Requirements	30 mins
May 19, 2022	Logging / Gantt report	15 mins
May 19, 2022	Acronyms	5 mins

8. Acronyms

ETR	Electronic tool rental