Software Requirements Specification

for

Vaistreet

Version 1.0 approved

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Feasibility Analysis Report

This product is listed as an upcoming project under Safcodes. Safcodes was founded in 2012 and have been in the website development business since then. Our team was approached to build Vaistreet, a social e-commerce solution for the web. We were given the following set of requirements:

- An Intuitive and yet modern user Interface for an e-commerce site with an extended functionality to include social posts and blogs.
- The website must be responsive, so that it adapts to all screen sizes (mobile, tablet and desktop).
- A back-end that serves all the data to the client on demand.
- Integration of the website with a trusted payment processing portal.
- Implementation of a chat feature to exchange messages.

These requirements broadly cover the expectations of our client from our project. As a team we did a feasibility analysis on the requirements and have decided to start working on the project.

The interface is not a constraint as there are several templates available to choose from. Although we have to still work on the templates to produce the final webpage but we think it is feasible. Since we know we need to make a responsive website at the beginning, it will not be an issue. Our team has enough back end expertise to fulfill the back end requirements. We have chosen PayUmoney as our payment processing portal and will try to make use of its easy to implement API. Implementing the chat feature may take time but after some research we think we can include it into our website. Hence we conclude that the desired website and functionalities are feasible to develop.

1. <u>Introduction</u>

1.1. Purpose :

The main objective of this document is to illustrate the requirements of the project Vaistreet, a social e-commerce website. This document gives a detailed description of both functional and non-functional requirements proposed by the client. The purpose of this project is to provide a responsive web portal for online customers to shop and share products. The main objective is to provide a platform for two purposes: Advertising products and brands in grapevine, providing a catalog from where these products can be bought. This project describes the hardware and software interface requirements using UML diagrams.

1.2. Document Conventions :

- ➢ Content inside tables should be Center aligned.
- ➢ Rest of the document should be justified.
- ➢ Conventional for Main title
    - o Font face: Times New Roman
    - o Font style: Bold and Underlined
    - o Font size: 18
- ➢ Convention for Sub title
    - o Font face: Times New Roman
    - o Font style: Bold
    - o Font size: 14
- ➢ Convention for Body
    - o Font face: Times New Roman
    - o Font size: 12

1.3. Intended Audience and Reading Suggestions :

This document is intended for product owner, developers, users, testers and documentation writers. The rest of this SRS contains overall description of the project, external interface requirements, system features and other non-functional requirements.
- ➢ Suggested sequence to read this document for all viewpoints (especially users and product owner) is to read Introduction first and then Overall Description for clarity about the product.
- ➢ UI designers and testers can refer to External Interface requirements.
- ➢ Developers and testers can refer to a detailed report about the project features in System Features and for non-functional requirements refer to Other Nonfunctional Requirements.

Definitions, Acronyms and Abbreviations –

- ➢ UML – Unified Modeling Language
- ➢ SRS – Software Requirement Specification
- ➢ IEEE – Institute of Electrical and Electronics Engineers
- ➢ API – Application Programming Interface
- ➢ REST - Representational State Transfer
- ➢ JSON - JavaScript Object Notation
- ➢ OTP – One Time Password

1.4. Product Scope :

The Vaistreet website is hosted online hence users can access the website over the internet. This project is specifically being developed for Safcodes Pvt. Ltd. The product will work as a complete user interface for online shopping and advertising. Online customers are provided with a platform to shop and share, that is the essence of the whole product. We and the product owners envision that this product will be used by buyers to either buy a product or provide content about the product which is publically visible to other users on a newsfeed of the author. This content about a product is central for business. This is what Safcodes can use to drive revenue from the website.

1.5. References :

- ➢ Use Case diagram : Page – 14
- ➢ IEEE template for SRS
- ➢ Books
  - o Software Engineering: A Practitioner's Approach Fifth Edition By Roger S. Pressman
- ➢ Website
  - o http://safcodes.com/

2. <u>Overall Description</u>

2.1. Product Perspective :

This product is not a follow-on member of a product family. It's a new product.

A user can either be registered or a guest. Guest users can register on the website to become a registered user. Registered users can login to the website to enjoy features only for registered users. The software will provide a search facility for searching a product. The search feature can be extended to incorporate specific parameters to provide a more accurate and relevant product. The search parameters can be price, brand, etc. User can browse a catalog of products categorized for convenience. Only registered users can purchase a product, create blogs (forums) regarding brands or the specific products sold on the website. For a more detailed description refer to System Features.

2.2. Product Functions :

The website allows users to shop for products online. Users can browse through a catalog of categorized products and choose an item for further information. The product details page contains reviews regarding the product and related content, in the form of public newsfeeds. Registered users can buy a product, cancel a product already ordered and track the ordered product. Registered users can start a forum or as we call it a newsfeed to discuss brands and products. Users may chat among themselves by exchanging messages. For further details refer to System Features.

2.3. User Classes and Characteristics :

The software provides different types of services based on the type of users.
The features available to a guest user are:-

- ➢ Can view product catalog
- ➢ Can view product detail page
- ➢ Can search for a product
- ➢ Can browse public newsfeeds.
- ➢ Can register to become a registered user

The features available to a registered user are:-

- ➢ All of the above features
- ➢ Manage credentials (Password and profile information).
- ➢ Purchase a Product

➢ View Invoice of purchases
➢ View list of ordered products
➢ Cancel a purchased product
➢ Track shipment details
➢ Create a newsfeed
➢ Upload posts on a newsfeed
➢ Post reviews on a product's page
➢ Message Exchange (Chat) among users.

2.4. Operating Environment :

The product is cross platform as it runs on a web browser. The website will run on all widely used browsers. The product is a responsive website hence it will cater to all screen sizes including mobile, desktops and tablets.

2.5. Design and implementation constraints :

Some constraints that may limit options available to the developers are:
➢ Integration of external monetary transaction API
➢ Elastic search API integration
➢ Online Security concerns
➢ Scalability of database storage

2.6. User Documentation :

The product is a website hence deliverables or manuals are not required with the software. The website will have comprehensive names for every tab or feature which shall be clearly evident.

2.7. Assumptions and Dependencies :

The website assumes internet access to be available, as the site can only be accessed via the internet. The software makes use of PayUMoney or any other external payment processing API that may be unavailable if the company (PayUMoney) has technical issues. This software also makes use of an email REST api.The software assumes that the web host service providers have their systems running all the time to provide a 24*7 access to the website. This website is also dependent on some libraries that are available online and are listed below,

- ➢ Bootstrap, Version: 3.3.7
- ➢ Font Awesome, Version: 4.6.0
- ➢ AngularJS, Version: 1.5.8
- ➢ Express, Version: 4.14.0
- ➢ Node.js, Version: 4.5.0
- ➢ MongoDB, Version: 3.2.0
- ➢ Mongoose ODM, Version: 4.6.0

3. <u>External Interface Requirements :</u>

3.1. User Interfaces :

The product has a common interface for both registered and unregistered users. This interface includes the product catalog, product details page, product reviews, public newsfeeds. The image below depicts this common interface.
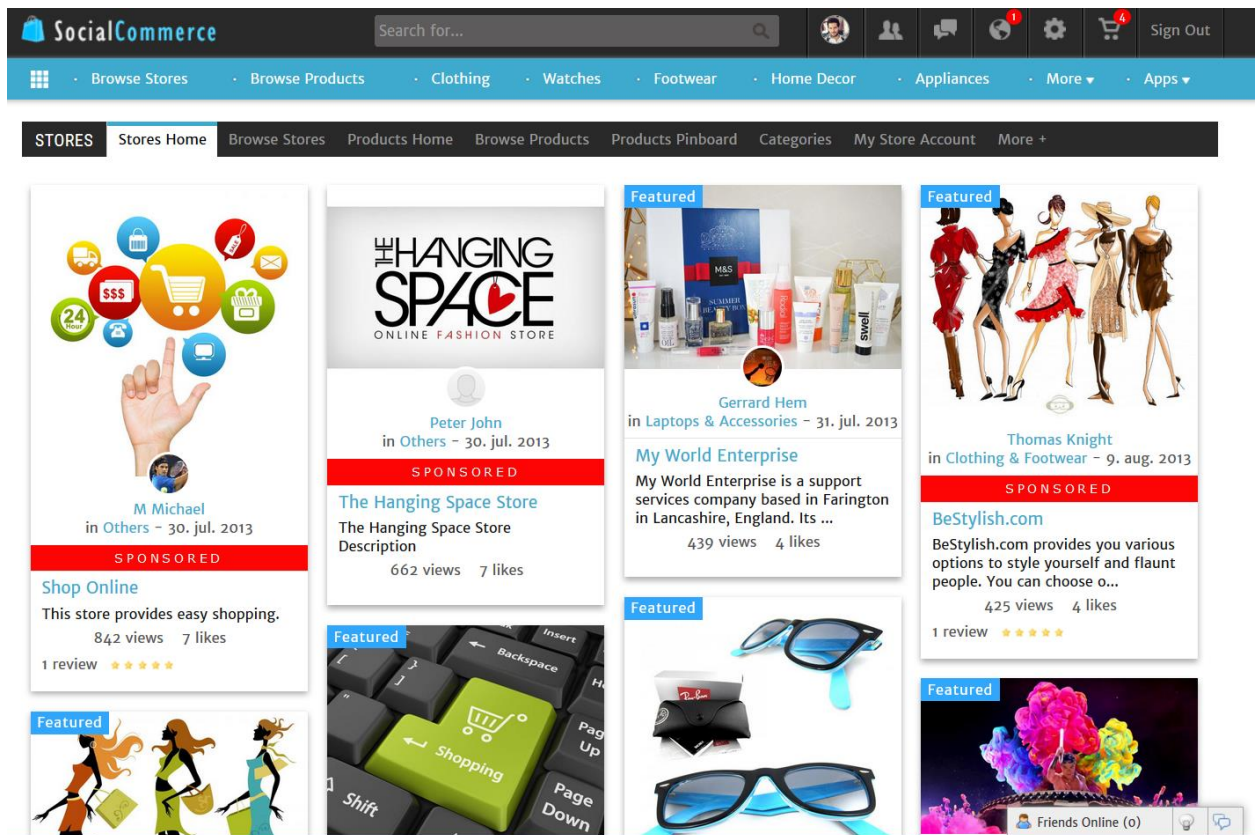
Features available only for registered users will have a separate interface in addition to the common interface. This interface includes all the added functionalities specified under the registered user class in User Classes and Characteristics. Below is an image that depicts this interface.
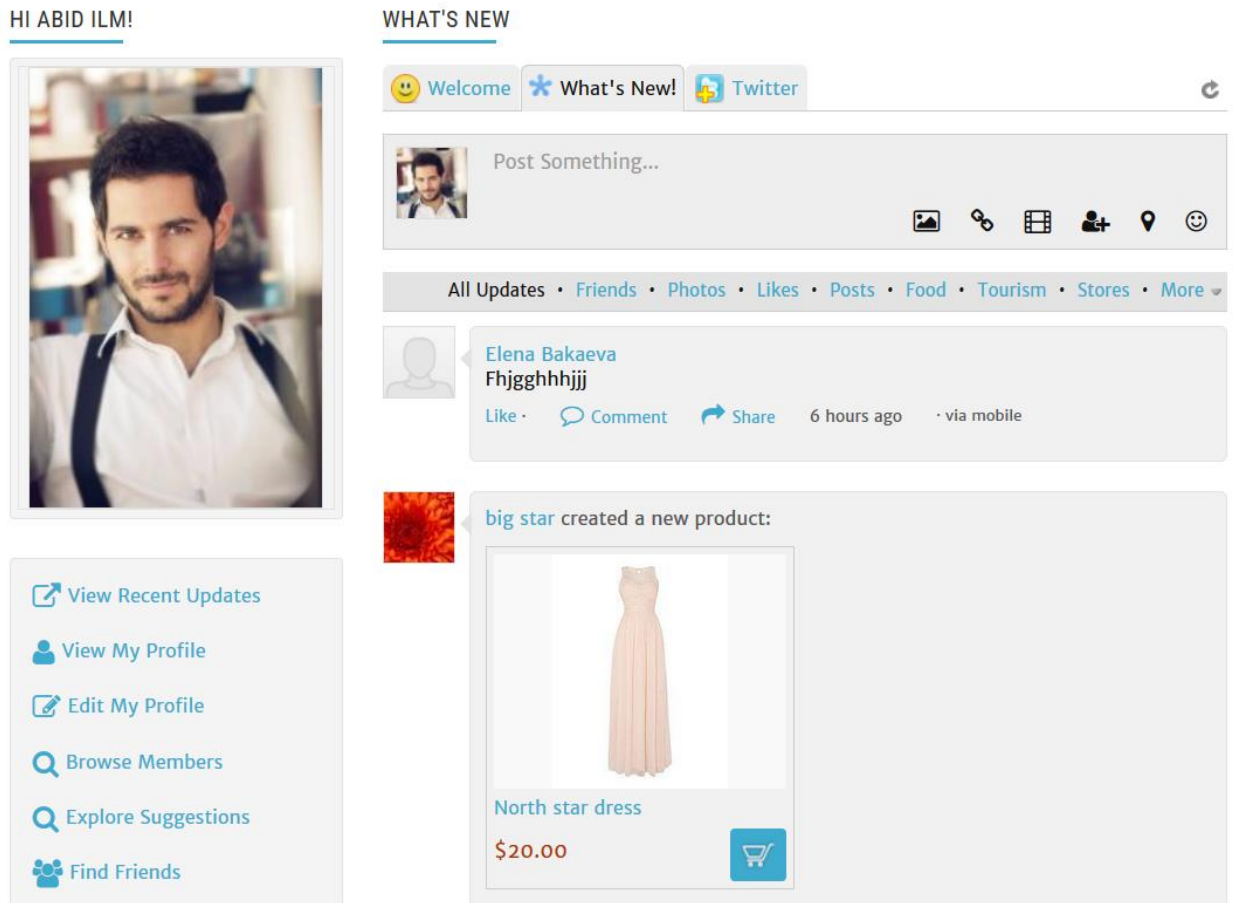
3.2. Hardware Interfaces :

This product does not involve any software and hardware interface, barring the basic peripheral input/output interface on the user device. This website does not make use of any extra interfaces.

3.3. Software Interfaces :

This product incorporates several software interfaces listed below,

- ➢ PayUMoney REST API that returns JSON docs after processing payment
- ➢ Elastic search REST API which also uses JSON format for query and response
- ➢ Email web API using REST and node.js
- ➢ Interface between server side code and MongoDB database in JSON format
- ➢ Libraries :
  - o Bootstrap, Version: 3.3.7
  - o Font Awesome, Version: 4.6.0
  - o AngularJS, Version: 1.5.8
  - o Express, Version: 4.14.0
  - o Node.js, Version: 4.5.0
  - o MongoDB, Version: 3.2.0
 - o Mongoose ODM, Version: 4.6.0

3.4. Communications Interfaces :

The main communication interface will be between the client and the database which will involve exchange of JSON objects. Register and login forms are used for authenticating a user. This product requires sending an invoice via email. A One Time Verification feature can also be used to authorize a user via email. Most frequently used communication will be with the JSON server or the database.

4. <u>System Features :</u>

Requirement Identity	Short Name	Short Description
RQ1	View Catalog	A user (registered or guest) can view the product catalog which is a well organized and intuitive menu for a wide range of products.
RQ2	Product Search	A user (registered or guest) can search for a specific product by typing a search phrase on a search bar. User may also use search filters for accurate results.
RQ3	Search Newsfeeds	A user (registered or guest) can search for a newsfeed of a particular brand or product started by a registered user.
RQ4	View Newsfeeds	A user (registered or guest) can view the newsfeed posted by other users and can derive information from the reviews on certain products.
RQ5	View product page	A user (registered or guest) can view the product details page for more information on the product such as price, seller, availability, specifications, etc.
RQ6	User Registration	A guest user needs to register to the website in order to purchase or use other features only accessible by a registered user. To become a registered user, they need to register to website. User may also use OTP verification to conform his identity.
RQ7	Essential User Info	The user must provide essential information for example email id, contact number while registering for an account.
RQ8	User Login	To authenticate a registered user a login form is used. User may also opt for a login through OTP verification.
RQ9	Forget Password Help	If a registered user forgets his/her password, he/she may click on the "forgot password" option to receive a verification link provided through mail.
RQ10	Edit Profile	A registered user can edit the profile information that is displayed

		on his/her profile page including the account password.
RQ11	Product Purchase	A registered user can purchase a product and checkout through a payment portal after authorization.
RQ12	Checkout Authorization	This is an added functionality of purchasing a product where the external payment processing API authorizes the user for payment.
RQ13	Invoice generation	A registered user will receive an invoice of the ordered product on his email address.
RQ14	List ordered products	A registered user can view the list of ordered products along with relevant information of the purchase.
RQ15	Track Order	Registered users can keep track of their orders by checking on the track order page which displays relevant shipment details, refund status, etc.
RQ16	Cancel Order	A registered user can cancel a order and initiate a refund process.
RQ17	Create News-feed	A registered user is free to start a blog or a forum where he/she can share product reviews, advertise a product already sold on the website, etc and tag products being sold on the website.
RQ18	Post on Newsfeed	A registered user can upload posts that can be reviews or simply experiences for the product he/she bought on the website. These posts can be text, images, links, audio, video and gifs.
RQ19	Post Product Reviews	A registered user can post a review directly on a product's page. Reviews contain a rating, text, date and author name
RQ20	User or Customer Care Messages	A registered user can exchange messages with other registered users or a dedicated customer care account on a chat space.

Use Case Diagram:

5. <u>Other Nonfunctional Requirements :</u>

Requirement Identifier	Short Name	Short Description
RQ1	Responsive UI	The website should be responsive. It should adapt to all screen sizes for mobile, tablet and desktop.
RQ2	Minimalist	The user interface must be intuitive and easy to use. The interface must be usable by all types of users.
RQ3	Scalable	The website must be scalable. It should be able to handle multiple instances of user activity.
RQ4	Secure	Database operations must be secure. All transaction details must be masked from user and encrypted during exchange.
RQ5	Reliable	Every exchange between database and the client must be verified and stored on the database with a reliable backup.
RQ6	Robust	The website must not crash even if number of requests increase. If the requests are over capacity then all the user details and transaction details must be backed up.
RQ7	Maintenance	The source code of the website must be easy to maintain and reuse.

6. <u>Requirements Traceability Matrix:</u>

Abbreviation:

D – Dependant

R - Related

	RQ1	RQ2	RQ3	RQ4	RQ5	RQ6	RQ7	RQ8	RQ9	RQ10	RQ11	RQ12	RQ13	RQ14	RQ15	RQ16	RQ17	RQ18	RQ19	RQ20
RQ1		R			R															
RQ2	R				R															
RQ3				R													R	R		
RQ4			R														R	R		
RQ5	R	R									R								R	
RQ6																				
RQ7						D														
RQ8						D														
RQ9						D		D												
RQ10						D		D												
RQ11					R	D		D												
RQ12						D		D			D									
RQ13						D		D			D	D								
RQ14						D		D			D	D			R	R				
RQ15						D		D						R		R				
RQ16						D		D						R	R					
RQ17			R	R		D		D												
RQ18			R	R		D		D									D			
RQ19					R	D		D												
RQ20						D		D												

7. <u>Development Traceability Matrix:</u>

Requirement Identity	Use case addressing the requirement	Classes addressing the requirement	Methods addressing the requirement	Unit Test cases addressing the requirement
RQ1	UC1			
RQ2	UC2, UC3			
RQ3	UC4			
RQ4	UC4			
RQ5	UC5			
RQ6	UC6,UC7			
RQ7	UC6			
RQ8	UC8,UC7			
RQ9	UC9			
RQ10	UC10			
RQ11	UC11,UC12			
RQ12	UC12			
RQ13	UC13			
RQ14	UC14			
RQ15	UC15,UC22			
RQ16	UC16			
RQ17	UC17			
RQ18	UC18			
RQ19	UC19			
RQ20	UC20,UC21			