System Requirements Specification
For

Submitted by:
Team Savvy

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Grading Rubric - Requirements Specification

This rubric outlines the grading criteria for this document. Note that the criteria represent a plan for grading. Change is possible, especially given the dynamic nature of this course. Any change will be applied consistently for the entire class.

Achievement	**Minimal**	**Exemplary**	**Pts**	**Score**
Content	Section(s) missing, not useful, inconsistent, or wrong.	Provides all relevant information correctly and with appropriate detail		
Introduction			10	
Overall Description			10	
Requirements			50	
Logical Database & Constraints			10	
Grammar and Spelling	Many serious mistakes in grammar or spelling	Grammar, punctuation, and spelling all correct	10	
Expression **Tone**	Hard to follow or poor word choices Tone not appropriate for technical writing	Clear and concise. A pleasure to read Tone is consistently professional	5	
Organization **Layout**	Information difficult to locate Layout is inconsistent, visually distracting, or hinders use	All information is easy to find and important points stand out Layout is attractive, consistent, and helps guide the reader	5	
Late Submission				
Total			100	

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Table of Contributions

The table below identifies contributors to various sections of this document.

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1	**Introduction**	JJ, EB	JJ
2	**Overall Description**	RT, CM	RT
3	**Specific Requirements**	WA, EB, JJ, CM, CS, RT	CM
3.1	External Interfaces	WA, CS	CS
3.2	Functional Requirements	WA, EB, JJ, CM, CS, RT	JJ
3.3	Non-Functional Requirements	WA, EB, JJ, CM, CS, RT	EB
3.4	Data Requirements	EB	WA
3.5	Design Constraints	CM, CS	CM

1. Introduction

1.1. Purpose

This document is the System Requirements Specification for Savvy, a cost sharing web application.

1.2. Scope

Savvy lets users search, verify, and share current prices for goods and services in a specific location. The application will rely on peer submitted price data; the incentive for submission is that users can only retrieve price information if they submit information of their own. Savvy differs from other options on the market in that it allows actual prices to be seen, as opposed to symbolic representations of costs, i.e. Yelp's dollar signs, (Yelp, n.d.). Savvy will promote free market principles through the use of perfect information dissemination.

1.3. Definitions, Acronyms, and Abbreviations

Input Requirements - The information put in the system for functional processes.

Tags - User submitted words or phrases used to categorize products or services.

1.4. References

Browser market share. (n.d.). Web. < https://www.netmarketshare.com/browser-market-share.aspx?qprid=2&qpc ustomd=0>.

ISO. (1967). *ISO recommendation R 639: Symbols for languages, countries and authorities*. S.l: International Organization for Standardization.

United States. (1990). *The Americans with Disabilities Act*. Washington, D.C.: U.S. Dept. of Justice, Civil Rights Division, Coordination and Review Section.

United States. (1994). *Rehabilitation Act of 1973 as amended March 1994*. Washington, D.C.: U.S. Dept. of Education.

"Yelp." *About Us*. Yelp, n.d. Web. <http://www.yelp.com/about>.

2. Overall Description

2.1. User Characteristics

There are two types of the users that will use the system: application users and application administrators.

Application users will use either the desktop or mobile website. This group will use the application to search for goods or services in their area to find the best price. They will also submit the prices of goods or services in their area.

Application administrators will use the desktop website to access the audit controls portion of the system. Application administrators will primarily use this to maintain system content and moderate submissions.

2.2. System Features

- Calculate a price range for a desired good or service
- Generate a graph view of price data
- Display details on the business providing the good or service
- Display crowd-sourced pictures of goods
- Enable a search capability to search for specific goods or services by region or tags
- Provide a receipt reader for inputting new prices

3. Specific Requirements

3.1. External Interfaces

3.1.1. Data Interface (WA)

3.1.1.1. Location services will be necessary in order to determine the business at which a price was entered.

3.1.1.2. An external plaintext scanner will be necessary.

3.1.2. User Interface (CS)

3.1.2.1. The system shall have an interface that is accessible from a desktop web browser. See section 3.5.1.

3.2. Functional Requirements

The statements below define the functional requirements for the system.

3.2.1. Accounts (RT, JJ, CS)

3.2.1.1. The system shall allow users to create user accounts.

3.2.1.2. The user shall submit required information detailed in the logical database section 3.4.1, excluding IsAdmin, Reputation, and CreationDate.

3.2.1.3. The system shall allow for administrator accounts.

3.2.1.4. The system shall allow for users to login.

3.2.1.5. The system shall allow users to change their current password.
3.2.1.6. The system shall allow users to recover their account if they forget their password.
3.2.1.7. The system shall allow users to view all user information referenced in section 3.4.1.

3.2.2. Administrative Functions (JJ, RT, EB, CS)

3.2.2.1. The system shall allow administrators to view all user information referenced in section 3.4.1.
3.2.2.2. The system shall allow administrators to view price submission history for any user.
3.2.2.3. The system shall allow administrators to create other administrative accounts.
3.2.2.4. The system shall allow administrators to reset passwords for all users.

3.2.3. Submitting Price Information (RT, EB, JJ)

3.2.3.1. The system will allow users to manually submit business information referenced in section 3.4.2.
3.2.3.2. The system will allow users to manually submit goods or service information referenced in section 3.4.3.
3.2.3.3. The system shall read text from receipts.
3.2.3.4. The system shall use information from receipts to automatically enter price information.
3.2.3.5. The system shall allow users to upload images of products.
3.2.3.6. The system shall display user-uploaded images of products on product pages.
3.2.3.7. The system shall display a default image if no images of the product are available.
3.2.3.8. The system shall allow users to submit tags for categorizing goods or services.
3.2.3.9. The system shall allow users to confirm the accuracy of individual prices.

3.2.4. Search (EB, CS, JJ)

3.2.4.1. The system shall allow users to search for products.
3.2.4.2. The system shall allow users to search for services.
3.2.4.3. The system shall allow users to search for businesses.
3.2.4.4. The system shall allow users to search by tags.

3.2.5. Retrieving Price Information (RT, JJ, EB)

3.2.5.1. The system shall display a graphical representation of price data for a given good or service over a chosen period of time.

3.2.5.2. The system shall prohibit users from retrieving price information if they have not submitted price information.

3.2.5.3. The system shall display price metrics comprised of the mean, median, minimum and maximum.

3.2.5.4. The system shall be able to display a graphical representation of price data using metrics referenced in section 3.2.5.4.

3.2.5.5. The system shall display calculated metrics when prompted.

3.2.6. Documentation (JJ)

3.2.6.1. The system shall have an FAQ page for users.

3.2.7. Application Programming Interface (API) (EB, RT)

3.2.7.1. The system shall provide an API for authenticated and unauthenticated users to read price, product, service and business information from the system.

3.2.7.2. The system shall provide an API for authenticated users to submit price, product, service and business information to the system.

3.3. Non-Functional Requirements

The statements below define the non-functional requirements for the system.

3.3.1. Security (CM)

The system must be designed to ensure that the system and all data contained within it are secured from unauthorized access. Additionally, the system shall ensure that all personal information is kept private.

3.3.1.1. The system shall provide a secure method for accessing the site that is resistant to eavesdropping.

3.3.1.2. The system shall provide a secure method for storing and retrieving user provided data.

3.3.1.3. The system shall ensure that user-submitted price data is anonymized when displayed.

3.3.1.4. The system shall ensure that user-submitted searches are kept private and secure using the best security standards and practices deemed appropriate and feasible.

3.3.2. Performance (CS)

The system shall load webpages within 5 seconds.

3.3.3. Availability (CS)

The system shall maintain availability in excess of 95% of the time.

3.3.4. Accessibility (CM)

3.3.4.1. The system shall be built in a way that is a accessible to users with handicaps and disabilities.

3.3.4.2. The system shall be built to maintain compliance with the American's with Disabilities Act Title II. (United States, 1990).

3.3.4.3. The system shall be built along the guidelines set forth in section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794d).

3.3.4.4. The system shall be built to be accessible to users of the American English language, (ISO 639-1 en-US).

3.4. Logical Database Requirements

3.4.1. User Data (EB)

Name	Type	Size (chars)	Required	Comment
Username	String	12	Yes	Users must enter a personal username.
First Name	String	32	Yes	
Last Name	String	32	Yes	
IsAdmin	Boolean	1	No	Admin users will have IsAdmin set to true. This field is only visible to other admins when they are creating an account.
Encrypted Password	String	128	Yes	Users must enter a password for verification purposes, which will be encrypted before entering the database.
Email	String	24	Yes	Users must provide an email address for communications and password retrieval.
Reputation	Number	1	No	A number in the range of 0-5 will be given to each user. This number will not be visible to anyone but Savvy and will be used to give priority to the prices entered by users with higher reputation. This

				number will be generated by Savvy and is not editable by the user.
Creation Date	Date		No	The date that the user created their account, this may be used to calculate reputation. The date will be entered automatically by the system based on the timestamp of the user's account creation.

3.4.2. Business Data (EB)

Name	Type	Size (chars)	Required	Comment
Business Name	String	128	Yes	This information should be retrieved via a business information service.
Address	String	128	Yes	This information should be retrieved via a business information service.
Hours	String	128	Yes	A business' hours of operation, this information should be retrieved via a business information service.
Phone Number	Number	10	Yes	This information should be retrieved via a business information service.
Products	String	128	No	Products that the business sells. This field will grow as users enter price information for a particular business.
Services	String	128	No	Services offered by the business. This field will grow as users enter price information for a particular business.

3.4.3. Product/Service Data (EB)

Name	Type	Size (chars)	Required	Comment
Product/ Service Name	String	128	Yes	
Price	Number	128	Yes	
Accuracy	Number	3	No	This number is generated by the system based upon the way that users rate the accuracy of a particular price.
Business	String	128	Yes	The business where the product was purchased.
Images	String	128	No	Not required. The filenames of user uploaded images of products/services.
Tags	String	36	No	Not required. User submitted words or phrases used to categorize products.

3.5. Design Constraints

3.5.1. Desktop Website (CS)

The system shall have a web interface. The system shall support Google Chrome Version 48, Mozilla Firefox version 43.0.4, and Safari version 5.1.10.

Source: Chen Wang, Stakeholder
Rationale: The users need access to a web interface in order to input and view price data. By supporting the most current web browsers it will allow us to use the most up to date web standards.

3.5.2. Mobile Website (CS)

The system shall support mobile sized screens. The system shall support screen resolutions that are used by Android, Windows, and Apple's mobile devices.

Source: Chen Wang, Stakeholder
Rationale: Users must have the option of inputting and viewing pricing data when on the go.

3.5.3. API (CM)

The system shall provide an application-programming interface (API) for authenticated and unauthenticated users to interact with the system in a programmatic way. The system shall

provide a public API for unauthenticated users to read data which is not specified in section 3.3.1. The system shall provide a private API for authenticated users to alter data. The API will use current industry standard technologies to present data.

Source: Chen Wang, Stakeholder
Rationale: An API is critical for the long-term development of the system. An API will ensure that the system can be maintained and expanded in the future. An API will also prevent the need to maintain multiple independent programming interfaces for data access.