Contents

Vision Document
[Electronic Tool Rental]

1.   Introduction

Purpose

The purpose of this document is to gather requirements, analyze and define high-level needs and features of Electronic tool rental. It focuses on the capabilities needed by stakeholders, and the target users, and why these needs exist. The details of how the Electronic tool rental meets these requirements are detailed in the use cases and supplementary specifications.

Scope

This Vision Document applies to Electronic Tool Rental, which will be developed by ▨▨▨▨▨ The system will allow customers to rent tools e.g. carpet cleaner rentals, lawn rollers or any other tools at affordable rental prices.

1.1.   References

Following is the list of references:

[1] *Rental FAQ*. Truck and Vehicle Rental Rates | The Home Depot Canada. (n.d.). Retrieved May 20, 2022, from https://www.homedepot.ca/en/home/tool-and-vehicle-rental/truck-and-van-rental-faq.html

[2] *Context diagram*. IST Project Management Office. (2017, January 10). Retrieved May 20, 2022, from https://uwaterloo.ca/ist-project-management-office/tools-and-templates/tools/context-diagram

2.   Positioning

2.1.   Problem Statement

The problem of	non-availability of tools at store, cost of commuting from one store to another in search of tool, and over budget of rental price
Affects	individuals who want to rent tools to complete their project by deadline.
The impact of which is	Renting tools physically are non-flexible for both customers and branch employees. Since customers have to look at different stores for the availability of tools, branch employees have to store customer's details on paper. This solution comes with the cost of money as well as time.
A successful solution would be	Online rental tools website which acts as a one stop shop and helps in choosing cost effective rental tools, and provide options to reserve multiple tools in advance.

2.2.   Product Position Statement

For	Individuals who want to rent tools for their project at an affordable price.
Who	Rent a single or multiple tools in advance or at an instant for their project and to check availability of tools at different store location
The [Electronic Tool Rental]	Is a software product
That	Helps customers to reserve beforehand without visiting the store location in person and helps them in avoiding commuting at different stores in search of availability of tools and also helps branch employees to avoid paperwork for checking the information about customers.
Unlike	Currently, in the physical system customers have to visit different stores residing in different locations nationwide in order to check the tool and if the tool is not available at a particular location they have to commute to different places. Furthermore, branch employees have to manage paperwork in order to store the information of customers.
Our product	Help customers to reserve tools effectively anytime and anywhere they want and reduce administrational work of branch employees.

3.   Stakeholder Descriptions

3.1.   Stakeholder Summary

Stakeholder is a group or individual affected by the system-to-be, who may influence the way the system is shaped and has some responsibility in its acceptance. Below table, list the key stakeholder for electronic tool rental, their descriptions, and responsibilities.

Name	Description	Responsibilities
Customer	Individuals who want to rent tools and equipment to complete their project.	Renting tools and equipment, check availability of tools, pricing and if it is adequate to make a reservation.
System administrator	Individuals who handle the administration of the system by adding new branches to the system, creating users in the system for new branch employees.	Add new branches to the system, create users for the branch employees.
Branch employee	Individuals who add tools, remove tools and update the status of tools for different locations.	Add/remove tools for rental in their respective locations, hand out the tools to the customers in store, and to receive them, for which they need to access the system to update the status of the tool as available, rented, out of order, not available.
Product Owner	A person who conveys his vision for the system to be, requirements for the project to the scrum team.	Coordinate with the Business analyst to communicate the list of the new features, changes to existing features, bug fixes, infrastructure changes or other activities that a team may deliver in order to achieve a specific outcome.
Project Manager	A person who aligns the project with business goals, constructs detailed work plans, manages a team, and achieves milestones.	Planning, organizing, and directing the completion of a project while ensuring that project is on time, on budget and within scope.
Software Architect	A person who is in charge of system development and who decides the MVC architecture for the system, plans different features and integrates them into a functioning system.	Responsible for establishing a more detailed and high level MVC style architecture for the system that will best solve the problems of stakeholders and frame technical standards.
Business Analyst	A person who is responsible for requirement elicitation, documentation.	Gather and understand business requirements and layout precise and clear requirements for developers and testers.
Developers	A person who codes for the website.	Should be familiar with MVC architecture, PHP and able to understand and code the requirements. Developers should code a highly stable, scalable, understandable PHP based website.
Database Admins	A person who stores, organizes and manages data for the website.	Should be familiar with MySQL relational database management system. Responsible for database security, stability, and integrity.
Testers and Quality Assurance engineers	A person who ensures the quality of the developed solution by testing it.	Should be familiar with JIRA in order to handle bugs reported by the team on JIRA, create test suites and test cases to ensure the quality of the website.

3.2. User Summary

Below table summarizes the users who will mainly interact with electronic tool rental.

Name	Description	Responsibilities	Stakeholder
Customer	Primary end user of the system who rents tools and equipment for the project.	Rent tool and equipment, check tool availability and pricing and if it is adequate to make a reservation.	Self-represented
System administrator	Primary end user of the system who handles the overall administration of the system.	Add new branches to the system, and create users for the branch employees.	Self-represented
Branch Employee	Primary end user of the system who keeps the information of tools on the system up to date as per the availability.	Add/remove tools for rental in their respective locations, hand out the tools to the customers in store, and to receive them, for which they need to access the system to update the status of the tool (available, rented, out of order, not available).	Self-represented

3.3. User Environment

- **Agile Team Structure:**
1. To develop an electronic tool rental website, there will be one software architect who will be in charge of system development and will lead the development team of 4 developers.
2. The functionality of the system after development will be tested by four testers out of which one person will act as Test Lead.
3. There will be one scrum master who will facilitate the development team on the day to day development activities and one business analyst.
4. When the project goes live, one developer and one tester will be moved to the Software maintenance team and they will deal with production level issues, and bugs.
- **System Platforms:**
  -**PhpStorm:** IDE for software development in PHP.
  -**MySQL:** relational database management system to store data.
  -**GitHub:** code hosting platform for version control and collaboration.
  -**Overleaf:** to create documentation related to the project.
  -**JIRA:** work management tool for agile software development.
- Project will be managed using agile methodology by breaking it into several phases. The project will be divided into three iterations. After each iteration the project team meets to identify the scope of the next iteration.
- To develop the project, MVC pattern will be used to isolate business logic from the user interface.
- Initial release of the project will work on Google Chrome and Microsoft edge. For future platforms, websites will be made available on all the common browsers used by common people.
- All the users (customers, system administrators, and branch employees) are expected to have a browser on their devices to use the website.

3.4. Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
Add new tools in the catalog with the rental location	High	Customers did not know where they would get the particular tool so they had to commute from one store to another.	None	Type of tools can vary by store. Customers can browse the availability of tools on the website and select a store that is convenient for pick-up.
Add/update rental price of	High	Customers were unaware of the rental price that varies by location so earlier they were ending up paying higher for	None	Branch employees are responsible for adding/updating a plethora of information

tool and rental period		the tool which they can get at discounted price from another store.		regarding rental price and rental duration on the website.
Update the status of tools.	High	Customer was unaware of the availability of tools at any location. So now, with the status of the tool as available, rented, out of order, and not available it is easy for them to figure out where to look for the tool.	Using paper trails	With rental locations available in most of the stores nationwide, the website makes it easy to find just what customers need and where that tool is available.
Single/multiple reservation request	Medium	Customers might need to rent multiple tools at a time.	None	Only one tool can be reserved with a reservation request. A separate reservation is required if a customer needs more than one tool.
Reserve a tool ahead of time	Medium	Sometimes the customer has to complete an important project by a certain deadline and the tool they need goes out of stock.		Customers can request a reservation through the website, for as early as the next day and up to 30 days in advance.
Validate and verify customer details and payment details	High	Customers must be at least 18 years old, have a valid government photo ID, and valid credit card. Branch employee has to maintain the paperwork to store the customer's information.	None	Before making a reservation request, customers have to fill in the form with their correct private and payment information and upload proof of government issued photo ID which is valid at the time of rental. This information is now stored in a database.
Generate sales report	High	Manager has to monitor the sales, and plan effective strategies. For that, they had to create a report by hand which is quite a tedious task.	Using paper trials	System administrator has access to generate the sales report. With the online feature they just had to click on the generate sales report button and the report is ready for them to monitor.

4.   Product Overview

4.1.   Product Perspective

Below is the block diagram for Electronic tool rental. The following diagram depicts three main users and how those users will interact with the system and how the data is being exchanged between them.
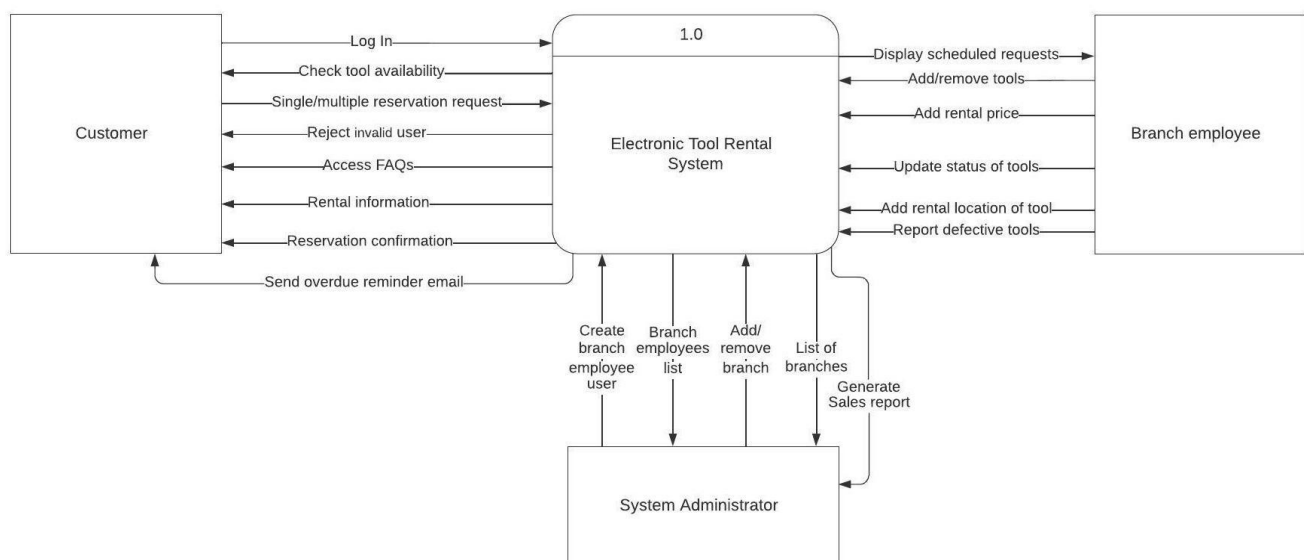

Figure 1: Context Diagram for Electronic Tool Rental System

4.2. Assumptions and Dependencies

Assumptions	Dependencies
Assign security consultants to protect the data of end users.	**Security:** Customer data is private and important. Leaking customer's data will lead to loss of customers and hence affect the business.
There should be enough developers or testers to complete the project on time decided in scrum meetings.	**On-time delivery:** In case the developer or tester gets sick or takes vacation leaves, backup developers and testers should be there.
For maintenance, server downtime should be planned beforehand and email should be sent to users informing the same.	**Accessibility:** Users might be performing an important activity and there are chances that it may get interrupted in between.
Software developers should have knowledge of PHP, MySQL, and MVC architecture.	**Access to knowledge:** If not, they should be provided free access to online learning platforms such as Pluralsight, Udemy etc. It will add extra time to the project and the deadline needs to be revisited.

5. Product Features

Electronic tool rental shall provide the following high-level features that directly fulfill the stakeholder needs and expectations.

Common Features:
- **Multi-lingual support**: System should be available in two main languages used in Quebec: French and English
- **Technical Documentation guide:** A guide for all the users namely customers, branch employees, and system administrator, should be available on how to use and navigate through the system.
- **Sign-up** : All the end-users should be able to create an account with their email.
- **Login Page**: After successful sign up, users should be able to login with their username or email and password.

For customer:
- **Customer Details:** While making a reservation system should pop-up and display the important details to the customer that they should be at least 18 years old and should have valid government issued photo ID that is valid at the time of rental. Also, they should have a valid credit card for deposit at the time of pick-up.
- **Schedule Pickup**: With the feature of scheduling a pickup, customers can schedule a pickup from a store that is convenient for them and at a particular time for pickup on their own (between the store opening hours).
- **Selection of Rental period:** System should have a calendar feature to allow customers to select a minimum rental period which is 4 hours and to rent for a longer-term period they should be allowed to select rentals such as daily, weekly, monthly.
- **Notification via email:** To confirm the availability of tools, customers should receive an email prior to their reservation.
- **Multiple reservation request:** System should allow only one tool to be reserved with a reservation request. A separate reservation is required if a customer needs more than one tool.
- **Reservation ahead of time:** Customers should be able request a reservation through the website for as early as the next day and up to 30 days in advance.
- **Extend the duration of rental:** Customers can call the store to extend the rental period for the tool. For that system should allow branch employees to update the availability of tools on the system with the new rental period extension.
- **Rental location guide:** System should allow customer to check store location on google maps, its helpline number, and the opening hours.
- **Subscribe email:** System should allow customers to sign up for email so that they can receive exclusive offers and stay up-to-date on new products and services.
- **Reminder email:** System should send reminder overdue email to the customer in case they forget to return the tool.
- **Browse catalog**: System should allow customer to browse full line of equipment where models are featured with specification to help customer plan for their next project.
- **Equipment catalog:** System should allow customers to download the digital-friendly product catalog.

For system administrator:
- **Employee and Branch Management:** The system should provide the option for the system administrator to add new branches and create or delete users for the branch employees as they get hired or leave the branch.

- **Role Management:** The system administrator should have the control to change the permission of a particular branch employee to make edits to the content on the website and update their role.
- **Sales Report:** System should allow system administrator to generate a sales report to monitor biweekly, monthly or yearly sales.

For branch amployee:

- **Add/remove tools:** The system should allow the branch employee to add or remove tools for rental in their respective location.
- **Update status of tools:** Since branch employees are responsible to hand out tools to the customer in store and to receive them. So, the system should allow branch employees to update the status of tools as available, rented, out of order or not available.
- **Update Catalog:** Branch employees should be able to update or edit the catalog with new information on rental tools and equipment.
- **Update FAQs:** Branch employees should be able to update the FAQs weekly by recording the question which they are being frequently asked by customers.
- **Update rental price, discount information:** Branch employees should be able to update the rental price as per the seasonal availability and discount information for tools and equipment as per the demand.
- **Defective tool:** Branch employees should be able to mark tools as defective on the website, so that manager can order the replacement for those tools.
- **Access to customer information and scheduled requests:** Branch employees should have access to scheduled requests and customer information in order to validate their information such as age, physical government ID and rental details. Also they have to verify the customer's credit card for a deposit.

6. Other Product Requirements

6.1 Applicable standards

The system must comply with existing web standards such as HTML, TCP/IP, etc.

6.2 Performance Requirements

- **Scalability**: With the increase of customers and their data volume, there should be reasonable and scalable ways of dealing with that growth. The system must allow multiple users to make a reservation request simultaneously without affecting performance of the system.
- **Security:** System must ensure that personal information of the customer and branch employees is secure and only the system administrator can know the personal information of branch employees and branch employees can see the customer's information.
- **Usability:** System should be easy to use by all the primary end users and have access to manual guides in order to navigate through the website easily.
- **Reliability and Availability**: System must serve the end user well without noticeable downtime and there must be a backup solution to handle the system failure.
- **Maintainability:** System should maintain the current behavior and adapt the new use cases over the time and the engineering team should be able to work on it productively.

6.3 Documentation Requirements

Customer Support: In addition to a wide assortment of tools and large equipment rentals, the system should offer knowledgeable, and resourceful representatives who are available 24/7 to provide solutions to customers in need.

7. Appendix

Date	Section	Time Spent
15/05/2022	Introduction	1 hour
15/05/2022	Positioning	2 hours
17/05/2022 - 18/05/2022	Stakeholder Descriptions	7 hours
18/05/2022	Product Overview	4 hours
18/05/2022 - 19/05/2022	Product Features	7 hours
20/05/2022	Other Product Requirements	1 hour
20/05/2022	Report Review + Cover Page	1 hour