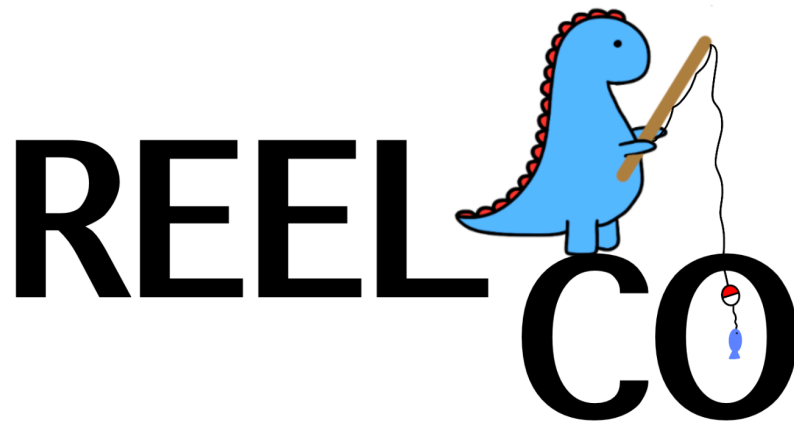

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REEL COLOSET
Software Requirements Specifications

Version <1.2>



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Software Requirements Specification

1. Introduction

1.1 Purpose

The purpose of this document is to describe the requirement specifications for an outfit generator based on the weather. The intended audience of this document includes the prospective developers of this outfit generator system.

1.2 Scope

The software system to be created is the REEL COLOSET, which will be referred to as "RC" throughout the rest of this document. RC allows consumers to create an account, input their city, and input the clothing items in their closet. Then RC will generate a daily outfit based on the weather of the city the consumer's account has inputted. This product is helpful for minimizing time selecting outfits as well as providing insightful advice for creating more functional outfits. This will apply to the RC Use-Case model from the Use-Case Specifications document.

1.3 Definitions, Acronyms, and Abbreviations

ACK-NACK

Acknowledgement-Negative Acknowledgement; a message sent by the receiver to the transmitter to indicate if it has correctly or incorrectly received a data packet.

API

Application Programming Interface; a software system that allows two applications to interact with each other.

CSS

Cascading Style Sheets; programming language used to describe how HTML elements should be described.

Field

A box or section on the page that the consumer can interact and type into.

HTML

HyperText Markup Language; markup language that describes how elements should be displayed on a browser.

IP

Internet Protocol; communications protocol for network-connected computers.

RC

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SQL

Structured Query Language; programming language used for managing and organizing databases.

TCP

Transmission Control Protocol; a protocol to the internet suite.

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1.4 References

IEEE Std. 830-1998: IEEE Recommended Practice for Software Requirements Specifications

1.5 Overview

The rest of this document contains an overall description of the RC website system (section 2), and the specific requirements for the system (section 3). It will define the overall descriptions of each part of the document then list out all requirements needed for the product and finally classify all the functional requirements into categories.

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2. Overall Description

2.1 Product perspective

This product was created to help people cut down the time it takes to create an outfit, and to reduce some of the stress involved in coming up with outfits that look stylish. Another purpose for this product involves the fact that the weather plays a big part in what a person should wear - RC takes the guesswork out of what the outfit needs in order to be consistent with the weather forecast of the day. It will use a database and an API to perform these tasks, which will interact with the RC System and the Login/Logout System.

2.1.1 System Interfaces

The RC web application to be developed is a software as a service accessible via web browser on the internet. It consists of four major components: a Login/Logout System, the RC System, a weather API, and a Database.

The Login/Logout System allows users to log into and out of the RC website. The Login/Logout System is connected to the database where user login information is stored. Once logged in, the user interacts with the RC System which allows the user to look at and edit their closet and move things to and from laundry as well as view their daily recommended outfit. The daily recommended outfit section of the RC system connects to both the database and the weather API, both of which are used to generate the outfit for the day. The database also connects to the RC System through the user info tab where the user can edit their account information that's stored in the database.

2.1.2 User Interfaces

The Login/Logout System and RC System must provide a user interface that is available through any web browser. The database and weather API do not have a user interface.

The Login/Logout System user interface shall have two fields for the user to input their username and password into. The text entered into the password field will be hidden and there will be a button to log in. There will also be a button for creating a new account. When the "create new account" button is pressed it will prompt the user for a username, password, email, and to select a city from a drop down menu. On this page there will be a button to finish making your account. It will then take the user to the RC System that is logged into their new account.

The RC System will have 4 separate tabs for the user profile, the closet, laundry, the daily outfit. There will also be a logout button in the top right of the page. On the user profile page there will be fields for all of the user's information, which will include their username, email, selected city, and hidden password. There will be a button at the bottom to edit their profile, which will create text boxes under each field to enter their new information, and a button at the bottom to confirm changes. The closet will include a catalog of all items in the closet with icons and names for each item. There will also be a button that allows the user to add a new item. Add will prompt them with a template to create a new item. Each item will have an option to delete it or move it to the laundry. The laundry closet will also have a catalog of items, each of which will have an option to move it back to the closet. The Daily Outfit tab will show the current city selected, the current temperature, a written description of the current weather and each of the items selected from the user's closet that it recommends for that day. When the logout button is selected it will take the user back to the Login/Logout Interface.

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2.1.3 *Hardware Interfaces*

All components must be able to execute on a personal computer.

2.1.4 *Software Interfaces*

The Software Interfaces that are used by RC includes the weather API database interface and the Account Information database interface. The Software Interfaces are what the program will interact with to generate the daily outfit recommendations and keep the laundry hamper updated. The API is where the program gets its information as to what the weather is in a particular location which is used to base the program's daily outfits recommendations on. The database is used to securely store all personal information a user has connected to the site, which includes their login information, location, email and catalog of clothing items. All details of how these documents interact with the system can be found in the Use-Case Specifications document.

2.1.5 *Communication Interfaces*

All systems will be able to communicate with the server using a TCP/IP connection. The Server and Database will be located on the same host in order to communicate.

2.1.6 *Memory Constraints*

The primary memory constraints that are demanded by the RC Web Application demands less than 100 Mb of RAM.

2.1.7 *Operations*

The operation of the RC and Login/Logout Systems must be easy and intuitive for the average internet user. The user will initiate most operations that the systems will carry out. These operations are logging into and out of the website, creating a new account, editing profile information, adding and removing clothes from the closet, and moving clothes from closet to laundry and vice versa. The generated daily outfit operation is an unattended operation and will not require any user input. Backup operations will occur once a week and in the case of network failure, user machine failure, and database failure, the most recent backup will be restored. This will allow for most information to be recovered.

2.2 **Product functions**

The main functions of RC are viewing the daily generated outfit, updating the closet, and moving clothing items from the closet to the laundry hamper and vice versa. The daily generated outfit is based on the weather for the city that the consumer inputs into their account as well as the available items in the closet. Updating the closet allows the consumer to add new clothing items and make specific notes about the item as well as deleting an item if the consumer no longer owns it. The consumer can say which clothing items they wore that day and then those will get put into the laundry hamper. The database will store all personal information entered into the user's profile as well as a catalog of the items in their closet.

2.3 **User characteristics**

Users are the consumers of the product who are familiar with how the internet works and can navigate to a website. Consumers are knowledgeable of what their username and password is, as well as being familiar with what articles of clothing are in their closet.

2.4 **Constraints**

An API call will be made to the Weather API when an outfit is generated for the consumer, which

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therefore accesses an interface to another application. Audit functions in the RC System include static code analysis that will be run in the main source file to highlight any bugs or security problems. There will be a set of overhead control functions that provide a global scope for the program but will not be fully reliant on them. The program will utilize a combination of Javascript, SQL, HTML, and CSS - this means that potential intersectionality between the coding programs will need to be addressed when problems arise, especially when combining with SQL.

Regarding signal handshake protocols, ACK-NACK data acknowledgement protocols will be pivotal in ensuring data from the API as well as the data servers will not be lost or dropped during transmission. An internet and live data server is also pivotal for consumers to properly interact and log in to the web application. Therefore, username and password setup are an important layer of security to protect user data.

2.5 Assumptions and dependencies

There is the assumption that the consumer is using a non-deprecated browser and has the internet knowledge to navigate a website.

2.6 Requirements subsets

- 2.6.1 A badge system to reward users based on their interaction with the app (i.e., "You've worn these jeans 5 times!", "You've done laundry 3 times!").
- 2.6.2 A travel feature where a user can input where they're going and what events they're attending.
- 2.6.3 Helpful clothing tips will be generated with each Daily Outfit.
- 2.6.4 A notification system that will send users a daily email containing their Daily Outfit.
- 2.6.5 A 'Favorite' option where users can favorite their most beloved clothing items so that they will be generated more often in their Daily Outfits.
- 2.6.6 A counter keeps track of how many times an article of clothing is worn, and will notify the user to wash an article after it is worn a specified number of times.

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3. Specific Requirements

3.1 Functionality

3.1.1 < RC System >

- 3.1.1.1 The user shall be able to open the Daily Outfit tab.
- 3.1.1.2 The user shall be able to open the Closet Tab.
- 3.1.1.3 The user shall be able to delete a clothing item from the closet.
- 3.1.1.4 The user shall be able to add a clothing item to the closet.
- 3.1.1.5 The user shall be able to open the Laundry tab.
- 3.1.1.6 The user shall be able to open the Profile tab.
- 3.1.1.7 The user shall be able to edit their profile information.
- 3.1.1.8 The user shall be able to move their closet inventory into Laundry.
- 3.1.1.9 The user shall be able to click the 'Wash Clothes' button.
- 3.1.1.10 The system shall generate a guest session that does not require user authentication.
- 3.1.1.11 The user shall be able to accept/decline the generated outfit.
- 3.1.1.12 The user shall be able to create an account.
- 3.1.1.13 The user shall be able to create separate wardrobes for different events (i.e., formal wear).
- 3.1.1.14 The user shall be able to favorite certain clothing items.
- 3.1.1.15 The system shall alert the user when their hamper is full.
- 3.1.1.16 The user will be able to add specific details about an article of clothing.
- 3.1.1.17 **NEW** The user will be able to switch between fahrenheit and celcius.
- 3.1.1.18 The initial window of the Login/Logout System shall have a password and username field as well as a button labeled login. The password field shall be hidden. There will also be a button to create a new account.
- 3.1.1.19 The main window will have four tabs: Daily Outfit, Laundry, Closet, and Profile. It will also include a logout button.
- 3.1.1.20 The Daily Outfit tab will include the temperature, city, brief description of the weather, and an outfit suggestion for the day.
- 3.1.1.21 The Laundry tab will have a catalog of dirty clothes and a do laundry button.
- 3.1.1.22 The Closet Tab will have a catalog of clothing items as well as the ability to delete a specific item or move it to the laundry basket. There will also be an add item button to create a new item.
- 3.1.1.23 The Profile Tab will include fields that list the user's username, selected city, email, and hidden password. There will be an edit profile button that allows the user's to change their profile information by typing in the new information and hitting the confirm changes button.

3.1.2 < Login/Logout System >

- 3.1.2.1 The user shall be able to load the login page.
- 3.1.2.2 The user shall be able to enter their username & password.
- 3.1.2.3 The system shall authenticate the user and open their account.
- 3.1.2.4 The system shall log the user out of their account.
- 3.1.2.5 If the authentication is successful, the user shall be directed to the RC System.
- 3.1.2.6 If the authentication is unsuccessful, the system shall display an 'Invalid Username/Password' message.
- 3.1.2.7 When the login button is pressed a query shall be sent to login to the system.
- 3.1.2.8 When the logout button is pressed a query shall be sent to logout of the system.

3.1.3 < Weather API >

- 3.1.3.1 The API shall retrieve the weather for the user's location.
- 3.1.3.2 The API shall be accessed every hour to keep the current weather information up to date.

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3.1.4 < Database>

- 3.1.4.1 The database shall store user closet data.
- 3.1.4.2 The database shall store the user location data.
- 3.1.4.3 The database shall store the consumer's username.
- 3.1.4.4 The database shall store the user's password.
- 3.1.4.5 The database shall store the user's email address.
- 3.1.4.6 The database shall store data regarding the user's laundry basket.
- 3.1.4.7 The database shall empty clothes in the laundry basket after the user clicks the 'Wash Clothes' button.
- 3.1.4.8 The database shall keep a temporary history of what the user has worn.
- 3.1.4.9 The database shall generate favorites items more frequently.
- 3.1.4.10 The database shall respond to query requests from the program.

3.2 Use-Case Specifications

3.2.1 RC System

- 3.2.1.1 Closet
- 3.2.1.2 Laundry
- 3.2.1.3 Create Account
- 3.2.1.4 Edit Profile
- 3.2.1.5 Daily Outfit
- 3.2.1.6 Login/Logout

3.2.2 Login/Logout System

- 3.2.2.1 Login
- 3.2.2.2 Logout
- 3.2.2.3 Validate Query
- 3.2.2.4 Execute Query
- 3.2.2.5 Access Database

For more information regarding use-case specifications, refer to the Use-Case Specifications document.

3.3 Supplementary Requirements

For further details on the Supplementary Requirements please refer to the Supplementary Specifications document.

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4. Classification of Functional Requirements

Functionality	Type
3.1.1.1 The user shall be able to open the Daily Outfit tab.	Essential
3.1.1.2 The user shall be able to open the Closet Tab.	Essential
3.1.1.3 The user shall be able to delete a clothing item from the closet.	Essential
3.1.1.4 The user shall be able to add a clothing item to the closet.	Essential
3.1.1.5 The user shall be able to open the Laundry tab.	Essential
3.1.1.6 The user shall be able to open the Profile tab.	Essential
3.1.1.7 The user shall be able to edit their profile information.	Essential
3.1.1.8 The user shall be able to move their closet inventory into Laundry.	Essential
3.1.1.9 The user shall be able to click the 'Wash Clothes' button.	Essential
3.1.1.10 The system shall generate a guest session that does not require user authentication.	Desirable
3.1.1.11 The user shall be able to accept/decline the generated outfit.	Desirable
3.1.1.12 The user shall be able to create an account.	Essential

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3.1.1.13 The user shall be able to create separate wardrobes for different events (i.e., formal wear).	Desirable
3.1.1.14 The user shall be able to favorite certain clothing items.	Desirable
3.1.1.15 The system shall alert the user when their hamper is full.	Desirable
3.1.1.16 The user will be able to add specific details about an article of clothing.	Desirable
3.1.1.17 NEW The user will be able to switch between fahrenheit and celsius.	Desirable
3.1.1.18 The initial window of the Login/Logout System shall have a password and username field as well as a button labeled login. The password field shall be hidden. There will also be a button to create a new account.	Essential
3.1.1.19 The main window will have four tabs: Daily Outfit, Laundry, Closet, and Profile. It will also include a logout button.	Essential
3.1.1.20 The Daily Outfit tab will include the temperature, city, brief description of the weather, and an outfit suggestion for the day.	Essential
3.1.1.21 The Laundry tab will have a catalog of dirty clothes and a do laundry button.	Essential
3.1.1.22 The Closet Tab will have a catalog of clothing items as well as the ability to delete a specific item or move it to the laundry basket. There will also be an add item button to create a new item.	Essential
3.1.1.23 The Profile Tab will include fields that list the user's username, selected city, email, and hidden password. There will be an edit profile button that allows the user's to change their profile information by typing in the new information and hitting the confirm changes button.	Essential
3.1.2.1 The user shall be able to load the login page.	Essential
3.1.2.2 The user shall be able to enter their username & password.	Essential
3.1.2.3 The system shall authenticate the user and open their account.	Essential

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3.1.2.4 The system shall log the user out of their account.	Essential
3.1.2.5 If the authentication is successful, the user shall be directed to the RC System.	Essential
3.1.2.6 If the authentication is unsuccessful, the system shall display an 'Invalid Username/Password' message.	Essential
3.1.2.7 When the login button is pressed a query shall be sent to login to the system.	Essential
3.1.2.8 When the logout button is pressed a query shall be sent to logout of the system.	Essential
3.1.3.1 The API shall retrieve the weather for the user's location.	Essential
3.1.3.2 The API shall be accessed every hour to keep the current weather information up to date.	Essential
3.1.4.1 The database shall store user closet data.	Essential
3.1.4.2The database shall store the user location data.	Essential
3.1.4.3 The database shall store the consumer's username.	Essential
3.1.4.4 The database shall store the user's password.	Essential
3.1.4.5 The database shall store the user's email address.	Essential
3.1.4.6The database shall store data regarding the user's laundry basket.	Essential
3.1.4.7 The database shall empty clothes in the laundry basket after the user clicks the 'Wash Clothes' button.	Essential

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3.1.4.8 The database shall keep a temporary history of what the user has worn.	Desirable
3.1.4.9 The database shall generate favorites items more frequently.	Desirable
3.1.4.10 The database shall respond to query requests from the program.	Essential