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| **Brewers Buddy** |
| Software Requirements Specification |
| SWENG 500 Team 3 |
|  |
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# Revision History

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# Introduction

The introduction to the Software Requirement Specification (SRS) document should provide an overview of the complete SRS document. While writing this document please remember that this document should contain all of the information needed by a software engineer to adequately design and implement the software product described by the requirements listed in this document. (Note: the following subsection annotates are largely taken from the IEEE Guide to SRS).

## Purpose

Brewer Buddy will be an online application that allows home brewers to enter and track batch information for beer and wine.

## Scope

*This subsection should:*

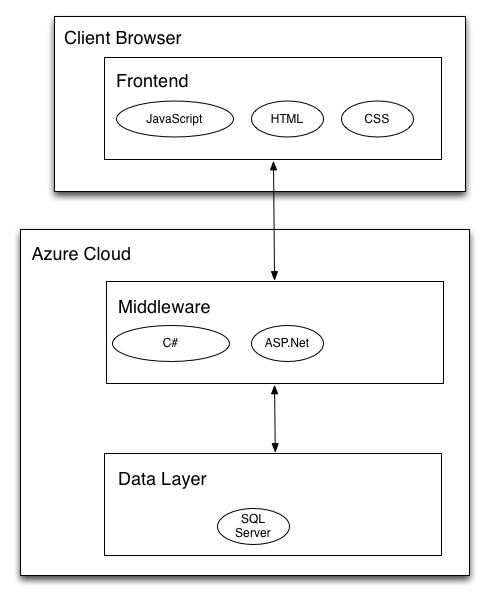
*(1) Identify the software product(s) to be produced by name; for example, Host DBMS, Report Generator, etc*

*(2) Explain what the software product(s) will, and, if necessary, will not do*

*(3) Describe the application of the software being specified. As a portion of this, it should:*

*(a) Describe all relevant benefits, objectives, and goals as precisely as possible. For example, to say that one goal is to provide effective reporting capabilities is not as good as saying parameter-driven, user-definable reports with a 2 h turnaround and on-line entry of user parameters.*

*(b) Be consistent with similar statements in higher-level specifications (for example, the System Requirement Specification) , if they exist.What is the scope of this software product.*



**Figure 1: High level System Diagram**

## Definitions, Acronyms, and Abbreviations

*This subsection should provide the definitions of all terms, acronyms, and abbreviations required to properly interpret the SRS. This information may be provided by reference to one or more appendixes in the SRS or by reference to other documents.*

OG – Original Gravity

FG – Final Gravity

SP – Specific Gravity

ABV – Alcohol by Volume

FAQ – Frequently Asked Questions

## References

*This subsection should:*

*(1) Provide a complete list of all documents referenced elsewhere in the SRS, or in a separate, specified document.*

*(2) Identify each document by title, report number - if applicable - date, and publishing organization.*

*(3) Specify the sources from which the references can be obtained.*

*This information may be provided by reference to an appendix or to another document.*

## Overview

*This subsection should:*

*(1) Describe what the rest of the SRS contains*

*(2) Explain how the SRS is organized.*

# General Description

*This section of the SRS should describe the general factors that affect 'the product and its requirements. It should be made clear that this section does not state specific requirements; it only makes those requirements easier to understand.*

## Product Perspective

*This subsection of the SRS puts the product into perspective with other related products or*

*projects. (See the IEEE Guide to SRS for more details).*

## Product Functions

This subsection of the SRS should provide a summary of the functions that the software will perform.

## User Characteristics

This subsection of the SRS should describe those general characteristics of the eventual users of the product that will affect the specific requirements. (See the IEEE Guide to SRS for more details).

## General Constraints

*This subsection of the SRS should provide a general description of any other items that will*

*limit the developer’s options for designing the system. (See the IEEE Guide to SRS for a partial list of possible general constraints).*

## Assumptions and Dependencies

This subsection of the SRS should list each of the factors that affect the requirements stated in the SRS. These factors are not design constraints on the software but are, rather, any changes to them that can affect the requirements in the SRS. For example, an assumption might be that a specific operating system will be available on the hardware designated for the software product. If, in fact, the operating system is not available, the SRS would then have to change accordingly.

# Specific Requirements

This will be the largest and most important section of the SRS. The customer requirements will be embodied within Section 2, but this section will give the D-requirements that are used to guide the project’s software design, implementation, and testing.

Each requirement in this section should be:

* Correct
* Traceable (both forward and backward to prior/future artifacts)
* Unambiguous
* Verifiable (i.e., testable)
* Prioritized (with respect to importance and/or stability)
* Complete
* Consistent
* Uniquely identifiable (usually via numbering like 3.4.5.6)

Attention should be paid to the carefuly organize the requirements presented in this section so that they may easily accessed and understood. Furthermore, this SRS is not the software design document, therefore one should avoid the tendency to over-constrain (and therefore design) the software project within this SRS.

## External Interface Requirements

### User Interfaces

### Hardware Interfaces

### Software Interfaces

### Communications Interfaces

## Functional Requirements

### Accounts

1. The system shall allow a new user to create an account (register). UC #1
2. When creating a new user account, the system shall require the user to enter their username, email, and password. UC #1
3. When creating a new user account, the system shall verify that the username does not match the username of any other registered user. UC #1
4. When creating a new user account, the system shall require the user to reenter their password a second time, and the system shall verify the two entered passwords match. UC #1
5. When creating a new user account, the system shall not display the user-entered password(s) on the screen. UC #1
6. When creating a new user account, the system shall allow the user to optionally enter any of the following: their first name, last name, city, state, zip code. UC #1
7. The system shall require the user password to be not less than 6 characters. Valid characters are A-Z, a-z, 0-9, and the 32 special characters: ` ~ ! @ # $ % ^ & \* ( ) - \_ = + [ ] { } \ | ; : ‘ “ , . < > / ? UC #1
8. After a valid registration, the system shall automatically login the user. UC #1
9. The system shall allow the user to view their saved account information. The information that can be viewed is username, email, first name, last name, city, state, and zip. UC #6
10. The system shall allow the user to change their saved account information. The information that can be changed is password, email, first name, last name, city, state, and zip. UC #5
11. When changing the user password, the system shall require the user to enter the current password, and then the new password. UC #5
12. When changing the user password, the system shall require the user to enter the new password twice and verify the entered passwords match. UC #5
13. The system shall allow a user to delete their account. UC #10
14. If the user requests to delete their account, the system shall prompt the user to verify they want the account deleted. UC #10
15. After a user verifies they want to delete their account, the system shall log the user out and delete their stored account information. UC #10
16. If the system deletes a user’s account, the system shall also delete any other information entered by that username, such as batches, notes, actions, measurements, ratings, recipes, etc... UC #10

### Log In/Out

1. The system shall not allow a user to access any web pages other than the login, registration, recover password, and FAQ pages until they have successfully logged in. UC #2
2. The system shall verify that a user enters a valid username/password combination to login. UC #2
3. If the user enters an invalid username/password combination, the system shall prompt the user to reenter a valid username/password combination. UC #2
4. The system shall display the username for the current logged in user on each web page.
5. If the user selects to logout, the system shall log them out and display the login screen. UC #3
6. If the user forgets their password, the system shall allow the user to request a new recover password. UC #4
7. The system shall require the user to enter a valid username when requesting a recover password. UC #4
8. When creating a recover password, the system shall generate a new random 8-digit password. UC #4
9. The system shall send a recover password to the email address listed in the user’s account information. UC #4

### Recipes

### The system shall allow the user to create a new recipe. UC #29

### When creating a new recipe, the system shall record the date and time the recipe was created. UC #29

### When creating a new recipe, the system shall allow the user to optionally enter any of the following: name, description, notes on how to make it. UC #29

### The system shall allow the user to display a list of all their saved recipes. The list shall include the Name and Date entered. UC #30

### The system shall allow the user to display the details of any of their saved recipes. The details shall include the Name, Date entered, description, and notes on how to make it. UC #??

### The system shall allow a user to edit the name, description, and notes on how to make it, of any of their saved recipes. UC #??

### The system shall allow a user to delete a saved recipe. UC #31

### Batches

1. The system shall allow the user to create a new batch. UC #11
2. When creating a new batch, the system shall require the user to enter a name and type for the new batch. UC #11
3. When creating a new batch, the system shall record the date and time the batch was created. UC #11
4. When creating a new batch, the system shall allow the user to optionally enter a description. UC #11
5. The system shall allow the user to display a list of all their saved batches. The list shall include the Name, Date entered, Type, and Description, for each batch. UC #15
6. The system shall allow a user to edit the Name, Type, and Description, of any of their saved batches. UC #12
7. The system shall allow a user to delete a saved batch. UC #25
8. If a batch is deleted, the system shall also delete any other data associated with the batch, such as: Notes, Measurements, Ratings, etc. UC #25
9. The system shall allow a user to add a note to a batch they created. UC #13
10. When creating a new batch note, the system shall record the date and time the note was created. UC #13
11. When creating a new batch note, the system shall require the user to enter a title for the note. UC #13
12. When creating a new batch note, the system shall allow the user to optionally enter a description. UC #13
13. The system shall allow a user to edit the Title and Description of any of their saved batch notes. UC #40
14. The system shall allow a user to delete a saved batch note they created. UC #14
15. The system shall allow a user to record a batch measurement, such as OG and acidity. UC #20
16. The system shall allow the user to calculate the percent ABV for each batch. UC #18
17. When calculating the ABV, the system shall require the user to enter the FG and the temperature. UC #18
18. After calculating the ABV, the system shall record the FG, temperature, ABV, and date and time for the calculation. UC #18
19. The system shall allow a user to calculate additional ABV percentages throughout the brewing process. UC #18
20. The system shall allow a user to display the OG and all FG, ABV, and temperature values recorded for a batch. UC #22
21. The system shall allow a user to edit the any of their saved batch measurements. UC #41
22. The system shall allow a user to delete any of their saved batch measurements. UC #42

### Users

1. The user can enter a zip code and the system shall search for other registered users within that zip code. UC #07
2. When performing a zip code search, the system shall display the username, first name, last name, and email for each user in the zip code. UC #07
3. When performing a zip code search, the system shall not display the username, first name, and email for the user performing the search. UC #07

## Use Cases

1. Use Case #1 – User can create an account ACT 01 – 08

User needs to indicate they want to create an account by clicking the register button/link. The required data needed to create an account is their username, email, and password. The username needs to be unique. The user mayalso fill in their first name, last name, city, state, and zip at this time.

1. Use Case #2 – Login LOG 01 - 03

Users need to supply their user name and password to log into the system. If the input is invalid or incorrect, they will be prompted to enter it again.

1. Use Case #3 – Logout LOG 04

Users that want to logout of their session will click the logout button/link. When this is done, the system will log them out and take them back to the login screen.

1. Use Case #4 – User can recover forgotten password LOG 06 - 09

Users that want to recover their password will need to click the recover password button/link. The user will need to provide their username. The system will then send an email to the email address associated to that username with a new password.

1. Use Case #5 – User can edit account information (Email, first and last name, password, , city, state, zip) ACT 10 – 12

Users will need to go to their account and click the “edit account information” button/link. From here users will be able to update their information. When they are done updating they will need to select save to save the changes. Selecting cancel will disregard the changes.

1. Use Case #6 – User can view their account information ACT 09

Users will need to have an account, and be logged in. Users will need to click the “my account information” button/link to view their current information. Users will be able to see their first name, last name, email, username, city, state, and zip.

1. Use Case #7 – User can enter zip to find brewers around them USE 01 – 02

Users will need to click the search link, and then enter their zip code. The user will then be able to see the list of brewers that match the entered zip code. The system will show first name, last name, username, and email in this list.

1. Use Case #8 – Users can look up friends

Users will need to click the search link. From there they need to enter the username or first name or last name of the person they are looking for. The system will show the first name, last name, username, and email matching the information provided.

1. Use Case #9 – Share a batch with a friend

The user navigates to the batch they would like to share and selects the “share batch” link. The system then prompts the user to enter the username of the friend they want to share the batch with. The system then sends the batch information to the friend user.

1. Use Case #10 – User can delete their account ACT 13 – 16

Users will need to have an account and be logged in. Users will need to click the “delete account” button/link to delete their account. The user will be prompted to verify they wish to permanently delete their account. Immediately after the user verifies they wish to delete their account they will be logged out of the system and their account removed.

1. Use Case #11 – User can create a new batch BAT 01 – 03

A user can create a new batch by entering the following information:

* + Batch name
  + Type of batch (Beer, wine, etc…)
  + Description of batch (optional)

At any time during the “create new batch” process the user can edit the name, type, or description of batch.

1. Use Case #12 – Update an existing batch BAT 05

Users will need to have an account, and be logged in. Users will need to click the “Edit” button/link to edit an existing batch. The user will be able to edit the following:

* User can edit type of batch
* User can edit description

1. Use Case #13 – User can enter notes about a batch BAT 08 -10

Users will need to have an account, and be logged in. Users will need to click the “Details” button/link for an existing batch. Users can then click the “add note” link to add a note to that batch.

1. Use Case #14 – User can delete notes about a batch BAT 12

Users will need to have an account, and be logged in. Users will need to click the “edit batch” link for an existing batch. Users can then click the “delete notes” link to delete a note for that batch.

1. Use Case #15 – User can view all their batches BAT 04

Users will need to have an account, and be logged in. Users can then select the “Batches” button/link to view a list of the following information for all their saved batches:

* + Date batch was entered
  + Batch name
  + Batch type (Beer, wine, etc…)
  + Batch description

1. Use Case #16 – User can enter bottled data

When a bath has been completed, the user will create bottle information before adding it to their inventory. This bottle data includes the number of bottles, volume of the bottle and bottling date. The use can also set an alert to indicate when the bottles are ready for consumption.

1. Use Case #17 – User can delete bottle from inventory

As the user consumes bottles (or perhaps breaks them), they will need to remove them from their inventory. They will simply select which bottle they consumed. The consumption date will be record.

1. Use Case #18 – Calculate alcohol percentage BAT 16 – 19

While working on a batch, the user may want to calculate the current alcohol by volume. They will use their hydrometer to take a reading of the specific gravity and then add this measurement. Based on the original gravity (OG) they input at the start of the batch, the ABV will be calculated and stored with the date.

1. Use Case #19 – Calculate sulfites in wine

While working on a batch, the user may want to update the sulfite (SO2) information for the batch. They will take a sulfite reading using measurement equipment and enter the reading into the system. The reading will be time stamped.

1. Use Case #20 – User can enter measurements for a batch such as SG, acidity, etc. BAT 15

The user will navigate to the recorded batch and then choose add a measurement. The user can add measurements such as SG and acidity. The system will record the measurement with a time stamp.

1. Use Case #21 – Update a batch with new measurements and reading, SG, acidity, etc.

The user has taken new measurements and wants to add them to their batch. They will select the batch in the system and then choose update. From here, they will choose to add a measurement. They will select the type of measurement and enter the value. The system will record the measurement with a timestamp.

1. Use Case #22 – View trends of measurements over time, ex: how is acidity changing? BAT 20

The user may want to see how various measurements have been changing over time. They will select a batch and then select view. From here, they will choose measurements and will be shown a table or graph of how the measurements have been changing over time. This will allow them to see how the batch is progressing and spot any negative trends.

1. Use Case #23 – Add actions to a batch, for example when they racked, bottled, filtered etc.

While working on a batch, the user will need to record what actions they have performed. They will select the batch and then choose update. From here, they will choose the action performed and add notes. The action will be record by the system along with a timestamp.

1. Use Case #24 – View actions performed on a batch

The user may want to look up what actions they have performed on a batch and when. They will select the batch and then choose view. From here, they will choose to view the action history of the batch. Each action will be displayed in chronological order along with any notes.

1. Use Case #25 – User can delete batch BAT 06 - 07

When a user is done with a batch, and no longer wants the batch to exist, the user will select to delete the batch. Next the system will confirm that the user does in fact want to delete the batch. If the user confirms, the batch along with all associated saved data (Notes, Measurements, Ratings, etc…) will be deleted.

1. Use Case #26 – User can add any ingredients to a batch

A user will add many ingredients to a batch. For every ingredient, there will be specific attributes the users will add. Examples of what would be required for each ingredient include:

* Name
* Type
* Quantity
* Supplier
* Notes

Once the ingredient attributes have been input, the user saves the ingredient and its attributes

1. Use Case #27 – User can remove ingredients from a batch

When a user no longer wants certain ingredients in a batch, they have the ability to delete specific ingredients from the batch. They check the ingredients they want to remove and then click the remove ingredients button. Next the system displays a confirmation box, via a pop-up, asking the user if they are sure they want to remove the ingredients. If the user agrees, they will confirm their selection by clicking the OK button.

1. Use Case #28 – User can view their inventory

User can inventory amount and type (ex. 12 bottles, 4 gallons)

A user selects to view their inventory. Upon the selection of the view inventory page, the inventory displays and the user can see the various items in their inventory. This will help the user decide whether or not they have too many or too few ingredients.

1. Use Case #29 – Add recipes

At a certain point in time, the user will add a new recipe. Once he figures out he wants to add a recipe, they complete the associated attributes of the recipe. Once the recipe and its applicable attributes have been added, the user saves the new recipe

1. Use Case #30 – View Recipes

A user clicks the view recipes button. The recipes which have already been created are then displayed on the screen.

1. Use Case #31 – Delete recipe

When a user no longer wants certain recipes, they have the ability to delete specific recipes, by selecting remove recipe. Next the system, via a pop-up box will ask if the user does in fact want to delete the recipe. If the user agrees, they will confirm their selection by clicking the OK button.

1. Use Case #32 – Start a new batch from a recipe

A user wants to start a new batch. One way he or she can start a batch is by using other recipes to help create the new batch. She selects previously created recipes to incorporate to a new batch. Once the new recipe is in the new batch, the user clicks the Save Batch button.

1. Use Case #33 – Add reminder

* [if reminder on batch]

The user will select the reminders option. The reminders form will be presented to the user with the batch option automatically selected. The user will enter the reminder date and time along with a description and optional notes. When complete, the user will submit their data to the server. The reminder will then be associated with the batch and show on the general reminders screen. If the reminder is cancelled, any entered data will not be saved.

* [if general reminder]

The user will select the reminders screen. They will enter the reminder date and time along with a reminder description. They may optionally add notes to the reminder and associate a batch. When complete, the user will submit their data to the server. If the reminder is cancelled, any entered data will not be saved.

1. Use Case #34 – Add batch to cellar inventory

The user navigates to the inventory screen and selects the Add Batch option. The system then prompts the user to enter the bottling date, quantity, and volume. When complete, the user submits the information and the system prompts them to let them know their information has been recorded.

* Bottling date
* Bottle quantity
* Bottle volume

1. Use Case #35 – Search inventory

The user navigates to the inventory screen and selects the search option. They then enter their search criteria, such as bottling date range, quantity available, or volume available. The user then selects the search action, which searches the available inventory using the criteria specified. If no search criterion has been specified, then the search action will not be active.

1. Use Case #36 – Search ingredients

The user navigates to the ingredients screen and selects the search option. They then enter their search criteria, such as hop or grape type, malt type, etc. For instance, “malt” would show all malts while “Belgian pilsner malt” would only show Belgian pilsner malts. When submitted, the system shows the user a list of all matching ingredients found. If no search criterion has been entered, then the search action will not be active.

1. Use Case #37 – Share batch information

The user navigates to the batch they would like to share and selects the share action. The system then asks the user for the email address or user name of the user they would like to share with. If a user name is selected, then the system will send an email to the user the batch has been shared with notifying them of the shared batch. If an email address is used, then an email will be sent to the specified email address notifying the user that the batch has been shared with them. If the user is already a user of the system, then they will see the batch the next time they log in. Otherwise, the user must sign up before they can see the shared batch.

1. Use Case #38 – Rate batch

The user navigates to the batch they would like to rate. The user selects the rate option and then rates the batch on a scale of 0 to 100. When finished, they submit their rating, which records their value and associated it with the selected batch.

1. Use Case #39 – Comment on batch

The user navigates to the batch they would like to comment on. The user selects the comment option and enters their comment, which must be between 1 and 256 characters in length. When complete, the user submits their comment, which associates it with the selected batch.

1. Use Case #40 – User can edit notes about a batch BAT 11

Users will need to have an account, and be logged in. Users will need to select the “edit note” button/link for an existing batch note. Users can edit the notes title and description.

1. Use Case #41 – Users can edit a batch measurement

Users will need to navigate to the batch and then the measurement. Users will need to select the “edit measurement” button/link. Users can then make changes to the measurement values.

1. Use Case #42 – Users can delete a batch measurement

Users will need to navigate to the batch and then the measurement. Users will need to select the “delete measurement” button/link. The user will be prompted to verify they wish to delete the selected measurement.

## Classes / Objects

### <Class / Object #1>

#### Attributes

#### Functions

<Reference to functional requirements and/or use cases>

### <Class / Object #2>

…

## Non-Functional Requirements

Non-functional requirements may exist for the following attributes. Often these requirements must be achieved at a system-wide level rather than at a unit level. State the requirements in the following sections in measurable terms (e.g., 95% of transaction shall be processed in less than a second, system downtime may not exceed 1 minute per day, > 30 day MTBF value, etc).

### Performance

### Reliability

### Availability

### Security

### Maintainability

### Portability

## Inverse Requirements

State any \*useful\* inverse requirements.

## Design Constraints

Specify design constrains imposed by other standards, company policies, hardware limitation, etc. that will impact this software project.

## Logistical Database Requirements

Will a database be used? If so, what logical requirements exist for data formats, storage capabilities, data retention, data integrity, etc.

## Other Requirements

Catchall section for any additional requirements.

# Analysis Models

List all analysis models used in developing specific requirements previously given in this SRS. Each model should include an introduction and a narrative description. Furthermore, each model should be traceable the SRS’s requirements.

## Sequence Diagrams

## Data Flow Diagrams (DFD)

## State-Transition Diagrams (STD)

# Change Management Process

Identify and describe the process that will be used to update the SRS, as needed, when project scope or requirements change. Who can submit changes and by what means, and how will these changes be approved.

# Appendices

Appendices may be used to provide additional (and hopefully helpful) information. If present, the SRS should explicitly state whether the information contained within an appendix is to be considered as a part of the SRS’s overall set of requirements.

*Example Appendices could include (initial) conceptual documents for the software project, marketing materials, minutes of meetings with the customer(s), etc.*

## Appendix 1

## Appendix 2