

The Latium Marketplace website development proposal

Proposal prepared for: Lori Pecorilli, President
Latium Fleet and Asset Management

Proposal prepared by: The CMPUT 401 Team

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Preface

This document provides an overview of the proposed project scope, requirements, design and development of the Latium Marketplace website.

Confidentiality Agreement

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Overview

Latium Fleet and Asset Management is an Edmonton based company that prides itself in providing exceptional complete fleet management to customers across Canada and the United States.

The success of Latium Fleet and Asset Management lies on its team of dedicated, caring and experienced employees who work hard to achieve great results for their clients. Clients are treated like family and are provided a vast array of services at very competitive prices.

Latium Fleet and Asset Management solutions includes fleet consulting and auditing, fleet acquisition and disposal, vehicle and equipment rentals, outfitting, GPS active monitoring, technology, equipment maintenance, 24-Hour emergency assistance, fleet cards and monitoring, auto body repair, and detailing.

Latium Fleet and Asset Management realized the need to develop an online marketplace connecting assets' owners and people looking for equipment for rent or sale. Latium Fleet and Asset Management's main motivation was driven by the desire to help large equipment owners faced with the realities of a recent economic downturn find new markets for their equipment. Thereby ensuring asset owners are able to make money on their idle equipment, and potential buyers and renters are able to find items at affordable prices.

Latium Fleet and Asset Management would like to offer a marketplace that is unique and specialized in equipment assets like tractors, trailers, trucks, and more.

This marketplace will be an hybrid of *AirBnB* where members are able to list their houses for short term rental; *eBay* where members can place bids on a particular item that they interested in; *Anyquip* and *Equipmentsshare* that are dedicated to equipment rental and selling.

The CMPUT 401 Team proposes to build and develop a website that will allow Latium Fleet and Asset Management to achieve their goal. We will create a specialized website that is modern, sleek, well organized, and easy to use.

Our main focus is on providing a platform that is accessible and engaging to your audience, while conveying the professionalism and credibility of your company. At the completion of this project Latium Fleet and Asset Management will have a strong online platform which will allow them to keep establishing themselves as a leader and innovator in fleet and asset management.

Objectives

We will create a website that will:

- Be modern and professional, easy to use, and meet the needs of Latium Marketplace and its site visitors.
- Be standard compliant (W3C) and cross-browser compatible with all modern browsers.
- Be responsive (nicely displayed on multiple devices ranging from mobile devices like smart phones and tablets to large LCD television screens at various screen resolutions such as 800x600, 1024x768, etc.).
- Be optimized for search engines like Google, MSN, Yahoo!, which will allow potential visitors to find Latium Market Place using different keywords or phrases.
- Be programmed in a way to enable the staff at Latium Marketplace to add and edit content and information.
- Have information about Latium Marketplace.
- Allow a user to create and manage their own account.□
- Allow a user to manage their preferences, history, messages on their account.□
- Allow users to search through the Marketplace for items of interest.
- Allow users to send and respond to private messages and inquiries.□
- Allow a user (owner) to list their assets for rent or sale.□
- Allow a user (renter) to place bids on assets as well rent and/or buy.□
- Allow a user to decline bids.□

Assumptions

The following is a list of assumptions on which the timeline is based. If any of these assumptions are not met, incorrect, or need to be changed, the timeline may need to be changed.

- Latium will be responsible for hosting the website.
- Latium will provide the CMPUT 401 Team access to the server hosting to test the website.

- The CMPUT 401 Team is responsible for developing the Latium Marketplace website.
- Latium will provide the logo and the color scheme for the visual design of the site.
- Latium will be responsible for writing the full content of the website and providing it to the CMPUT 401 Team to add to the site as indicated in the timeline.
- Latium will provide high quality photographs to be included in the visual design of the site.
- To allow the project to be completed and delivered on time, the proposal will need to be approved as quickly as possible.

Solutions

Site-mapping

The site map is a visual representation of the architecture of your web site. The CMPUT 401 Team will use a sitemap as a planning tool for the entire website, mapping out what sections you need, what content should be included, menu structure, and navigation.

Wire-framing

This is a basic visual guide for the website to suggest its structure and relationships between its pages. The wire-frame will illustrate the layout of the fundamental elements in the interface.

User Stories

User Stories: Login/Logout/Registration

- As a Visitor, register to the site with a unique email and information to become a member
 - Description/Details: If I provide my email myself, I need to confirm that it is mine by clicking on the link which is sent to it.
- As a Visitor, register to the site with social media login to become a member
 - Description/Details: If the system cannot retrieve an email address from these accounts, I am asked to provide it manually.
- As a Member, login in with my email and password
 - Description/Details: If my information is incorrect, I will be notified.
- As a Member, logout
 - Description/Details: Account activity will be saved and I will be redirected to the home page. I must login again to continue my account activity.
- As a Member, reinitialize my password
 - Description/Details: I will be redirected to reinitialize my password, and my old password will be changed.

User Stories: User profile

- As a Member, view my own profile
 - Description/Details: I will be redirected to my profile page.
- As a Member, view other Member's profile
 - Description/Details: I will be redirected to the member's profile page.
- As a Member, edit my profile information
 - Description/Details: I will be redirected to a profile form. I will enter information into the edit form. My previous information will be replaced by my current input.

- As a Member, view list of assets that a member has listed
 - Description/Details: I request a list of the assets belonging to a specific member. The listing will show assets belonging to a specific member. If the specific member has no assets then the listing will display a message.
- As a Member, read reviews about the member on their profile page
 - Description/Details: I request to view the reviews of a specific member. I will be redirected to the review section of their profile page. If the member has no reviews then I will be redirected to the review section of their profile page and a message will be displayed.
- As a Member, write reviews about the member on their profile page
 - Description/Details: I will write a review of a specific member and the review will be saved in the review section of their profile page.
- As a Member, send message to another member
 - Description/Details: I will write a message to a specific member and the message will be saved in their inbox.
- As a Member, read messages
 - Description/Details: I request to read a message from my inbox. I will be redirected to the message.
- As an Admin, send a message to all users
 - Description/Details: I will write a message to member(s) and the message will be saved in their inbox.
- As an Admin, ban a particular member from the site
 - Description/Details: I will remove all permissions a member has been granted, their accessibility to the site will be revoked.

User Stories: Assets/Requests

- As an Owner, add an asset
 - Description/Details: I will add an asset, and it will be saved within my listing. A correlating asset page will be created.
- As an Owner, write/edit/read description on my assets that I added
 - Description/Details: I will be redirected to an asset form, previous information regarding the asset will be replaced once I save my current input into the form.
- As an Owner, see an asset that I added
 - Description/Details: My listing will display the assets that I have added. If I click on an asset I will be redirected to the asset page of that specific asset.
- As an Owner, delete an asset that I added
 - Description/Details: I will remove an asset that I have added. The asset will no longer be displayed in any listings and their corresponding asset page will also be removed.
- As an Owner, define specific attributes for my assets

- Description/Details: I will add specific attributes such as category, size, accessory etc. to my asset. The attributes defined will appear in the asset page correlating to the specific asset.
- As an Owner, upload photo to an asset that I added
 - Description/Details: I will add an image to an asset. The image will correlate with the asset and appear in any listings and the correlating asset page. If I do not add an image, then my asset will be displayed without an image.
- As an Owner, get notifications regarding bids placed on my assets
 - Description/Details: I will receive a notification once a member has placed a bid on any of my assets.
- As an Owner, see bids placed on my assets
 - Description/Details: I will be redirected to the asset page and I will be able to see a list of all the bids placed and their corresponding member.
- As an Owner, accept/decline bids placed on my assets
 - Description/Details: I will select to accept or decline a bid placed on my assets. If I accept a bid then the corresponding member will be notified and my asset status will be changed to rented. If I declined, then the bid will be removed from the bid section of the asset page and the renter will be notified.
- As an Owner, place bids on a request from a renter
 - Description/Details: I will place a bid regarding a request and when I confirm the placement of the bid the corresponding member will be notified.
- As an Owner, bids I placed is only visible to the renter of the request and I
 - Description/Details: No one other than myself and the correlating renter can see my bid.
- As an Owner, get notifications regarding bid I placed on requests
 - Description/Details: I will receive a notification when someone accept or decline my bids.
- As a Renter, add a request
 - Description/Details: I will create a request. The request will appear in my listing and a correlating request page will be created.
- As a Renter, write/edit/read description on my request that I added
 - Description/Details: I will be redirected to a request form, previous information regarding the specific request will be replaced with input from the form once I save the form.
- As a Renter, see a request that I added
 - Description/Details: My listings will display my request. If I click on the request in the listing I will be redirected to the corresponding request page.
- As a Renter, delete a request that I added
 - Description/Details: Request will no longer appear in any listings and the corresponding request page will be removed.
- As a Renter, get notifications regarding bids placed on my requests
 - Description/Details: receive a notification when someone place a bid on my requests.

- As a Renter, see bids placed on my requests
 - Description/Details: I am on the request page of the specific request I will be able to see the bids placed on my request. If there are no bids placed than the bids section of the page will display a message.
- As a Renter, accept/decline bids placed on my requests
 - Description/Details: If I accept a bid placed on my request, then my request will be removed from all listings and the corresponding request page will be removed. If the asset provided by the owner is within their inventory listing then the status of the asset will be set to rented. If I decline the bid then the bid will be removed from the bids section of the request page. A notification will be sent to the owner in both cases.
- As a Renter, place a bid on an asset
 - Description/Details: I will place a bid on a specific asset. The bid will appear in the bid section of that specific asset page.
- As a Renter, bids I placed is only visible to the owner of the asset and I
 - Description/Details: Only the owner and I will be able to see the bid I placed.

User stories: [Searching/Browsing/Sorting]

- As a Visitor/Member, search listing by keywords/term
 - Description/Details: The listing will display all items containing the keywords/term I enter. If there are no items as such, then the listing will display a message. If I click on the item then I will be redirected to the item page.
- As a Visitor/Member, search listing by specific member
 - Description/Details: The listing will display all items correlating the member I enter. If there are no items as such, then the listing will display a message. If I click on the item then I will be redirected to the item page.
- As a Visitor/Member, search for a specific member
 - Description/Details: The listing will display the member I enter. If there are no members with the member name entered, then the listing will display a message. If I click on the member in the listing then I will be redirected to their profile page.
- As a Visitor/Member, sort by request
 - Description/Details: I activate sort by request. The listing will only display items correlating a request. If there are no requests then the listing will display a message.
- As a Visitor/Member, sort by asset
 - Description/Details: I activate sort by asset. The listing will only display items correlating an asset. If there are no assets then the listing will display a message.
- As a Visitor/Member, sort by location
 - Description/Details: When I active sort by location I will be prompt with a list of cities. The listing will only display items with that city set as an attribute.
- As a Visitor/Member, sort by attribute

- Description/Details: I activate sort by attribute. The listing will only display items with that specific attribute.
- As a Visitor/Member, sort by most recent
 - Description/Details: I activate sort by most recent. The listing will only display items that has been added most recently.

Visual Design

After final approval of the wire-frame, the CMPUT 401 Team will design the *look and feel* of the new website, which will reflect and represent Latium Marketplace and its clientele.

The CMPUT 401 Team and Latium Marketplace will have two revision sessions to go over the design and decide the final look and feel of the website.

Features

Front Page

This page is the main entry for any site user.

It contains many components including:

Logo

The logo area displays the Latium Marketplace branding.

Main Navigation Menu

This consists of a *Mega Menu* where users are able to navigate through different categories of assets available on the Marketplace. The categories are set up in a tree-like structure. For example a user may click or hover their mouse over Trucks to reach the sub-category 10-wheelers.

Secondary Navigation Menu

The secondary menu contains items directly related to the user.

The items including the following:

- Register (For visitor)
- Sign-in (For visitor)
- Account Settings

- My Listings
- By Bids
- My Messages

Search Bar

The search bar allows the users to perform a quick search on the site. Please refer to [Searching](#) for more details.

Footer Menu

This menu contains links to pages such as *About Us*, *Privacy Policy*, *Frequently Asked Questions*, *Help*, some asset categories (trucks, tractors), etc.

User Registration

This feature will allow site visitors to register using their email address or social media profile to become members of the Marketplace.

Usual Registration

This is done using a form where the user supplies the following informations:

- First name;
- Last name;
- Unique email address (with check);
- Email address confirmation (must be the same as the email previously entered);
- Password (with check);
- Password confirmation (must be the same as password previously entered);
- A button launching registration.

If registration fails, the user will have to modify information on the form following error messages according the corresponding form field.

If registration is successful, the user will be presented with a success message telling them to check their email inbox for a registration confirmation link. Once the user clicks on the confirmation link, they will be redirected to the site. Their registration is now confirmed and complete.

Social media registration

This is done by clicking on the preferred social media link. The social media API manages and validates the registration the user. This form of registration doesn't require the user to confirm their email address before they can start using the site. However a welcome message is still sent to the new user email address.

Possible social media options: Facebook, Google Plus, Twitter.

Site Login

A registered site member can login to the site by entering their email address and password. By clicking on the connection button they gain full access to member privileges (like posting, bidding, etc.).

The site member can also use the social media medium that they used when registering to gain full access to their account.

If the user uses information present in the database, they will be authenticated by the system; otherwise they will receive an error message stating that email/password is incorrect or that there was a problem connecting them through their social network medium. The user always has the option to reinitialize their password or to create an account.

Password Re-initialization

If a user that doesn't remember their password, they have the option to reinitialize it by entering their email address in the form field. If their email address is a recognizable email address in the database, the system sends a password reset link to the user via email. The user can then use this link to get redirected to a page on the site where they are able to change their password. In the case when the above steps fail, the user always has the option to contact the site support.

User Profile

Each user has their own personal page that shows available information based on the user's preferences.

On a user profile we can find:

- The name of the user
- Description about the user
- Assets currently being listed by the user

- Reviews
- A link to contact the user
- A link to report that user

Asset Detail Page

This page has two possible views, depending on who's viewing it (Renter's View/ Owner's View)

Renter's View

Each asset entered by a user has a page of information related to it. This page will have two functions, allow the user to view the details of the asset and allow the renter to interact with the owner.

On an asset page, we can find:

- The title of the asset;
- The asset description;
- Categories of the asset;
- Make of the asset;
- Tags of the asset;
- Pictures of the asset;
- The asset features/additions;
- The asset accessories;
- Rental time;
- Location of the asset;
- Previous rating of the asset
- Bid submission
- Message box to communicate with owner
- Price (only if a renter added a suggested price they desire to pay)

Owner's View

This page presents the ad posted by the owner for the asset and all the details listed prior in the *Renter's View*, except they are able to edit. The owner is also able to view all bids made in a table format.

All Assets Page

This page presents all the assets currently available on the site in a table like display.

Each asset will have:

- A clickable title that leads to the detailed asset page;
- Brief description;
- The rental or selling price; (A price will not be displayed if the owner is renting. Only if the owner is selling, or a renter is looking in a price point)
- The location
- A contact form, Please refer to [Contact form](#)

Members:

- They will be able to view the name of the poster and the name will be clickable and will redirect the user to the members profile page.
- An area to place their bid

Visitors:

- They will not be able to view the name of the poster, or the profile page. They will need to login or register to view these details.
- The area to place a bid will be greyed out.

Searching

The search bar will allow you to search by keyword of the item. After an initial broad search, there will be filters that can be added to the search.

Items will appear based on nearest available date. Items that are being rented out, will appear after items that are available for rent now.

- For ex: if a truck is being rented out till Feb 28, it will appear on the site as rented, and will appear after an item that is available for Feb 4th.

Advance Search Page

This page allow user to search for assets by keywords with multiple filters.

Available filters:

- Location
- Category
- Distance/Radius
- Date availability
- Offer (owner)/ Wanting (renter)
- Review High/low, low/high

Adding An Asset

This page allows a member to add an asset to their account for it to be available for other users to rent or buy.

When adding a new asset, a user need to supply the following information:

- Title
- Description
- Categories and/or subcategories by selecting items from a select menu
- Make
- Keyword or tags to improve the searchability of the asset
- Pictures
- Features
- Accessories
- Rental time and price if for rent
- Selling price if for sale

- Location
- Who to contact if not the poster is not the person to contact
- Any additional info

Contact Form

Under each post, there will be a contact form for users to send a message to the creator of the poster.

Members

They can fill out the contact form and send a message to the creator of the post. Once they send the message, a conversation board will appear with the respective members being the only two who can view the message/conversation.

Visitors

The contact form will be greyed out, and they will be asked to sign in or make an account to contact the creator of the post.

Message Page

This page will have multiple conversations broken up by person. If a member sends a message to another member that conversation will appear in the messaging page. Only members part of the conversation will be able to view the same content.

Bidding

Any member can place bids on an asset they want to acquire/rent. A user must be logged in to make a bid.

Renter

When making a bid as a renter, the member must enter (required fields):

- The start date
- The end date
- The price (per day or total days) they wish to pay

Owner

When making a bid as an owner, the owner must enter:

- The start date
- The end date
- The price (per day or total days)

A member can place as many bids as they want, however they will not see anyone else bids(this is mostly if they feel they entered the wrong price). When a bid is made, it will appear on the asset page along with the member's name, however this will only be visible to the poster. The poster can then select at any time a bid of their choice, and once the contract is finalized, all other bids disappear, and the post is changed to rented.

Technical Resources

Technologies

ASP.NET Core (ASP.NET Core MVC)

<https://docs.microsoft.com/en-us/aspnet/core/>

ASP.NET Core was chosen as it is an open-sourced version of the popular ASP.NET on the .NET Framework that is also able to be utilized cross platform. Running on either the .Net Core or .Net Framework, this will give us more flexibility in utilizing tools for the web application.

Microsoft SQL Server (For the beta-version that will be developed on Cybera, we will be using sql-server-2012)

<https://www.microsoft.com/en-ca/sql-server/sql-server-2016>

Chosen as this is the current database Latium is using on their production server.

Entity Framework

[https://msdn.microsoft.com/en-us/library/aa937723\(v=vs.113\).aspx](https://msdn.microsoft.com/en-us/library/aa937723(v=vs.113).aspx)

LINQ (.NET Language Integrated Query, for advanced queries on database)

<https://msdn.microsoft.com/en-us/library/bb308959.aspx>

Bootstrap

<http://getbootstrap.com/components/>

Chose above other front-end frameworks such as foundation due to team's familiarity and ease of use.

JQuery

<https://jquery.com/>

Libraries & Other Resources

Forms Authentication Provider

<https://msdn.microsoft.com/en-us/library/9wff0kyh.aspx>

Secret Manager - Enabling authentication using Facebook, Google, and other external providers

<https://docs.microsoft.com/en-us/aspnet/core/security/authentication/social/#use-secretmanager-to-store-tokens-assigned-by-login-providers>

RESTful API with ASP.NET Core MVC

<https://docs.microsoft.com/en-us/aspnet/core/tutorials/first-web-api>

Similar Products

<http://www.anyquip.com/>

What we like

- Easy access to assets by asset type on home page.
- Product recommendations on site home page.
- Ability to sign up for alerts from the website. (Improvement: Specific alerts to target needs)

What we're trying to improve

- Problem: Set asset rental rates.
 - Fix: Allow the renters to offer a rate to bid the asset. Constrained by a fixed amount of rental days.
- Problem: Cannot quickly join website, must wait for site administrator approval.
 - Fix: Instant *limited* access to the website.
- Problem: Disabled asset search upon lack of availability.
 - Fix: Renters should still be able to view assets on their future availability and book for the future.

<https://equipmentshare.com/>

What we like

- Visual aid in finding the asset needed.
- Clear division of the options between renting and buying assets.
- One click purchase proposal.

What we're trying to improve

- Problem: One owner of all assets.
 - Fix: Allow multiple businesses to post assets.
- Problem: No verification, able to make a reservation without credible information.
 - Fix: Validate user before confirming rental.
- Problem: No return feedback on rental.
 - Fix: Upon validation give instant verification that you have rented the asset.

The Team

Project Manager:

Meysam Fegghi

Visual Design and Web Development:

Michael Côté, Vinson Lai, Philip Lam, Victoria Lee, Gaylord Mbuyi

Project Owners:

Lori and Tony Pecorilli (Latium Fleet and Asset Management)

Content Writers:

Lori and Tony Pecorilli (Latium Fleet and Asset Management)

Technology Consultant:

Michael Boddy (Latium Fleet and Asset Management)

Next Steps

Upon receiving a copy of the Latium Marketplace website development proposal, representatives of the CMPUT 401 Team and Latium Fleet and Asset Management will meet in person to discuss and sign the proposal. It is at this point that the project development will begin.

Timeline

The project will be delivered in accordance to the CMPUT 401 sprint rubriques. The approval of meeting these checkpoints will be monitored and judged by the teaching staff of CMPUT 401, Eleni Stroulia and Meysam Feghhi.

Sprint 1	Requirements Contract & Management Plan	February 2, 2017
Sprint 2	Updated Requirements Analysis, Documentation, and Software Architecture	February 17, 2017
Sprint 3	Progress Demonstration	March 10, 2017
Sprint 4	Minimum Viable Product	March 24, 2017
Sprint 5	Completed Product	April 7, 2017
N/A	Final Demonstration	April 10, 2017

Glossary

- Visitor: Anyone who is not a member of the site
- Member: Anyone who has successfully completed the registration process
- Owner: Anyone who is a member and an owner of assets
- Renter: Anyone who is a member and looking for assets
- Admin: Anyone who is given full access to the web application

Objects:

- Assets: Anything belonging to an owner
- Requests: Asset acquisition
- Item: An Asset or a request
- Bid: An offer for a given asset, provided some conditions

Statement of Agreement

Project

Latium Marketplace website development

People

CMPUT 401 Team

Latium Fleet and Asset Management

I have reviewed the proposal and authorize the CMPUT 401 Team to proceed with the development outlined therein.

Signed:

Date: