DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
THE UNIVERSITY OF TEXAS AT ARLINGTON

SYSTEM REQUIREMENTS SPECIFICATION
CSE 4316: SENIOR DESIGN I
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THE BREW CREW
BEVERAGE MANAGEMENT

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Revision History

Revision	Date	Author(s)	Description
0.1	07.20.2020	NP	document creation
0.1	07.25.2020	KS, NP	Section added (working) 1,2
0.2	07.25.2020	BP, LC	Section added (4,5 done, 3 needed) 3,4,5
0.3	07.25.2020	SR	Section added (working) 6,7,8,9

CONTENTS

LIST OF FIGURES

1 PRODUCT CONCEPT

This section provides a high-level statement of your product concept - what it is intended to do and how it is intended to be used. Include in this header paragraph, a brief synopsis of what is described here. For example, this header paragraph might say something like: "This section describes the purpose, use and intended user audience for the X product. X is a system that performs Y. Users of X will be able to Z..."

1.1 PURPOSE AND USE

This is where you describe in a brief, yet clear and concise, manner what your product should do and how you expect it should be used.

1.2 INTENDED AUDIENCE

This is where you describe the intended audience(s) of your product. If this product were to be made available publicly or commercially, who would purchase or use it? Is the product designed for a particular customer, or an overall class of customers? Is it intended for general use, or is it a specific component of a more complex system?
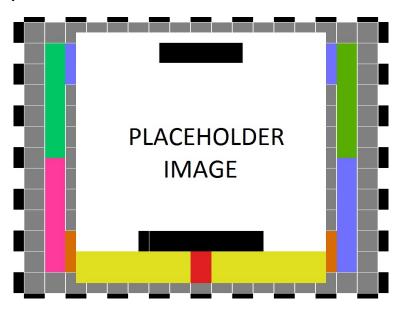

Figure 1: X conceptual drawing

2   PRODUCT DESCRIPTION

This section provides a description of your product and defines it's primary features and functions. The purpose is to give the document reader/reviewer enough information about the product to allow them to easily follow the specification of requirements found in the remainder of the document. Your header for this section should introduce the section with a brief statement such as: "This section provides the reader with an overview of X. The primary operational aspects of the product, from the perspective of end users, maintainers and administrators, are defined here. The key features and functions found in the product, as well as critical user interactions and user interfaces are described in detail." Using words, and pictures or graphics where possible, specify the following:

2.1   FEATURES & FUNCTIONS

What the product does and does not do. Specify in words what it looks like, referring to a conceptual diagram/graphic (Figure X). Define the principle parts/components of the product. Specify the elements in the diagram/graphic that are part(s) of this product as well as any associated external elements (e.g., the Internet, an external web server, a GPS satellite, etc.)

2.2   EXTERNAL INPUTS & OUTPUTS

Describe critical external data flows. What does your product require/expect to receive from end users or external systems (inputs), and what is expected to be created by your product for consumption by end users or external systems (outputs)? In other words, specify here all data/information to flow into and out of your systems. A table works best here, with rows for each critical data element, and columns for name, description and use.

2.3   PRODUCT INTERFACES

Specify what all operational (visible) interfaces look like to your end-user, administrator, maintainer, etc. Show sample/mocked-up screen shots, graphics of buttons, panels, etc. Refer to the critical external inputs and outputs described in the paragraph above.

3 CUSTOMER REQUIREMENTS

Include a header paragraph specific to your product here. Customer requirements are those required features and functions specified for and by the intended audience for this product. This section establishes, clearly and concisely, the "look and feel" of the product, what each potential end-user should expect the product do and/or not do. Each requirement specified in this section is associated with a specific customer need that will be satisfied. In general Customer Requirements are the directly observable features and functions of the product that will be encountered by its users. Requirements specified in this section are created with, and must not be changed without, specific agreement of the intended customer/user/sponsor.

3.1 REQUIREMENT NAME

3.1.1 DESCRIPTION

A detailed description of the feature/function that satisfies the requirement. For example: *The box will be slate blue. This specific color is required in order to ensure that the box matches other similar boxes in the Box Systems Premium line of products. Slate blue is specified as #007FFF, using six-digit hexadecimal color specification.* It is acceptable and advisable to include drawings/graphics in the description if it aids understanding of the requirement.

3.1.2 SOURCE

The source of the requirement (e.g. customer, sponsor, specified team member (by name), federal regulation, local laws, CSE Senior Design project specifications, etc.)

3.1.3 CONSTRAINTS

A detailed description of constraints on satisfying the requirement (e.g. one such constraint might be: *The specified color must be commercially available in paint capable of adhering to the material of which the box is manufactured. (See customer requirement 3.x for production material specification.)*

3.1.4 STANDARDS

A detailed description of any specific standards that apply to this requirement (e.g. *NSTM standard xx.xxx.x. color specifications [1].*)

3.1.5 PRIORITY

The priority of this requirement relative to other specified requirements. Use the following priorities:

- Critical (must have or product is a failure)

- High (very important to customer acceptance, desirability)

- Moderate (should have for proper product functionality);

- Low (nice to have, will include if time/resource permits)

- Future (not feasible in this version of the product, but should be considered for a future release).

3.2 REQUIREMENT NAME

3.2.1 DESCRIPTION

Detailed requirement description...

3.2.2 SOURCE

Source

3.2.3 CONSTRAINTS

Detailed description of applicable constraints...

3.2.4 STANDARDS

List of applicable standards

3.2.5 PRIORITY

Priority

4 PACKAGING REQUIREMENTS

The application software shall be loaded to our client's (Dr. Conly) mobile device. The client's preferred platform shall be android OS. Client/User can also download via google play store for free. Additionally, the application software shall be stored on team lead's external hard drive and GitHub repository.

4.1 INSTALLING APPLICATION

4.1.1 DESCRIPTION

The application will be installed in the client's device by private downloadable link provided by the team, the initial setup or installation must be required by the user.

4.1.2 SOURCE

Team

4.1.3 CONSTRAINTS

User must have access to internet connectivity.

4.1.4 STANDARDS

N/A

4.1.5 PRIORITY

High

5 PERFORMANCE REQUIREMENTS

The application should be able to precisely scan the bar code and establish the connection with the saved beverages or add new beverage to the database. Adding a new self with required number of rows and columns for initial setup for the beverages should not take more than 1-2 minutes.

5.1 ACCURATE BARCODE SCANNING

5.1.1 DESCRIPTION

The system should accurately scan the bar code with minimal number of errors.

5.1.2 SOURCE

Team member

5.1.3 CONSTRAINTS

Internet connectivity is important to make the connection with the database to match the scanned bar code.

5.1.4 STANDARDS

All information should be stored in the database.

5.1.5 PRIORITY

High

5.2 ADDING THE CUSTOM ROWS AND COLUMNS

5.2.1 DESCRIPTION

The system should allow the user to customize the desired rows and columns for their beverages.

5.2.2 SOURCE

Team member

5.2.3 CONSTRAINTS

System should properly function to meet the requirement.

5.2.4 STANDARDS

N/A

5.2.5 PRIORITY

Medium

6 SAFETY REQUIREMENTS

Include a header paragraph specific to your product here. Safety requirements might address items specific to your product such as: no exposure to toxic chemicals; lack of sharp edges that could harm a user; no breakable glass in the enclosure; no direct eye exposure to infrared/laser beams; packaging/grounding of electrical connections to avoid shock; etc.

6.1 REQUIREMENT NAME

6.1.1 DESCRIPTION

Detailed requirement description...

6.1.2 SOURCE

Source

6.1.3 CONSTRAINTS

Detailed description of applicable constraints...

6.1.4 STANDARDS

List of applicable standards

6.1.5 PRIORITY

Priority

7 Maintenance & Support Requirements

Include a header paragraph specific to your product here. Maintenance and support requirements address items specific to the ongoing maintenance and support of your product after delivery. Think of these requirements as if you were the ones who would be responsible for caring for customers/end user after the product is delivered in its final form and in use "in the field". What would you require to do this job? Specify items such as: where, how and who must be able to maintain the product to correct errors, hardware failures, etc.; required support/troubleshooting manuals/guides; availability/documentation of source code; related technical documentation that must be available for maintainers; specific/unique tools required for maintenance; specific software/environment required for maintenance; etc.

7.1 Requirement Name

7.1.1 Description

Detailed requirement description...

7.1.2 Source

Source

7.1.3 Constraints

Detailed description of applicable constraints...

7.1.4 Standards

List of applicable standards

7.1.5 Priority

Priority

8   OTHER REQUIREMENTS

Include a header paragraph specific to your product here. In this section specify anything else that is required for the product to be deemed complete. Include requirements related to customer setup and configuration if not specified in a previous requirement. Add any known requirements related to product architecture/design, such as modularity, extensibility (for future enhancements), or adaptation for a specific programming language. Consider requirements such as portability of your source code to various platforms (Windows, Linux, Unix Mac OS, etc.).

8.1   REQUIREMENT NAME

8.1.1   DESCRIPTION

Detailed requirement description...

8.1.2   SOURCE

Source

8.1.3   CONSTRAINTS

Detailed description of applicable constraints...

8.1.4   STANDARDS

List of applicable standards

8.1.5   PRIORITY

Priority

9 FUTURE ITEMS

In this last section, you will reiterate all requirements that are listed as priority 5. This is repetitive, but necessary as a concise statement of features/functions that were considered/discussed and documented herein, but will NOT be addressed in the prototype version of the product due to constraints of budget, time, skills, technology, feasibility analysis, etc. Use the following format for this section.

9.1 REQUIREMENT NAME

9.1.1 DESCRIPTION

Detailed requirement description...

9.1.2 SOURCE

Source

9.1.3 CONSTRAINTS

Detailed description of applicable constraints...

9.1.4 STANDARDS

List of applicable standards

9.1.5 PRIORITY

Priority

REFERENCES

[1] Kenneth S Rubin. *Essential Scrum: A Practical Guide to the Most Popular Agile Process*. Addison-Wesley Professional, 1st edition, 2012.